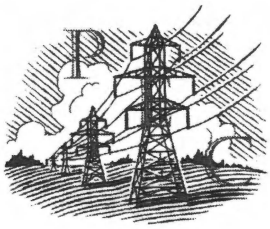
DOCKETED	
Docket Number:	06-AFC-05C
Project Title:	Panoche Energy Center
TN #:	231146-1
Document Title:	Panoche Energy Center - 2018 Annual Compliance Report - Part 1
Description:	2018 Annual Compliance Report (Part 1) for the Panoche Energy Center
Filer:	Mary Dyas
Organization:	Panoche Energy Center
Submitter Role:	Applicant
Submission Date:	12/11/2019 1:30:02 PM
Docketed Date:	12/11/2019



Panoche Energy Center
43883 W. Panoche Road, Firebaugh CA 93622

July 26, 2019

Mary Dyas
Compliance Project Manager
California Energy Commission
Energy Facilities Sitting Division
1516 Ninth Street, MS 2000
Sacramento, CA 95814-5504

RE: Panoche Energy Center (06-AFC-5)
Condition of Certification COMPLIANCE-7
Annual Compliance Report Submittal

Dear Mrs. Dyas:

Pursuant to Condition of Certification COMPLIANCE-7, please find enclosed the Panoche Energy Center Annual Compliance Report for the July 1, 2018 through June 30, 2019 compliance period.

Should you have any questions or require additional information, please do not hesitate to contact Barry Lajoie, Compliance Manager at (559) 659-2270 x103, or on his cell phone at (805) 305-1776.

Sincerely,

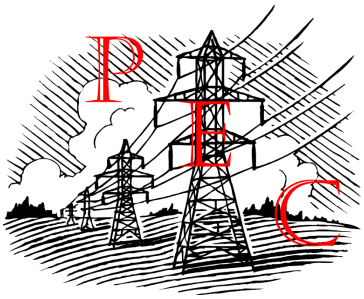
Mel Murphy
Vice President Project Management
PPMS, LLC

Enclosures

Mary Dyas *July 26, 2019*
Compliance Project Manager
California Energy Commission
Energy Facilities Sitting Division
1516 Ninth Street, MS 2000
Sacramento, CA 95814-5504

RE: Panoche Energy Center (06-AFC·5)
Submittal for Condition of Certification COMPLIANCE-7
Annual Compliance Report

bcc : Panoche EHS File 106-40-02
Robin Shropshire, PPMS
Dave Fisher, Panoche Energy Center
Mike Crippen, NAES



ANNUAL COMPLIANCE REPORT

July 1, 2018 through June 30, 2019

Prepared For:

California Energy Commission

By:

Panoche Energy Center, LLC
43883 W. Panoche Road
Firebaugh, CA 93622

Overview

This report is submitted by Panoche Energy Center, LLC (PEC) in compliance with Condition of Compliance COMPLIANCE-7 (Annual Compliance Report) of the California Energy Commission's Final Decision Document # CEC-800-2007-004-CMF. The report covers the reporting period from July 1, 2018 through June 30, 2019.

COMPLIANCE-7 states that, in addition to specifying the reporting period, each Annual Compliance Report shall contain the following:

1) An updated compliance matrix showing the status of all Conditions of Certification (fully satisfied conditions do not need to be included in the matrix after they have been reported as complete); and,
2) A summary of the Current Project operating status and an explanation of any significant changes to facility operations during the year; and,
3) Documents required by specific conditions to be submitted along with the Annual Compliance Report. Each of these items must be identified in the transmittal letter, and submitted as Appendixes to the Annual Compliance Report; and,
4) A cumulative listing of all post certification changes approved by the Energy Commission or cleared by the CPM; and,
5) An explanation for any submittal deadlines that were missed, accompanied by an estimate of when the information will be provided; and,
6) A listing of filings submitted to, or permits issued by, other governmental agencies during the year; and,
7) A projection of project compliance scheduled during the next year;
8) A listing of the year's additions to the on-site compliance file; and,
9) An evaluation of the on-site contingency plan for unplanned facility closure, including suggestions necessary for bringing the plan up to date (see Compliance Conditions for Facility Closure); and,
10) A listing of complaints, notices of violation, official warnings, and citations received during the year, a description of the resolution of any resolved matters, and the status of any unresolved matters.

Each of the Condition 7 elements is addressed individually in the body of the document. For the sake of clarity, the format of this report follows that of Condition 7 with the numbering scheme for each section corresponding to the numbered items of Condition 7.

1 COMPLIANCE MATRIX

The Compliance Matrix for the reporting period is presented in Appendix 1 and documents the compliance status of all active Conditions of Certification. As stated in Item 1 of COMPLIANCE-7, completed and fully satisfied conditions do not need to be presented in the matrix. Therefore, the Compliance Matrix in Appendix 1 presents only those requirements that are ongoing requirements.

2 PROJECT OPERATING STATUS SUMMARY

PEC is a purpose-built peaking facility designed to support the electric power grid during periods of high demand and in the event of loss of other generating resource (i.e., scheduled and unscheduled maintenance of other power plants). The facility is dispatched by PG&E in accordance with the Power Purchase Agreement executed between the two parties. With its state-of-the-art technology, PEC is an important component of the State's electric power grid providing rapid response and efficient generation in support of the State's electric power needs. The operating status of PEC remains unchanged from the prior reporting period.

Operation of the EWS, which was approved by the California Energy Commission on March 11, 2015 and which commenced operation in July 2016, continues to reduce both the amount of groundwater utilized by the plant and wastewater disposal through deep well underground injection.

3 DOCUMENTATION FOR SPECIFIC CONDITIONS

Item 3 of Condition 7 requires the submittal of documentation specified by various Conditions of Compliance (COC) with the Annual Compliance Report. Following are discussions of the COCs which are required to be addressed in the Annual Compliance Certification:

- *AQ-SC1, AQ-SC2, AQ-SC3, AQ-SC4 and AQ-SC5*: These conditions of compliance require the implementation, monitoring and reporting of various air quality mitigation measures related to construction activities.

  Verification: PEC's Air Quality Construction Mitigation Plan (AQCMP) dated November 20, 2007 was submitted to, and approved by, the California Energy Commission prior to initial construction of the facility. The AQCMP was again employed during construction of the EWS between August 2015 and December 2017.

  During the reporting period covered by this report, no construction or grading activities were performed. All previously implemented fugitive dust mitigation measures including coverage of ground surfaces with geo-cloth and gravel and completion of all internal roadways with either asphalt or non-dust generating compacted AG base, remained in place and effective during the reporting period. The Air Quality Construction Mitigation Plan (AQCMP) will be fully implemented during any future construction activities.

- AQ-SC6: This condition requires submittal of proposed air permit modifications to the CEC for review and approval.

  Verification: PEC's current Title V air permit was issued by the San Joaquin Valley Air Pollution Control District (SJVAPCD) on February 13, 2017 covering operation of the four combustion turbines, emergency diesel fire pump and cooling tower in addition to various site wide requirements. The February 13, 2017 Title V Permit was previously submitted to the CEC with the 1st Quarter 2017 Air Operations Report which is hereby included by reference.

  During the reporting period, all permit conditions contained in the February 13, 2017 Title V Permit remained in place and unmodified. In addition, no applications to amend the permit were submitted during the reporting period.

- AQ-SC8: This condition of compliance requires the reporting of annual CO_2 equivalent emissions from combustion of natural gas by the four combustion turbine engines to an approved greenhouse gas registry or to the California Air Resources Board (CARB) upon complete adoption and implementation of the California Global Warming Solutions Act of 2006.

  Verification: PEC reports annual greenhouse gas emissions to the US EPA through the federal eGGRT online reporting tool and to CARB through the state's Cal-eGGRT online reporting tool. The emissions reported to CARB are reviewed and verified by an authorized third party.

- *BIO-1, BIO -2, BIO-3 and BIO-4:* These COCs require the assignment of a Designated Biologist to the project and that the Designated Biologist performs specified duties during any site mobilization, ground disturbance, grading, construction, operation, and closure activities.

  Verification: The facility's CEC approved Designated Biologist (Lincoln Hulse, NOREAS) remains unchanged since initial project construction. Appendix 3A contains the Biological Resources Annual Compliance Memorandum prepared by the Mr. Hulse documenting ongoing implementation of mitigation measures to avoid biological impacts and continuing compliance with all applicable biological COCs. In addition, Mr. Hulse states that no biological incidents occurred during the reporting period.

- *BIO-5:* BIO-5 details the requirement to develop and implement a CPM approved Worker Environmental Awareness Program (WEAP) to inform employees and contractors involved with site construction and operation of sensitive biological resources that may be encountered while working at the site and how to avoid impacting them.

Verification: The original WEAP (NOREAS, 2008) was developed by the Designated Biologist as required by the CEC, for use during both construction and operations phases of PEC. A WEAP Natural Resources Training Handbook (Handbook) was also developed by NOREAS to supplement the WEAP. The Handbook was updated by NOREAS (July 2015) to support construction of the EWS.

Appendix 3B contains both the WEAP and the WEAP Handbook (NOREAS, July 2015) used for biological awareness training at PEC during the reporting period. In addition to these training materials, plant staff watched the WEAP training video (URS and NOREAS, 2008) originally prepared for construction and operation of the facility.

- *BIO-6:* This condition requires the project owner to prepare and implement a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP).

  Verification: The original BRMIMP, which was developed to support construction of the power generation portion of the facility, was updated (June 2015, NOREAS) by the Designated Biologist and approved by the CPM for use during and after construction of the EWS to include additional requirements. The June 2015 BRMIMP provides the framework for mitigating biological impacts and responding to any biological incidents or events (see Appendix 3C for a copy of the June 2015 BRMIMP).

- *HAZ-1:* This condition requires the submission of a list of hazardous materials and storage quantities with the Annual Compliance Report.

  Verification: Pursuant to the requirements of Health & Safety Code 25505, PEC maintains a current Hazardous Materials Business Plan (HMBP) on the California Environmental Reporting System (CERS) database. A printout of the current PEC HMBP is contained in Appendix 3D and provides a list of all hazardous materials used at PEC above HMBP reporting thresholds, their quantities, their storage locations, and other physical and hazard category information.

- *LAND-1*: This condition requires the mitigation of impacts resulting from the loss of prime agricultural land due to construction of the facility. The condition also requires the submittal of updates on the status of farmland/easement purchases with the Annual Compliance Report.

  Verification: LAND-1 as presented in the CEC's Final Commission Decision dated December 21, 2007 approving PEC's Application for Certification (06-AFC-5) required mitigation for the loss of 15.3 acres of prime irrigated farmland. LAND-1 has been subsequently modified twice; first on March 25, 2009 for the additional 6.5-acre expansion of the proposed PG&E substation (Order 09-325-2) and then again on March 16, 2015 to include an additional 3.5 acres for construction of the EWS (Docket 06-AFC-05C). In each case, Farmland Mitigation Agreements were executed between PEC and the San Joaquin River Parkway & Conservation Trust

(SJRPCT) including the payment of mitigation funds to the SJRPCT by PEC in the amount necessary to fully mitigate prime farmland loss due to the development of the project at a 1:1 ratio. At present, the requirements of LAND-1 have been fully satisfied and all required records documenting the SJRPCT's use of the funds to protect the necessary amount of prime farmland have previously been provided to the CEC and are hereby included by reference.

- *SOCIO*-1: This condition requires the submission of a one-time statutory school development fee to the Mendota Unified School District.

  Verification: SOCIO-1 was last triggered with the CECs approval of the October 13, 2014 petition to amend for the construction of the EWS. Documentation of payment of the statutory school development fee was submitted with the 2016 Annual Compliance Report covering the July 1, 2015 through July 1, 2016 reporting period. There were no additional statutory school fee requirements during the reporting period.

- *SOIL & WATER-2:* This condition requires submittal of documentation related to monitoring and maintenance activities performed pursuant to the Drainage, Erosion and Sedimentation Control Plan previously approved by the CEC. Storm water falling within the facility's boundary is directed by site grading and engineered drainage components (i.e., storm drains and swales) to the onsite storm water retention basin such that no offsite discharge occurs.

  Verification: During the reporting period, no construction or site grading activities occurred, and all previously approved site drainage and erosion control measures remained in place. Only minor maintenance activities such as clearing gravel from around storm drains were performed required during the reporting period.

  In addition, all hazardous material delivery, storage and handling activities during the reporting period were performed in compliance with Section 4.6 Waste Management and Materials Pollution Control of the approved Drainage, Erosion and Sedimentation Control Plan and applicable local, state and federal regulations. There were no unauthorized releases of hazardous materials or oil to soil or water resources during the reporting period. All hazardous materials and oil were stored in appropriate containers with proper containment located in designated areas. Weekly hazardous and universal waste area inspection records and monthly SPCC inspection records for the reporting period are presented in Appendix 3E.

- *SOIL & WATER-6:* During the life of the project, the annual monitoring report summary required by the UIC Class I Permit shall be submitted and all violations, exceedances, enforcement actions or corrective action shall be explained.

  During the reporting period, there were no exceedances or deviations from requirements specified in the UIC permit. In addition, there were no enforcement actions or corrective actions during the reporting period.

Verification: The 4th Quarter 2018 Monitoring Report, Class 1 Nonhazardous Waste Injection Wells, including annual summary forms, is presented in Appendix 3L of this report. This report, prepared by Haley & Aldrich, Inc. and previously submitted to the US EPA and the CEC, documents compliance with applicable injection well operating and monitoring requirements. Though the CEC was previously provided a copy of this report, it is included in Appendix 3F of this report for the readers convenience.

- *SOIL & WATER* -7: This condition requires that the project owner provide copies of the final groundwater well permits issued by the County of Fresno to the CPM. In addition, the condition requires the submittal of any permit changes to the CPM within 10 days of their submittal to Fresno County and the submittal of any notice of violations issued by the County within 10 days of receipt. Further, corrective actions for any NOV's issued by the County shall be described in the following annual compliance report.

  Verification: During the reporting period, no well modification requests were submitted to Fresno County and no NOV's were received.

- *SOIL & WATER-8:* This condition requires submittal of summarized water use statistics including the monthly average and range of daily water usage in gallons per day and total water used on a monthly and annual basis in acre feet. This condition also requires the submittal of calibration certification reports for monitoring equipment used during the reporting period.

  Verification: All water used at PEC is produced from two onsite ground water wells permitted by Fresno County. The following table presents the facility's daily ground water use during the reporting period. As can be seen, the facility's maximum daily ground water usage was well below the 2,500 kgal/day limit.

Table 1: SOIL & WATER-8, Daily Water Use Summary

Daily Water Use Summary & Compliance Status July 1, 2018 - June 30, 2019 Panoche Energy Center					
	GROUNDWATER WITHDRAWL (1)			COMPLIANCE	
Month-Year	Minimum (kgal/day)	Average (kgal/day)	Maximum (kgal/day)	Daily Limit (kgal/day)(2)	Daily Limit Compliance (YES/NO)
Jul-18	0.0	876.9	2,331.9	2,500	YES
Aug-18	0.4	863.3	2,140.1	2,500	YES
Sep-18	0.0	379.0	1,128.6	2,500	YES
Oct-18	0.1	425.6	1,834.8	2,500	YES
Nov-18	0.0	450.7	1,022.2	2,500	YES
Dec-18	0.0	313.0	920.3	2,500	YES
Jan-19	0.6	416.0	1,129.3	2,500	YES
Feb-19	0.0	225.7	1,082.6	2,500	YES
Mar-19	0.0	30.0	94.7	2,500	YES
Apr-19	0.0	22.5	87.3	2,500	YES
May-19	0.0	75.3	403.5	2,500	YES
Jun-19	0.0	380.6	1,273.3	2,500	YES

Notes:
1) Groundwater withdrawl data from PEC "Daily Production Report"
2) Maximum Daily Compliance = YES if maximumd daily water use less than or equal to 2,500 kgal/day

The following table presents the total groundwater use per month during the reporting period and shows that annual water usage was well below the annual limit of 1,154 acre-ft/year.

Table 2: SOIL & WATER-8, Monthly & Annual Water Use Summary

Annual Water Use Summary & Compliance Status July 1, 2018 - June 30, 2019 Panoche Energy Center		
	Monthly Groundwater Withdrawl(1)	
Month-Year	(kgal / mnth)	(Acre Ft / Mnth)
Jul-18	27,185	83.4
Aug-18	26,761	82.1
Sep-18	11,370	34.9
Oct-18	13,194	40.5
Nov-18	13,522	41.5
Dec-18	9,704	29.8
Jan-19	12,895	39.6
Feb-19	6,320	19.4
Mar-19	930	2.9
Apr-19	675	2.1
May-19	2,259	6.9
Jun-19	11,417	35.0
Annual Total (kgal/yr)	136,231	418.1
Annual Limit (acre ft/yr)		1,154
Annual Limit Compliance		**YES**

Note: (1) Data from PEC Daily Report (last day of month)

Lastly, the flow meters used to monitor groundwater withdrawal from each of the two ground water wells are calibrated annually. Both meters were last calibrated on November 1, 2018 by Telstar Instruments (see Appendix 3G for the calibration certificates).

- *SOIL & WATER-9:* This condition required the payment of a one-time fee of $1,500,000 to the Westlands Water District for use in their Expanded Irrigation System Improvement Program (EISIP) which provides low interest loans to farmers within the District to install low water use irrigation systems - typically drip micro-irrigation. The loans must be repaid over a four-year period thus making the funds available to for reallocation to additional irrigation improvement projects on an ongoing basis. SOIL&WATER-9 also requires the submission of an executed agreement with Westlands Water District governing the payment and use of the mitigation fee and also requires submission of information provided by Westlands Water District about the projects that have been funded in the Annual Compliance Report. The executed agreement was previously provided to the CEC and is hereby included by reference.

  Verification: In their evaluation of PEC's Application for Certification (AFC), CEC staff estimated the project's impacts to ground water resources assuming operation of the facility at the maximum permitted level of 5,000 hours per year (total of all four combustion turbines). Based on Westlands Water District experience and studies in the agriculture industry, CEC staff determined that 15 irrigation improvement projects could be funded with the mitigation fee provided by PEC during the first four years and that those projects would result in annual water savings of 628 acre-feet/year (AFY). CEC staff also concluded that after year 8, the repeating cycle would sustain about 30 irrigation improvement projects indefinitely with water savings of about 1,256 AFY.

  Westlands Water District has provided reports for the EISIP projects funded by PEC containing the information specified in SOIL&WATER-9 (see Appendix 3H). Using these reports PEC has estimated groundwater reductions resulting from implementation of the EISIP irrigation system improvement projects using the same assumptions used by CEC staff for their assessment of project groundwater impacts (see Final Commission Decision, page 182 through 185).

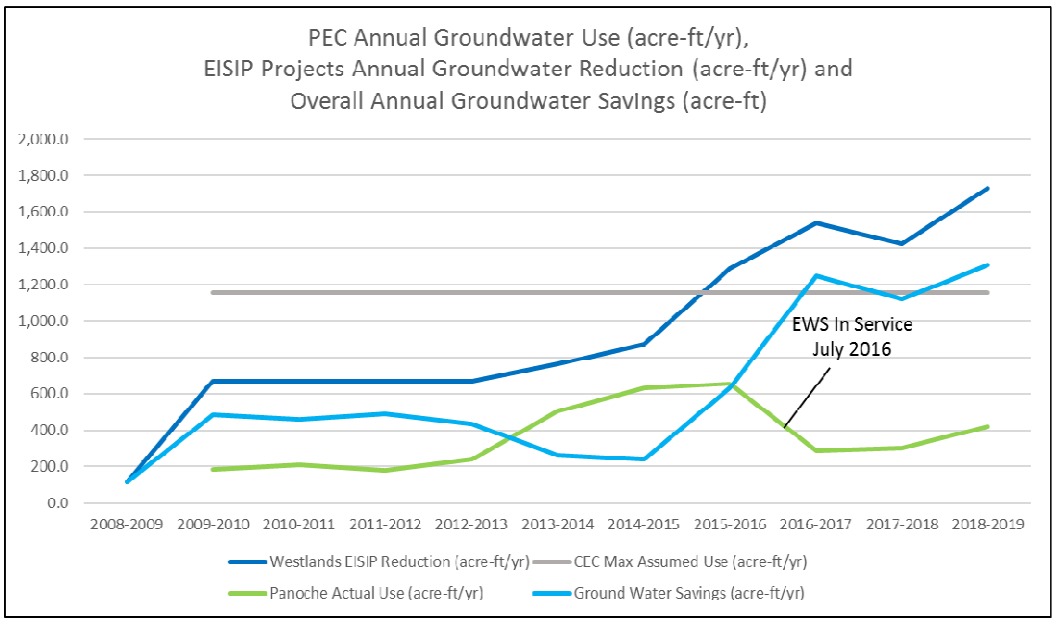
  The following table presents the annual groundwater reductions achieved with the EISIP irrigation improvement projects, actual measured groundwater withdrawal by PEC, and overall groundwater withdrawal savings (the difference between EISIP reductions and PEC use).

Table 3: SOIL & WATER-9, Westlands Water District EISIP Irrigation Improvement Projects

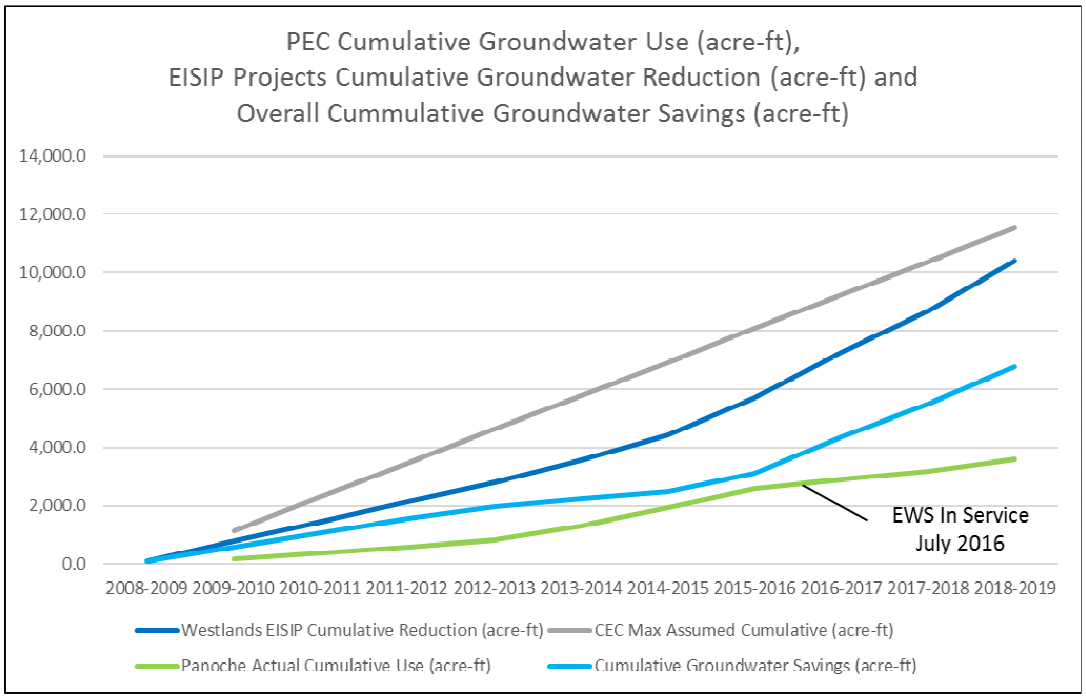
Reporting Period	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019
EISIP Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
EISIP Reductions (AFY)	115.1	669.9	669.9	669.9	669.9	764.1	868.7	1287.4	1538.6	1,423.5	1,727.0
PEC Actual Use (AFY)	0.0	185.5	209.1	180.7	236.4	501.7	631.8	655.3	288.3	303.8	418.1
Groundwater Savings [1] (AFY)	115.1	484.4	460.8	489.2	433.5	262.4	236.9	632.1	1250.3	1,119.7	1,308.9

Notes: (1) Groundwater savings is the difference between PEC Actual Use and EISIP Reductions

The following graph presents the above tabular data showing graphically the historic annual water reduction realized by those project's funded by PEC's one-time mitigation payment to the Westlands Water District's EISIP program (blue line), PEC's actual ground annual ground water use (green line), and the maximum groundwater use evaluated by CEC staff in the California Energy Commissions Final Commission Decision (06-AFC-5) (grey line). CEC staff's reasonably conservative analysis assumes operation of PEC at the permitted limit of 5,000 hours per year which has never been realized. As can be seen, PEC's actual water use is well below the maximum ground water use levels evaluated by CEC staff. In addition, the ground water reductions realized by the EISIP funded irrigation improvement projects exceed actual ground water usage by PEC resulting in District wide water savings (light blue line).



The following graph presents the cumulative ground water reductions realized by the EISIP funded irrigation projects, the cumulative maximum allowable ground water use and PEC's actual cumulative ground water use. As with the above graph, it is easy to see that the actual amount of ground water used by PEC is less than that evaluated by CEC staff and less than the water reductions achieved by the funded EISIP irrigation projects.



It is important to note that the EWS previously approved by the CEC (06-AFC-5C) has operated since approximately July 2016 and has significantly reduced ground water withdrawal through the recovery and reuse of water that was otherwise destined for disposal of by deep well injection. PEC's future groundwater reliance profile is significantly reduced with the EWS and groundwater savings within the Westlands Water District resulting from the EISIP funded irrigation improvement projects will clearly continue to grow.

- *TLSN-2:* This condition requires the project owner to ensure that every reasonable effort is made to identify and correct, on a case-specific basis, any complaints of interference with radio or television signals from operation of the project related lines and switchyards.

  Verification: No complaints were received during the reporting period of any interference with radio or television signals.

- *TLSN-4:* TLSN-4 requires that the transmission line right-of-way be kept free of combustible materials and that during the first five years of operation the project owner shall provide summary inspection results and any fire prevention activities

carried out along the right-of-way.

Verification: The facility performs a monthly fire inspections which includes portions of the right-of-way adjacent to the plant property. As five years have elapsed since construction of the power plant, the summary inspection results and fire prevention activities performed along the right of way are not included with this report. However, these documents are on file and available for review by staff.

- *VIS-1:* VIS-1 requires the minimization of visual impacts to the public resulting from facility structures and buildings. Impacts are to be minimized though coloration to blend with surrounding landscapes and minimization of glare.

  Verification: The external surfaces of the facility continues to be in good condition with no modification to the original coloration scheme occurring during the reporting period or since construction. During the reporting period, various pieces of equipment were painted with SJVAPCD compliant industrial maintenance coatings to maintain appearance and prevent rust. The coatings used comply with the color scheme approved by the County of Fresno Department of Public Works and Planning in their January 8, 2016 mail regarding the paint scheme used for the newly constructed EWS (see Appendix 3I).

- *VIS-4:* This condition requires that the cooling tower is designed and operated as presented to the CEC during the licensing of the project. Written documentation shall be provided in the Annual Compliance Report.

  Verification: There have been no changes or modifications to the cooling tower since initial construction. In addition, the nature and manner of operation of the cooling tower remains unchanged and in compliance with all applicable permit conditions.

  The cooling tower air flow rates are fixed to operate within the design parameters. Operators can and do vary the number of cells operated relative to the number of Combustion Turbines (CT) running based on intercooler air temperature. During cooler conditions typically experienced during the winter, the tower can maintain required inlet air temperatures using one cell per two operating CT's. Hot summertime conditions require one cooling cell for each CT in operation. Cooling tower operation, including the number of cells operated, is recorded both electronically and in daily logs which are available for review.

  Lastly, PM10 emissions from the Cooling Tower are presented to the CEC in the quarterly Air Operations Reports along with laboratory analytical reports that are the basis for the PM10 emission estimates.

- *WASTE-5:* This condition requires a description of any changes in waste management methods during the previous reporting year from those specified in the Waste Management Plan.

Verification: There were no changes to waste management methods during the reporting year. PEC generated a number of non-hazardous, hazardous, universal and special wastes during maintenance and operation of the facility. The only federally regulated hazardous waste generated at PEC during the reporting year was a small amount of waste oil containing trace levels of benzene. This waste stream is collected in the fuel gas compressor drain tanks and contains a trace level of benzene just above federal definition for a DO18 waste but well below the amount in common gasoline. All other wastes in Table 4 are California only regulated hazardous wastes.

Table 4: WASTE-5, Hazardous Waste Shipment Summary

Hazardous Waste

July 1, 2018 through June 30, 2019

Panoche Energy Center

Waste type	Quantity (lb)	Waste Code	Planned Management Method	Actual Management Method
Used Oil	6,576	CA221	Accumulate up to 90 days in accordance with California LQG requirements in closed top, properly labeled, DOT rated steel 55 gallon drum on containment pallet in waste storage area in Water Treatment Building. Ship to approved TSDF by licensed transporter.	Same as planned management method
Waste Oil with Trace Benzene	1,188	D018, CA223	Accumulate up to 90 days in 300 gallon, double walled steel fuel gas drain tanks (three tanks). Transfer to properly labled, DOT rated closed to drum and store on containment pallet in waste storage area in Water Treatment Building until transport to licenesed, offiste TSDF. Total time onsite must not exceed 90 days. Ship to approved TSDF by licensed transporter.	Same as planned management method
Oily Debris	1,660	CA352	Accumulate up to 90 days onsite in a properly labled, DOT rated, closed 55 gallon open-top steel drum located on containment pallet in waste storage area in Water Treatment Building in accordance with California LQG requirements. Transport to licenesed TSDF for offsite disposal using licenesed, certified transport vendor(s).	Same as planned management method
Spent Oil Filters (non-recycleable)	335	CA352	Accumulate up to 90 days onsite in a properly labled, DOT rated, closed 55 gallon open-top steel drum located on containment pallet in waste storage area in Water Treatment Building in accordance with California LQG requirements. Transport to licenesed TSDF for offsite disposal using licenesed, certified transport vendor(s)	Same as planned management method
Waste Sulfuric Acid	10	CA181	Accumulate up to 90 days onsite in a properly labled, DOT rated, 15 to 30 gallon open-top polyethyelene drum located on containment pallet in waste storage area in Water Treatment Building in accordance with California LQG requirements. Transport to licenesed TSDF for offsite disposal using licenesed, certified transport vendor(s)	Same as planned management method
TOTAL	**9,770**			

California hazardous waste regulations identify seven categories of common hazardous waste that can be managed as universal wastes. The more relaxed requirements for managing universal wastes were adopted by the State to ensure that these wastes are

managed safely and are not disposed of inappropriately. PEC manages universal wastes in accordance with applicable regulations (Title 22, Div 4.5, Chapter 23). The following table summarizes universal wastes generated at PEC during the reporting year.

Table 5: WASTE-5, Universal Waste Shipment Summary

Universal & Special Wastes July 1, 2018 through June 30, 2019 Panoche Energy Center				
Waste type	**Quantity (lb)**	**Waste Code**	**Planned Management Method**	**Actual Management Method**
Batteries (Alkaline)	20	Universal	Store up to 365 days in properly labeled 2-5 gallon DOT rated plastic bucket located on containment pallet in waste storage area in Water Treatment Building. Ship to approved TSDF by licensed transporter.	Same as Planned Management Method
Batteries (Lead Acid, Wet Non-spillable)	75	Universal	Store up to 365 days in 5 gallon DOT rated plastic bucket or secured to pallet (for larger batteries) located on containment pallet in waste storage area in Water Treatment Building. Ship to approved TSDF by licensed transporter.	Same as Planned Management Method
Batteries (Lead Acid, Wet, Filled with Acid)	560	Universal	Store up to 365 days in 5 gallon DOT rated plastic bucket or secured to pallet (for larger batteries) located on containment pallet in waste storage area in Water Treatment Building. Ship to approved TSDF by licensed transporter.	Same as Planned Management Method
Batteries (Lithim Ion & Lithium Metal)	9	Universal	Store up to 365 days in properly labeled 2-5 gallon DOT rated plastic bucket located on containment pallet in waste storage area in Water Treatment Building. Ship to approved TSDF by licensed transporter.	Same as Planned Management Method
Batteris (Nickel Cadmium & Nickel Metal Hydride)	20	Universal	Store up to 365 days in properly labeled 2-5 gallon DOT rated plastic bucket located on containment pallet in waste storage area in Water Treatment Building. Ship to approved TSDF by licensed transporter.	Same as Planned Management Method
Electronic Devices	165	Universal	Store up to 365 days in properly labeled plastic lined fiberboard box or secured to pallet (for larger peices) in waste storage area in Water Treatment Building. Ship to approved TSDF by licensed transporter.	Same as Planned Management Method
Lamps (Fluorescent)	13	Universal	Store up to 365 days in properly labeled plastic lined fiberboard box in waste storage area in Water Treatment Building. Ship to approved TSDF by licensed transporter.	Same as Planned Management Method
Lamps (Fluorescent - Broken)	5	Universal	Store up to 365 days in properly labeled 5-gal plastic bucket in waste storage area in Water Treatment Building. Ship to approved TSDF by licensed transporter.	Same as Planned Management Method
Lamps (High Intensity Discharge)	15	Universal	Store up to 365 days in properly labeled plastic lined fiberboard box in waste storage area in Water Treatment Building. Ship to approved TSDF by licensed transporter.	Same as Planned Management Method
TOTAL	**882**			

The following table summarizes the generation of non-hazardous filter press cake and turbine wash water during the reporting period. Non-hazardous filter press cake is generated during the treatment of non-hazardous wastewater at the EWS. A magnesium oxide slurry is added to the wastewater in the initial phases of treatment to remove silica

and other impurities. The magnesium oxide is then removed by the system's filter press and dropped into a 25 cubic yard roll-off bin. The filter press cake is transported to the Chemical Waste Management Kettleman Hills facility under a current waste disposal profile that is updated annually.

Turbine wash water is generated periodically during maintenance cleaning of the combustion turbines. The non-hazardous turbine wash water is collected in the four turbine wash water tanks (one for each combustion turbine) and removed as needed using a licensed tanker truck. The wastewater is disposed of at the Chemical Waste Management Kettleman Hills facility under a current waste profile that is updated annually.

Table 6: WASTE-5, Non-Hazardous Industrial Waste Shipment Summary

Non-Hazardous Wastes July 1, 2018 through June 30, 2019 Panoche Energy Center				
Waste type	**Quantity (lb)**	**Waste Code**	**Planned Management Method**	**Actual Management Method**
Filter Press Cake	320,190	Non-Haz	Accumulate in roll-off bin. Transport to approved disposal facility using licensed transporter	Same as planned management method
Turbine Washwater	21,642	Non-Haz	Accumulate in turbine washwater tanks. Transport to approved disposal site using Tanker Truck operated by licensed contractor.	Same as planned management method
TOTAL	**341,832**			

4 CUMULATIVE LISTING OF POST CERTIFICATION CHANGES

During the reporting period, there were no post certification changes to the facility. The following list presents approved project modifications since initial certification:

- On September 21, 2009, PEC filed a Petition to Amend (PTA) with the California Energy Commission (CEC) requesting to modify PEC's Project to construct two unlined wastewater surface impoundments (UWSI).

- PEC submitted a separate PTA to request approval to construct an for managing wastewater disposal. The EWS PTA was approved by the CEC board on March 16, 2015.

- On May 3, 2015 PEC submitted a request to withdraw the PTA for the UWSI. That request was approved and docketed on May 4, 2015.

- Construction of the EWS commenced in August of 2015, as per the Conditions of Certification recommended in the Staff Assessment that were subsequently approved by the Board on March 16, 2015. With the exception of final site grading, the project was completed in June 2016 with full demobilization of all contractor equipment, supplies, temporary office buildings and workers by June 30, 2016. Final site grading and perimeter fence construction were completed by

mid-December 2016 with all equipment and workers fully demobilized by the end of December. On December 20, 2016, a representative with Bureau Veritas, performing in the role of Designated Construction Building Official for the CEC, performed a final site inspection and on January 10, 2017 Bureau Veritas issued a Notice of Completion for PEC's EWS construction project.

5 MISSED SUBMITTAL DEADLINES

All required agency reports and submittals during the reporting period were made within the required submittal deadlines.

6 SUBMITTALS & PERMITS ISSUED BY OTHER AGENCIES

The various filings and submittals made to other governmental agencies during the reporting period include:

a. The following quarterly CEMS Excess Emission & Monitoring Down Time Reports were submitted to the San Joaquin Air Pollution Control District (SJVAPCD) by the required submission deadlines:
   - 2nd Quarter 2018
   - 3rd Quarter 2018
   - 4th Quarter 2018
   - 1st Quarter 2019

b. The following quarterly electronic Emissions Data Reports (EDR) was uploaded to the US EPA Emissions Collection and Monitoring Plan System (ECMPS) by the required submission deadlines:
   - 2nd Quarter 2018
   - 3rd Quarter 2018
   - 4th Quarter 2018
   - 1st Quarter 2019

c. Pursuant to Condition 10 of Permit C-7220-0-1 (Facility Wide Requirements), semi-annual Report of Required Monitoring were submitted to SJVAPCD for the following compliance periods:
   - May 16, 2018 through November 15, 2018
   - November 16, 2018 through May 15, 2019

d. Pursuant to Condition 33 of Permit C-7220-0-1 (Facility Wide Requirements), the Annual Compliance Certification for the May 16, 2018 through May 15, 2019 compliance period was submitted to both the SJVAPCD and US EPA Region 9 under cover letter dated June 13, 2019.

e. Source test and relative accuracy test audit (RATA) reports were submitted to the SJVAPCD and to US EPA Region IX under cover letter dated June 27, 2019. The annually required reports were prepared by Aeros Environmental who performed the testing on CT1, CT2, CT3 and CT4 on May 9, 2019 through May 17, 2019.

f. The federal 2018 green-house gas report was submitted to US EPA through the eGGRT reporting website by the March 31 submittal deadline;

g. The California 2018 green-house gas emissions report was submitted to California EPA through the Cal-eGGRT reporting website by the April 10 submittal deadline;

h. Submitted the 2018 sulfur hexafluoride (SF6) green-house gas emissions report to the California EPA through the Cal-eGGRT online reporting tool by the June 1 submittal deadline;

i. The PEC Hazardous Material Business Plan was submitted to the California Environmental Protection Agency through the California Environmental Reporting System (CERS) on February 22, 2019 with CUPA approval was received on March 5, 2019 (please see Appendix 3D).

j. During the reporting period, quarterly Class 1 Nonhazardous Waste Injection Well Reports were submitted to US EPA Region IX pursuant to the requirements of Underground Injection Control (UIC) Permit CA-10600001:

- 2nd Quarter 2018
- 3rd Quarter 2018
- 4th Quarter 2018 (includes annual summary forms and data)
- 1st Quarter 2019

k. Pursuant to San Joaquin Valley Air Pollution Control District (District) Rule 1100, Title V Deviation/Breakdown Reports were submitted to the District for the following events during the reporting period (these deviation/breakdown reports were previously provided to the CEC with the quarterly Air Operations Reports and are hereby included by reference):

- July 25, 2018: The CT3 O_2 and CO analyzer power-supply failed while the unit was online combusting fuel resulting in invalid O_2 and CO data for Hour 13.

- July 31, 2018: The CT2 fuel flow signal was lost commencing at 19:10 until unit shutdown at 20:03 due to a failed analog input/output pack (I/O Pack). Loss of valid fuel flow data resulted in invalid NOx lb/hr, CO lb/hr, NH3 lb/hr, SOx lb/hr, PM10 lb/hr, VOC lb/hr and heat rate (mmbtu/hr) data for Hour19 and Hour 20 (the unit ran for only 4 minutes in Hour 20).

- March 4, 2019: The CT3 fuel flow signal twice, and erroneously, dropped low during Hour 0 (0:00 – 0:59 AM) causing the ammonia injection valve, which follows fuel flow, to pinch down reducing ammonia injection. The

reduced ammonia injection resulted in two NOx concentration spikes totaling four minutes, enough to force the hourly average NOx concentration to 2.7 ppmv (@15%O_2), exceeding the 2.5 ppmv (@15%O_2) NOx emission limit.

- May 9, 2019: On May 9, 2019 Aeros Environmental (Aeros) performed initial annual RATA and source testing of CT2. Exceedances of the NOx 2.5 ppmv (@15%O2) and NOx 8.03 lb/hr emission limits were observed, and the RATA did not meet Part 60 NOx acceptance criteria. Return to compliance was demonstrated with completion of successful retesting on May 16, 2019 following implementation of corrective measures.

- May 15, 2019: On May 15, 2019 Aeros performed annual RATA and source testing of CT4. The Aeros data indicated exceedance of the 8.03 lb/hr NOx emission limit following completion of the initial source test (first three runs). With SJVAPCD staff prior approval, a second and successful source test was performed the same day following implementation of corrective measures.

l. PEC currently operates four non-hazardous wastewater injection wells in compliance with Underground Injection Control (UIC) permit CA10600001 issued by US EPA Region IX on April 25, 2008. UIC injection well permits have a span of ten years and on October 20, 2017, PEC submitted an application to US EPA Region IX for a permit to operate the four existing wells for an additional ten-year period. US EPA Region IX issued a letter dated February 20, 2018 stating that the application had been deemed administratively complete. On May 18, 2018, US EPA Region IX issued a letter requesting submittal of additional information in order to complete their technical review of the application. On July 12, 2018 PEC provided a summary response and questions to EPA's to which EPA responded on September 7, 2018 providing clarification and seeking additional detail to some of their prior questions. PEC submitted a revised application on March 4, 2019 to which EPA provided a written technical review on June 21, 2019 seeking to clarify and supplement previously submitted information. PEC continues to work cooperatively with EPA to address their questions and comments.

7 PROJECT COMPLIANCE SCHEDULE DURING NEXT REPORTING YEAR

The following table presents the projected compliance reporting schedule for the coming year. Other compliance related items (i.e., required inspections and maintenance, etc.) are tracked in the facility's computer work management system.

Table 7: Project Compliance Schedule

Report or Submittal Name	Frequency	Due Date	Agency
Excess Emission & Monitor Down Time Report	Quarterly	Last day of month following end of	SJVAPCD

		quarter	
Semi-Annual Report of Required Monitoring	Semi-annually	June 15 and December 15 of each year	SJVAPCD
Annual Compliance Certification	Annually	June 15 of each year	SJVAPCD USEPA
Annual Source Test and RATA Reports	Annually	Within 60 days of completion (mid-June)	SJVAPCD US EPA Region IX
Emissions Inventory	Annually	April 1 of each year	SJVAPCD
Emissions Collection & Monitoring Plan System (ECMPS) quarterly emissions submittals	Quarterly	Last day of month following end of quarter	US EPA
Quarterly Air Operations Report	Quarterly	Last day of month following end of quarter	CEC
CEC Annual Compliance Report	Annually	Last day of July of each year	CEC
CEC 1304 Production Report	Quarterly	Last day of month following end of quarter	CEC
Greenhouse Gas Emissions Report – California	Annually	March 10 of each year	CARB (Cal-eGGRT)
SF6 Greenhouse Gas Emissions Report – California	Annually	June 1 of each year	CARB (Cal-eGGRT)
Greenhouse Gas Emissions Report – Federal	Annually	March 1 of each year	US EPA (eGGRT)
Quarterly Underground Injection Well Monitoring Report	Quarterly	Last day of month following end of quarter	US EPA, Region IX
Annual Underground Injection Well Report	Annually	Last day of month following end of calendar year	US EPA Region IX
Response to EPA Region IX request for additional information to complete their technical review of UIC Permit application	No date given by EPA	August 5, 2019	US EPA Region IX
Hazardous Materials Business Plan Certification	Annually	March 1 of each year	CalEPA (CERS)
EPA ID Verification Questionnaire	Annually	Last day of July of each year	DTSC (eVQ)

8 ADDITIONS TO ONSITE COMPLIANCE FILE

No new categories were added to the facility's compliance files. All additions to the compliance files relate to the continuing and ongoing filing of information and correspondences.

9 UNPLANNED CLOSURE CONTINGENCY PLAN EVALUATION

Minor revisions were made to the Facility Temporary Closure Contingency Plan (OP-112) on June 28, 2018 to incorporate current contact information and to reflect current operation of the EWS. The updated Facility Temporary Closure Contingency Plan is included in Appendix 9 to this report.

10 COMPLAINTS, NOTICES OF VIOLATION, OFFICIAL WARNINGS RECEIVED

Item 10 of COMPLIANCE-7 requires a listing of complaints, notices of violation, official warnings, and citations received during the year. In addition, Item 10 requires that a description of the resolution of any resolved matters, and the status of any unresolved matters be provided.

i. Complaints: The facility received no public or agency complaints of any type during the reporting period.

ii. Notices of Violation (NOV): The facility did not receive any Notices of Violation during the reporting period.

iii. Official Warnings: The facility did not receive any official warnings from any agency during the reporting period.

iv. Citations: The facility did not receive any citations from any agencies during the reporting period.

Appendix 1

Compliance Matrix

COMPLIANCE MATRIX

July 1, 2018 - June 30, 2019

Panoche Energy Center

Page Number	Condition Of Certification	Summary	Due Date	Due Date Description	Status	Submit To	Responsible Party
117	AQ-13	NOx, CO, PM10 and VOC 12-month rolling mass emissions limits	Last day of the Month following the end of the Quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC	M.Murphy B. Lajoie
118	AQ-17	CTG lube oil vents	On-going	On-going	Continuous	Site Inspection	D. Fisher B. Lajoie
118	AQ-18	Fuel gas sulfur content	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
118	AQ-19	CTG emissions limit comliance - NOx, Sox, PM10, CO, VOC	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Intermittent - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
118	AQ-20	CTG emission limit compliance - Ammonia	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
118	AQ-21	CTG emissions compliance - Startup	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
119	AQ-22	CTG emissions compliance - Shutdown	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
119	AQ-23	CTG startup and shutdown definition	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
119	AQ-24	CTG startup and shutdown duration	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
119	AQ-25	CTG startup and shutdown emissions controls	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
120	AQ-26	CTG daily emissions limits - NOx, VOC, CO, PM10 and Sox	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
120	AQ-27	CTG quarterly hours of operation limits	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
120	AQ-28	CTG annual emission limits - N0x, S0x, PM10, CO & VOC	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie

COMPLIANCE MATRIX

July 1, 2018 - June 30, 2019

Panoche Energy Center

Page Number	Condition Of Certification	Summary	Due Date	Due Date Description	Status	Submit To	Responsible Party
120	AQ-29	CEMS data averaging periods	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
120	AQ-30	Daily, monthly and annual emissions averaging requirements	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
120	AQ-31	Ammonia slip monitoring procedure modification	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	As necessary - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
131	AQ-32	Requirement to perform annual startup and shutdown source tests	Test one CT every 7 years	60 days from date of completion	Continuous - Source Test Report Submittals	CEC & SJVAPCD	M.Murphy B. Lajoie
121	AQ-33	HAP annual emission limits	30 days from end of 4th quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
122	AQ-34	Source Test performance & submittal - HAP	60 days from completion of source test	60 days from completion of source test, submit Source Test report with new HAP factors.	Continuous - Annual Source Test Report submittal	CEC & SJVAPCD	M.Murphy B. Lajoie
122	AQ-35	Source Test performance & submittal - NOx, CO, VOC and Ammonia	60 days from completion of source test	60 days from completion of source test, submit Source Test report with new HAP factors.	Continuous - Annual Source Test Report submittal	CEC & SJVAPCD	M.Murphy B. Lajoie
122	AQ-36	Fuel sulfur content documentation	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
122	AQ-37	Source Test notication requirements	30 days prior to compliance Source Test	30 days prior to performing Source Test, submit Source Test Plan	Continuous - Annual Source Test notification	CEC & SJVAPCD	M.Murphy B. Lajoie
122	AQ-37	Source Test Plan submittal requirements	15 days prior to compliance Source Test	15 days prior to performing Source Test, submit Source Test Plan	Continuous - Annual Source Test notification	CEC & SJVAPCD	M.Murphy B. Lajoie
123	AQ-38	Fuel HHV & LHV monitoring requirements	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
123	AQ-39	Fuel Sulfur Content	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie

COMPLIANCE MATRIX

July 1, 2018 - June 30, 2019

Panoche Energy Center

Page Number	Condition Of Certification	Summary	Due Date	Due Date Description	Status	Submit To	Responsible Party
124	AQ-41	Source Test shall be District witnessed or authorized and samples shall be collected by certified laboratory	30 days prior to compliance Source Test	30 days prior to performing Source Test, submit Source Test Plan	Continuous - Annual Source Test Plan submittal	CEC & SJVAPCD	M.Murphy B. Lajoie
123	AQ-42	CEMS installation and operation inspection	On-going	On-going	Continuous - on going	CEC, SJVAPCD, CARB	M.Murphy B. Lajoie
124	AQ-43	CEMS installation, operation and maintenance	On-going	On-going	Continuous - on going	CEC, SJVAPCD, CARB	M.Murphy B. Lajoie
124	AQ-44	CEMS Audits - cycle time	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
124	AQ-45	CEMS Audits - 40CFR60 Appendix F and B requirements	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
124	AQ-46	CEMS Audits - CGA	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
125	AQ-47	CEMS audits - RATA	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Intermittent - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
125	AQ-48	Emission date averaging - NOx, CO	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
125	AQ-49	Excess emission & monitor downtime definition	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
125	AQ-50	Emission data reduction methodology - 40CFR60, Part 51	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
126	AQ-52	CEMS system data polling failure	Upon notice by the District of failue	On-going	Continuous - on going	SJVAPCD	M.Murphy B. Lajoie
126	AQ-53	CEMS written summary data	Upon notice by the District of failue	On-going	Continuous - on going	SJVAPCD	M.Murphy B. Lajoie
126	AQ-54	CEMS audit submission	30 days from end of quarter	30 days from end of quarter	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
126	AQ-55	CEMS Inspection	Upon District request	Upon District request, allow insection of monitoring equipment.	Continuous per occurance	SJVAPCD	M.Murphy B. Lajoie

COMPLIANCE MATRIX

July 1, 2018 - June 30, 2019

Panoche Energy Center

Page Number	Condition Of Certification	Summary	Due Date	Due Date Description	Status	Submit To	Responsible Party
127	AQ-56	Breakdown reporting - Initial	Within 1 hour of discovery of breakdown	Within 1 hour of occurance provide notificaiton to District of breakdown event	Continuous per occurance and with Quarterly Operations Report submittal	CEC & SJVAPCD	M.Murphy B. Lajoie
127	AQ-57	Breakdown reporting - Written follow-up report	Within 10 days of discovery of breakdown	Within 10 days of occurance provide notificaiton to District of breakdown event	Continuous - per occurance and Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
128	AQ-65	Diesel Fuel Sulfur content requirement	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement and annual SJVAPCD inspection	CEC	M.Murphy B. Lajoie
129	AQ-67	IC engine manufacturer guaranteed emissions documentation	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement and annual SJVAPCD inspection	CEC	M.Murphy B. Lajoie
129	AQ-68	IC engine emissions limit - PM10	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement and annual SJVAPCD inspection	CEC	M.Murphy B. Lajoie
129	AQ-69	IC engine operation limitations	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement and annual SJVAPCD inspection	CEC & SJVAPCD	M.Murphy B. Lajoie
129	AQ-70	IC engine operations records	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement and annual SJVAPCD inspection	CEC & SJVAPCD	M.Murphy B. Lajoie
130	AQ-72	Cooling Tower chemical restrictions - no hexavalent chromium compunds	Prior to use	Prior to use of new cooling tower chemicals, obtain CPM approval	Continuous	CEC	M.Murphy B. Lajoie
130	AQ-74	Cooling Tower emission limit compliance	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement and annual SJVAPCD inspection	CEC & SJVAPCD	M.Murphy B. Lajoie
130	AQ-75	Cooling Tower emissions limit compliance - data submission	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement and annual SJVAPCD inspection	CEC & SJVAPCD	M.Murphy B. Lajoie
131	AQ-76	Cooling Tower emissions limit compliance - water sample analysis	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement and annual SJVAPCD inspection	CEC & SJVAPCD	M.Murphy B. Lajoie
131	AQ-77	Cooling Tower PM emissions data retention and calculation	Upon inspection request	Cootling Tower and supportind data shall be made available for inspection	Continuous - Quarterly Operating Report requirement and annual SJVAPCD inspection	CEC, SJVAPCD & CARB	M.Murphy B. Lajoie

COMPLIANCE MATRIX

July 1, 2018 - June 30, 2019

Panoche Energy Center

Page Number	Condition Of Certification	Summary	Due Date	Due Date Description	Status	Submit To	Responsible Party
132	AQ-83	Acid Rain Program - SO2 allotment acquisition	30 days from end of 1st quarter	Annually in the first QOR that is due after the annual SO2 allotment due date	Continuous - submitted with 1st Quarter Operations Report	CEC	M. Murphy
132	AQ-84	Equipment maintenance record submission	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement and annual SJVAPCD inspection	CEC & SJVAPCD	M.Murphy B. Lajoie
132	AQ-85	Public nuisance complaints	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC, SJVAPCD & CARB	M.Murphy B. Lajoie
133	AQ-86	Opacity limits and violations	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement and annual SJVAPCD inspection	CEC, SJVAPCD & CARB	M.Murphy B. Lajoie
133	AQ-87	PM emission limit	60 days from completion of source test	60 days from completion of source test, submit Source Test report documenting compliance with PM emission limit	Continuous - Source test submission	CEC & SJVAPCD	M.Murphy B. Lajoie
133	AQ-88	Record retention	On-going	On-going - maintain all records for at least 5 years	On-going	CEC, SJVAPCD & CARB	M.Murphy B. Lajoie
133	AQ-91	Fugitive dust - comliance with District Rule 8041 (track-out)	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement and annual SJVAPCD inspection	CEC & SJVAPCD	M.Murphy B. Lajoie
134	AQ-92	Fugitive dust - comliance with District Rule 8051 (open areas)	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement and annual SJVAPCD inspection	CEC & SJVAPCD	M.Murphy B. Lajoie
134	AQ-93	Fugitive dust - comliance with District Rule 8061 (open areas)	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement and annual SJVAPCD inspection	CEC & SJVAPCD	M.Murphy B. Lajoie
134	AQ-94	Fugitive dust - comliance with District Rule 8011 & 8071 (unpaved vehciel & equipment traffic areas)	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement and annual SJVAPCD inspection	CEC & SJVAPCD	M.Murphy B. Lajoie
134	AQ-95	Fugitive dust - comliance with District Rule 8011 & 8071 (unpaved vehciel & equipment traffic areas)	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement and annual SJVAPCD inspection	CEC & SJVAPCD	M.Murphy B. Lajoie
134	AQ-96	Fugitive dust - comliance with District Rule 8011 & 8071 (unpaved vehciel & equipment traffic areas)	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement and annual SJVAPCD inspection	CEC & SJVAPCD	M.Murphy B. Lajoie

COMPLIANCE MATRIX

July 1, 2018 - June 30, 2019

Panoche Energy Center

Page Number	Condition Of Certification	Summary	Due Date	Due Date Description	Status	Submit To	Responsible Party
135	AQ-97	Fugitive dust - comliance with District Rule 8011 & 8071 (unpaved vehciel & equipment traffic areas)	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement and annual SJVAPCD inspection	CEC & SJVAPCD	M.Murphy B. Lajoie
135	AQ-98	Fugitive dust - record retention	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement and annual SJVAPCD inspection	CEC & SJVAPCD	M.Murphy B. Lajoie
107	AQ-SC1	AQCMM to be designated to verify compliance with AQ-SC3, AQ-SC4, AQ-SC5	60 days prior to start of ground disturbance	Submit name and resume of proposed Air Quality Construction Mitigation Monitor (AQCMM)	Continuous - Previously approved AQCMM and delegates in place.	CEC	M. Murphy R. Shropshire
107	AQ-SC2	Air Quality Construction Mitigation Plan (AQCMP)	60 days prior to start of ground disturbance	Submit AQCMP to CPM 60 days prior to ground disturbance	Continuous - previously approved plan in place	CEC	M. Murphy R. Shropshire
107	AQ-SC3	Construction fugitive dust control	Monthly during construction	Submit Monthly Compliance Report documenting compliance with required mitigation measures	Continuous when triggered by ground disturbance. No construction activities during reporting period. Operational phase controls in place as per approved plan.	AQCMP	M.Murphy B. Lajoie
109	AQ-SC4	Dust Plume Response Requirement	Monthly during construction	Submit Monthly Compliance Report documenting compliance with required mitigation measures	Continuous when triggered by ground disturbance. No ground disturbing activities during reporting period.	AQCMP	M.Murphy B. Lajoie
109	AQ-SC5	Diesel -Fueled Engine Control	Monthly during construction	Submit Monthly Compliance Report documenting compliance with required mitigation measures	Continuous when triggered by ground disturbance. No ground disturbing activities during reporting period.	AQCMP	M.Murphy B. Lajoie
111	AQ-SC6	Air permit modification	Within 5 days	Submit any proposed air permit changes to the CPM within 5 working days of its submitttal	Continuous as necessary - no permit modifications proposed or submitted	CEC & SJVAPCD	M.Murphy B. Lajoie
111	AQ-SC7	Fuel gas sulfur content documentation	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement and annual SJVAPCD inspection	CEC & SJVAPCD	M.Murphy B. Lajoie
112	AQ-SC8	Required green house gas (GHG) reporting and participation in registry	EPA: March 31 Cal-EPA: April 10 of each year	PEC reports annual GHG emissions to both the EPA through eGGRT and California EPA through Cal-eGGRT	Continuous. Facility annually reports GHG to EPA and Cal-EPA through eGGRT and Cal-eGGRT online reporting tools.	CEC, US EPA and California EPA	M.Murphy B. Lajoie

COMPLIANCE MATRIX

July 1, 2018 - June 30, 2019

Panoche Energy Center

Page Number	Condition Of Certification	Summary	Due Date	Due Date Description	Status	Submit To	Responsible Party
113	AQ-SC-9	Quarterly Operation Report	30 days from end of quarter	30 days from end of quarter submit documentation in Quarterly Operating Report	Continuous - Quarterly Operating Report requirement	CEC & SJVAPCD	M.Murphy B. Lajoie
170	BIO-1	Designated biologist assignment	90 days prior to start of construction	90 days prior to start of construction, submit proposed designated biologist credentials	Continuous - No change in prevoiusly approved Designated Biologist	CEC	M.Murphy B. Lajoie
170	BIO-2	Designated biologist reporting	30 days from end of 2nd quarter	30 days from end of 2nd quarter, submit Designated Biologist report with Annual Compliance Report	Continuous - Annual Compliance Report Requirement	CEC	M.Murphy B. Lajoie
172	BIO-3	Biological Monitor qualifications	30 days prior to start of construction	30 days prior to start of construction, submit qualificaitons of proposed Biological Monitors	Continuous as necessary. No change in previously approved Biological Monitors.	CEC	M. Murphy R. Shropshore
172	BIO-4	Biological impact notification	Immediately	Immediately notify CPM of any biological impact during construction or operaiton	Continuous - No biological events during reporting period. Summarize in Annual Compliance Report	CEC	M. Murphy Designated Biologist
170	BIO-1	90 days prior to construction site mobilization, submit to the CPM Designated Biologist qualifications	90 days prior to site mobilization for construction	90 days prior to construction site mobilization, submit to the CPM Designated Biologist qualifications	Continuous - No change in previously approved Designated Biologist	CEC	M. Murphy R. Shropshire
172	BIO-3	Project owner shall submit to the CPM, the resume and references of individuals proposed to be Biological Monitors	30 days prior to site mobilization for construction	30 days prior to construction site mobilization, submit to the CPM Biological Monitor qualifications	Continuous as necessary. Biological Monitor and proposed delegates qualtifications submitted to CEC prior to EWS Construction project.	CEC	M. Murphy R. Shropshire
173	BIO-5	WEAP training	Annual Training	Annual Training	Continuous - WEAP training performed annually and upon new hire.	CEC	M.Murphy B. Lajoie
174	BIO-6	BRMIMP submittal	60 Days prior to any site mobilization	Provide BRMIMP to CPM at least 60 days prior to any site mobilization	Continuous - No change in previoulsy approved BRMIMP. No construction activities during reporting period.	CEC	M. Murphy Designated Biologist
176	BIO-7	Closure Plan Measures	22-Dec-27	12 months prior to closure	Continuous - Included in BRMIMP.	CEC	M.Murphy B. Lajoie
31	COMPLIANCE-1	Unrestricted access	On going	On going	Continuous - on going	CEC	M.Murphy B. Lajoie
31	COMPLIANCE-2	Record retention	On going	On going	Continuous - on going	CEC	M. Wolske B. Lajoie
31	COMPLIANCE-3	Compliance verification submittals	On going	On going	Continuous - Annual Compliance Report requirement	CEC	M.Murphy B. Lajoie

COMPLIANCE MATRIX

July 1, 2018 - June 30, 2019

Panoche Energy Center

Page Number	Condition Of Certification	Summary	Due Date	Due Date Description	Status	Submit To	Responsible Party
33	COMPLIANCE-5	Compliance Matrix	30 days from end of 2nd quarter	30 days from end of 2nd quarter, submit with Annual Compliance Report	Continuous - Annual Compliance Report requirement	CEC	M.Murphy B. Lajoie
35	COMPLIANCE-7	Annual Compliance Report content & submittal	30 days from end of 2nd quarter	30 days from end of 2nd quarter, submit Annual Compliance Report	ACR due date determined to be July 1 of each year by CPM	CEC	M.Murphy B. Lajoie
36	COMPLIANCE-9	Submit to CEC Accounting Office	Annually on July1	Adjusted Annual Fee	Continuous - Annual Fee submittal	CEC	M.Murphy B. Lajoie
50	GEN-1	Code Compliance	30 days prior	30 days prior to any construction, addition, alteration, moving demolition or repair	Continuous - upon occurrence	CBO	M.Murphy B. Lajoie
148	HAZ-1	Hazardous materials management & storage	30 days from end of 2nd quarter	30 days from end of 2nd quarter, submit with Annual Compliance Report	Continuous - Annual Compliance Report requirement	CEC	M.Murphy B. Lajoie
236	LAND-1	Porject owner shall submit to the CPM written documentation including evidence of review by Fresno County that the project conforms to standards in Sections 816.5 and 843 of the Fresno Coutny Ordiance Code.	At least 60 Days prior to any site mobilization for construction.	60 Days prior to any site mobilization for construction, project owner shall submit to the CMP written documentation including evidence of review by Fresno County that the project conforms to standards in Sections 816.5 and 843 of the Fresno Coutny Ordiance Code.	Continuous - upon occurrence. No project modifications or construction during reporting period.	CEC	M. Murphy Robin Shropshire
251	NOISE-2	Noise complaint documentation and reporting	Within 5 days	Within 5 dyas of receiving complaint, file Noise Complaint Resolution Form with local jurisdiction and CPM.	Continuous - upon occurrence	CEC	M.Murphy B. Lajoie
264	SOCIO-1	Project owner shall provide the CPM with proof of paymant of the statutory school development fee to the Mendota Unified School District.	At least 30 days prior to start of project construction	At least 30 days prior to the start of project construction, the project owner shall provide the CPM with proof of payment of the statutory development fee.	Continuous - upon occurrence. All prior school development fee obligations met.	CEC	M. Murphy R. Shropshire
186	SOIL&WATER-2	Drainage, erosion and sedimentation monitoring & maintenance	30 days from end of 2nd quarter	30 days from end of 2nd quarter, submit with Annual Compliance Report	Continuous - Annual Compliance Report requirement	CEC	M.Murphy B. Lajoie
188	SOIL&WATER-6	Annual UIC Class I Monitoring Report	30 days from end of 2nd quarter	30 days from end of 2nd quarter, submit Annual Compliance Report	Continuous - Annual Compliance Report requirement	CEC	M.Murphy B. Lajoie

COMPLIANCE MATRIX

July 1, 2018 - June 30, 2019

Panoche Energy Center

Page Number	Condition Of Certification	Summary	Due Date	Due Date Description	Status	Submit To	Responsible Party
189	SOIL&WATER-7	The project owner shall submit all copies of permit changes and associated required monitoring required by Fresno County to the CPM	Within 10 days of submittal	Submit all copies of permit changes, including required monitoring, to the CPM wihtin 10 days of their submittal to the County of Fresno.. Also provide	Continuous - upon occurrence. No permit changes or modifications requested or required.	CEC	M.Murphy B. Lajoie
189	SOIL&WATER-7	The project owner shall submit any notice of violation from the Coutny of Fresno to the CPM	Within 10 days of receipt	Submit any notice of violation from the Coutny of Fresno to the CPM within 10 days of receipt.	Continuous - upon occurrence. No NOVs received during reporting period.	CEC	M.Murphy B. Lajoie
189	SOIL&WATER-8	Annual water use summary	30 days from end of 2nd quarter	30 days from end of 2nd quarter, submit Annual Compliance Report	Continuous - Annual Compliance Report requirement	CEC	M.Murphy B. Lajoie
190	SOIL&WATER-9	Expanded Irrigation System Improvement Program (EISIP)	30 days from end of 2nd quarter	30 days from end of 2nd quarter, submit Annual Compliance Report	Continuous - Annual Compliance Report requirement	CEC	M.Murphy B. Lajoie
92	TLSN-2	Radio and television signal nuisance complaints	30 days from end of 2nd quarter	30 days from end of 2nd quarter, submit any nuisance complaints with Annual Compliance Report	Continuous - Annual Compliance Report requirement	CEC	M.Murphy B. Lajoie
93	TLSN-4	Transmission line right-of-way maintained free of combustible material.	30 days from end of 2nd quarter	30 days from end of 2nd quarter, submit Annual Compliance Report	Continuous - Annual Compliance Report requirement	CEC	M.Murphy B. Lajoie
282	VIS-1	Building and equipment surface condtions	90 days prior to specifying vendor colors and finishes for structures	Submit proposed treatment plan to CPM and Fresno County Public Works and Planning Dept.	Continuous - Upon occurance and Annual Compliance Report requirement	CEC	M.Murphy B. Lajoie
284	VIS-2	Notify CPM that construction phase lighting is ready for inspection.	7 days after fist use of construction lighting	7 days after fist use of construction lighting, notify CPM that construction phase lighting is ready for inspection.	Continuous - upon occurrence.	CEC	M. Murphy R. Shropshire
284	VIS-2	Nofify CPM of complaints received related to construction phase lighting. Provide details of complaint resolution or proposal to resolve compliant.	Within 10 days of receipt of complaint	Within 10 days of receipt of complaint, nofify CPM of complaints received related to construction phase lighting. Provide details of complaint resolution or proposal to resolve compliant.	Continuous - upon occurrence. No complaints received during compliance period. No construction work performe during reporting period.	CEC	M.Murphy B. Lajoie

COMPLIANCE MATRIX

July 1, 2018 - June 30, 2019

Panoche Energy Center

Page Number	Condition Of Certification	Summary	Due Date	Due Date Description	Status	Submit To	Responsible Party
284	VIS-3	Contact CPM to determine required documentation for permenant exterior lighting mitigation plan.	At least 90 days prior to ordering any permenant exterior lighting.	At least 90 days prior to ordering any permenant exterior lighting, contact CPM to determine required documentation for permenant exterior lighting mitigation plan.	Continuous - upon occurrence.	CEC	M. Murphy R. Shropshire
286	VIS-4	Cooling Tower design and operation	30 days from end of 2nd quarter	30 days from end of 2nd quarter, submit Annual Compliance Report	Continuous - Annual Compliance Report requirement. No modication to Cooling Tower.	CEC	M.Murphy B. Lajoie
229	WASTE-1	Project owner shall submit to the CPM for reveiw the resume of a Registered Professional Engineer or Geologist.	At least 30 Days prior to any site mobilization for construction.	At least 30 Days prior to any site mobilization for construction, project owner shall submit to the CPM for reveiw the resume of a Registered Professional Engineer or Geologist.	Continuous - upon occurrence. No construction or site grading during reporting period.	CEC	M. Murphy R. Shropshire
230	WASTE-4	Waste management related enforcement action	Within 10 days of occurrence	Within 10 days of occurrence, notify CPM of any impending enforcement actions	Continuous - upon occurrence. No waste management related enforcement action during reporting period.	CEC	M.Murphy B. Lajoie
230	WASTE-5	Operation Waste Management Plan Method Comparison	30 days from end of 2nd quarter	30 days from end of 2nd quarter, submit Annual Compliance Report documenting actual waste management methods	Continuous - Annual Compliance Report requirement	CEC	M.Murphy B. Lajoie

Appendix 3

Documents Required by
Specific Conditions of Compliance

Appendix 3A

(BIO-1, BIO-2, BIO-3 and BIO-4)

NOREAS Inc.

Memorandum

To: Barry Lajoie, Panoche Energy Center (PEC) EHS Manager
From: Lincoln Hulse, NOREAS, Inc. (NOREAS)
Date: 7/12/19
Re: Panoche Energy Center (PEC) - 2019 Biological Resources Annual Compliance Memorandum

---

This memorandum (memo) is being submitted to document biological compliance during operation of the Panoche Energy Center (PEC during the period of July 01, 2018 through July 01, 2019, and to comply with the conditions set forth by California Energy Commission (CEC) and the United States Fish and Wildlife Service (USFWS). Specifically, this memo complies with the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) BIO- 2 which states, "***During operation, the designated biologist shall submit record summaries in an annual compliance report".*** A description of the PEC and its conditions of approval are contained within the following documents:

- California Energy Commission Conditions of Certification (06-AFC-05);
- California Energy Commission (CEC) Panoche Energy Center (06-AFC-5C) Staff Analysis of Amendment Proposal to Install Wastewater Storage Tanks; and
- Panoche Energy Center, LLC. 2007, United States Fish and Wildlife Service (USFWS) Biological Opinion (1-1-07-F-0255).

Mitigation Measures Implemented July 01, 2018 through July 01, 2019 Include:

BRMIMP BIO 5: **Worker Environmental Awareness (WEAP) training.** WEAP training is still being performed annually, and as new employees are hired. A complete list of all employees trained (including the date and trainer) is available upon request at PEC.

July 01, 2018 through July 01, 2019 Adaptive Management

The following measures to avoid and minimize impacts to birds and wildlife were implemented:

- The alternative nest/shelter boxes were maintained around the cooling towers to continue to encourage non-listed passerines and raptors to nest, perch, and/or roost in locales other than the PEC cooling towers;

- Water risers continue to be utilized, in addition to a five minute delay prior to starting the fans to safeguard that any wildlife potentially located within the towers are displaced prior to fan operation; and
- Several sirens continue to be used as well, to further deter any wildlife potentially located within the towers from staying there prior to fan operation.

The above actions remain in place, are ongoing and fulfill the letter and intent of Section 7.3 of the BRMIMP.

No biological compliance issues were identified during project operation between July 01, 2018 and July 01, 2019.

If you have any follow-up questions or concerns, please contact Lincoln Hulse at 949-302-8910.

Sincerely,
NOREAS, Inc.

Lincoln Hulse
PEC Designated Biologist

David Allen Fisher

2277 Villa CT Los Banos, CA, 93635
Phone: (951)233 3867 Email: david.fisher@ethosenergygroup.com

Oct 4, 2014

Re: Letter of Interest

Dear Sir/Madame:

I am extremely interested in the subject position and have enclosed my resume for your consideration. As you will see, I have over 20 years of industry experience with a proven track record of achieving maximum operational reliability and availability. I have been working for Wood Group for 5 years at the Panoche Energy Center and have enjoyed being involved with the improvements of the LMS100 technology. In addition to managing the facility, I have also been a Lead Operation and Maintenance Operator with proven leadership with my pears. Prior to this position, I have over 20 successful years with 4 other power plants including the military. I have excelled at every position that I have attained by hard work and dedication. I achieved outstanding results for 4 years in the U.S. Navy, supervising 6 technicians responsible for power generation systems on the USS Antietam. I have a background in technical, planning, organization, communication, and resource allocation and performance management. I played an important role in a successfully increasing plant efficiency, optimized productivity, and reduced costs. Having supervised the operation and maintenance team in several other power plants since 1996, I am confident that I can make a positive impact in management relative to this position and integration of future projects. My outstanding qualifications and personal attributes include the following:

Qualifications:

- Technical proficiency
- Continuous process improvement and policy formulation
- Resource/engineering analysis and problem resolution
- Risk management of power plant operations
- Competitive pricing methods and statistical/financial analysis
- Environmental and regulatory compliance
- Leadership, team building, and employee development
- Computer skills and records management

Personal Attributes:

- Concern for safety and care of equipment
- Willingness to accept additional responsibility
- Professional judgment and sound decision-making
- Excellent interpersonal and communication skills
- Dependable, flexible, analytical, and enthusiastic
- Initiative, resourcefulness, positive attitude, and strong work ethic
- Detail orientation and time management
- Ability to earn respect, inspire confidence, and meet goals and deadlines

In summary, I have been an extremely valuable contributor to Panoche Energy Center and former employers for over 20 years. I really enjoy the power industry and want to continue to grow and advance my career in power generation management. I welcome responsibility, thrive on challenge, and am dedicated to company goals and personal achievement. I look forward to this opportunity. Thank you for your consideration.

Respectfully,

David A Fisher

David A. Fisher

David A Fisher

2277 Villa CT Los Banos, CA, 93635
Phone: (951) 233 3867 Email: david.fisher@ethosenergygroup.com

PROFESSIONAL EXPERIENCE

NAES Power Plant Service 2015-Current
Panoche Energy Center, Firebaugh, CA

Plant Manager

Responsible for all aspects of the Power Plant.

Wood Group/Ethos Power Plant Services 2012-2014
Panoche Energy Center, Firebaugh, CA

Operation & Maintenance Manager – Panoche Energy Center
Lead an administrative and technical staff to maintain plant Safety, Environmental, reliability and efficiency of a State-of-the Art 400 MW ((4) GE LMS100) gas turbine) power plant. Activities include directing a team to maintain the facility in all Balance of plant (BOP) and (4) General Electric (GE) LMS100 generating packages with SCR's. Have successfully trained, coached and directed plant personal to respond/repair and maintain plant equipment. Developed, implemented and corrected specific operating procedures, implemented all Wood Group policies, standards, and procedures and trained Wood Group staff in successfully achieving greater than 98% availability with greater than 17,000 fired hours of combined runtime and a startup reliability of greater than 99% reliability with greater than 3,806 successful starts out of 3814 attempted starts combined. In every commercial year since commissioning this facility, exceeded all O&M Contract, Owner and Power Purchase Agreement measures. Has a good relationship with GE product engineers, customer service managers and GE field technical personnel. Works to maintain a cooperative relationship with all levels of GE personnel. Works with GE engineering in resolving engineering design problems on the CT package equipment, combustion turbines, and software in the power plant. Works cooperatively with all Wood Group Businesses promoting work within the organization.

Other involved activities:

- Participated monthly technical conference calls for all LMS100 plants to participate in. (Goal is to share information and to assist each other with problems)
- A resource for other LMS100 facilities to call for technical assistance

Lead Operations and Maintenance Tech 2009-2012
Panoche Energy Center, Firebaugh, CA

- Part of Commissioning team that Developed plant specific Operating procedures, Maintenance procedures, System descriptions, walked plant drawings down and compared accuracy with P&IDs.
- Created the plant operator rounds, water rounds and safety procedures.
- Insured the safe and efficient operation of the plant
- Insured Safety and regulatory requirement are maintained at all times
- Troubleshoot and repair plant mechanical equipment, Instrumentation, Controls
- Create Programming for BOP control system on newly installed equipment and modification to existing logic.
- Responded to plant during outage situations to insure plant meets availability goals.
- Go to guy when trouble shooting **systems**

Lead Production Leader (2004-2009)
Florida Power and Light, Blythe, CA

- Responsible for the safe and efficient operation of a two on one combined cycle power plant 510 MW, Siemens Westinghouse VT-84A gas turbines 180 MW each and KN 180 MW steam turbine
- Supervised 6 shift technicians on all aspects of plant maintenance, operations, environmental, etc.
- Insured all maintenance was scheduled and completed on time
- Managed Maintenance Management System.
- Trained as back up environmental personal, reviewing CEMS data, generating and submitting reports to corporate.
- Start and Stop Plant daily
- Insure Control room operator maintain plant emission with strict plant permitting.
- Insures plant personnel adhere to all Safety and LOTO procedures, Interpret procedure when conflicts, questions or concerns from plant personnel.
- Conduct Calibration, Assisted with repairs and alterations of various electrical and electronic equipment.
- Schedule outside contractors for outage, emergency call outs etc.
- Insure plant personnel adhere to Company Safe Work practice programs
- Preventive Maintenance on all plant equipment, Parts procurement,
- Part of Facility safety committee
- Insure water chemistry is maintained within strict control limits.
- Schedule overtime for plant projects, maintenance, vacation. Etc.

Shift Supervisor (1999-2004)
Anderson Lithograph Cogen, City of Commerce, CA

- Responsible for the safe and efficient operation or our water injected Allison 501 KB5 axial flow Gas Turbine, Steam Turbine, Absorption Chillers and build controls.
- Conduct Calibration, Assisted I&E Tech with repairs and alterations of various electrical and electronic equipment.
- Developed a maintenance plan for the plant
- Created a LOTO program for the plant
- Rotating maintenance shift
- Chairman of Facility safety committee
- Perform water chemistry test and maintain water chemistry within allowable limits.
- Write and update plant casualty control procedures and Start up and shutdown procedures.
- Train new operators in plant operations.

SHIFT SUPERVISOR (1996 TO 1999)
FPB Cogen INC/ S&S/GE plant Operations/Granite

- Responsible for the unsupervised starting, stopping and operation of a 28 MW GT fired combined cycle cogeneration plant.
- Unsupervised stopping and starting of Gas turbine, steam turbine and all auxiliary equipment.
- Start and operated Paper mills Water tube boilers during Cogen outages and emergencies.
- Perform preventive maintenance and repairs.
- Conducted calibration, Assisted I&E Tech with repairs and alterations of various electrical and electronic equipment.
- Performed all water chemistry tests and maintain water chemistry within specified limits.
- Safety coordinator and help maintain MSDS for all chemicals.
-

U.S. Navy, USS Antietam (CG54) (4 years) 1991-1994
Gas Turbine Electrical Technician

- Operated engine control systems, electrical generators and electrical control equipment
- Performed maintenance and tag out procedures.
- Supervised gage calibration shop
- Planned Maintenance for GSE shop.
- Maintained electrical equipment such as motors, batteries and bus transfer equipment.

- Tested alarm and indicating systems and located and repair faults.
- Calibration of gauges, switches and transmitters.

EDUCATION

- Completed the following U.S. Navy schools and training programs: Basic Electricity and Electronics, Gas Turbine Class A, Gas Turbine Class A Electrical.
- U.S. Navy Qualified Gas Turbine Systems Technician, Propulsion Plant Operator, Electrical Plant Operator, Engine room Operator, Switchboard Operator, Propulsion and Auxiliary Control Console Operator.
- Two-week General Electric MK-IV Control System Maintenance School.
- Two-week General Electric MK-VIe Control System Maintenance School.
- Allison 501 Gas Turbine Overhaul School.
- Leadership and Management Training.
- Microsoft Access, Excel, Word, PowerPoint.

LICENSES

- California Driver's License

1864 E. Niles Ave
Fresno, CA 93720
559-281-5731

JESSE J. GUNNELLS

Summary

Twenty-five (25) years industry experience, including management of Profit and Loss (P&L) Center, direct employee management, and daily interaction with clients. Extensive experience with gas and steam turbines, gas/oil fired boilers, and HRSGs; including mechanical, operational, and instrumentation and controls. Project management experience on installation and maintenance projects. Qualified Field Engineer on Speedtronic Mark V, Mark VI and Mark VIe turbine control panel. Familiar with Ovation and Delta V DCS systems.

Experience

5/15 to Present | NAES | Firebaugh, CA

Operations and Maintenance Manager

- Overall responsibility for all aspects of Operations and Maintenance of Plant

1/13 to 5/15 | NAES/Wood Group | Firebaugh, CA

Lead Operations and Maintenance Technician

- Operate plant to meet Day-Ahead and Real-Time dispatches within load limits and permitted environmental parameters utilizing Mark VIe and Ovation Controls
- Maintain four GE LMS100 Gas Turbines and BOP equipment through established and site-developed procedures
- Coordinate multiple contractors and site personnel to safely accomplish job scope during plant outages

7/11 to 12/12 | Granite Services | Port Arthur, TX

Lead Controls Technical Advisor/Site Coordinator

- Lead Controls TA for installation of four GE Frame 6B gas turbines
- Coordinate Controls activities and staffing on site to meet deadlines and milestones
- Maintain site installation and commissioning schedule in MS Project

5/11 to 6/11 | Granite Services | Sabiya, Kuwait

Mark VIe DCS Technical Advisor

- Commissioning acceleration team responsible for Mark VIe hardware and software commissioning for BOP systems associated with six (6) GE Frame 9F simple cycle gas turbines. Made necessary changes within Cimplicity and Toolbox ST in order to complete site Engineering Modification Notices (EMN)
- Turnover Package acceptance and development of commissioning punchlist

9/10 to 4/11 | Headway Corp Resources | Brownsville, TN

Combined Cycle Operating Technician

- Responsible for the safe and reliable operation of two Mitsubishi 501F gas turbines in a 2-on-1 combined-cycle configuration with Neuter Erikson HRSG and a GE D11 steam turbine to meet system load requirements utilizing Ovation and Mark VIe Controls

1864 E. Niles Ave
Fresno, CA 93720
559-281-5731

JESSE J. GUNNELLS

5/08 to 9/10 Granite Services Tampa, FL
Global Controls Resource Manager

- Coordinate with various GE business segments to forecast manning levels, assess hiring and training needs, and implement plans to meet business demands and growth initiatives
- Drive utilization of Controls Field Engineers across business segments and global regions to minimize bench time and increase customer fulfillment
- Manage skill-set competency globally for 180 Controls Field Engineers

3/07 to 3/08 NAES Faribault, MN
Control Room Operator

- Safe and reliable operation of a combined-cycle configuration to meet load requirements
- Make changes to Cimplicity control screens for more efficient operation
- Responsible for safe and reliable operation of Seimens GTX 100 gas turbine
- Commissioned GE A10 steam turbine, CMI HRSG and BOP equipment
- Operated Mark VI controls for GE 7FA, Delta V controls for BOP, and ABB Advant for Seimens GTX 100

9/04 to 10/05 PenPower Tampa, FL
Resident Controls Engineer

- Commissioning and testing of three GE-EPE 6B gas turbines in a combined cycle power plant
- Training plant operations and maintenance personnel on Mark V control system
- Responsible for coordination of manpower and parts for scheduled and emergency outages

6/04 to 9/04 and 10/05 to 11/06 PenPower Tampa, FL
Engineering Field Service Manager

- Managed $12 Million P&L supporting global clients in the power industry
- Forecasting, budgeting, and assigned-time for 50+ Field Engineers
- Coordination, job placement, and mobilization of engineers with over 140 different skill sets
- Maintaining jobsite staffing levels with competent engineers for multiple customers

2/01 to 6/04 PenPower Tampa, FL
Mark V Controls Engineer/Project Manager

- Addressing maintenance and warranty issues on 7EA gas turbines
- Lead Controls TA responsible for DLN1 emissions tuning for gas
- Supervision of electricians/I&C techs during commissioning and installation of gas turbines
- Set-up, programming, check-out and commissioning of Mark V control systems

9/00 to 12/00 SPEC Group Columbia, S.A.
Operator Trainer

- Training Material covered Mark V, EX 2000, ABB DCS, and Plant specific operation and maintenance
- Co-gen plant consists of: 2-GE frame 7FA gas turbines, 2-Samsung HRSG's, a GE D11 steam turbine and BOP equipment

1864 E. Niles Ave
Fresno, CA 93720
559-281-5731

JESSE J. GUNNELLS

5/00 to 9/00 NACES Havana, IL
Boiler Operator

- Responsible for safe and efficient operation of eight Combustion Engineering oil fired boilers
- Responsible for maintaining readiness for load changes associated with a public power service company

9/98 to 5/99 and 11/99 to 5/00 Kaiser Aluminum Grammercy, LA
Control Room Operator (Operations Leader)

- Responsible for safe operation of four Frame 5 GE gas turbines and HRSG's
- Responsible for the safe and efficient operation of four Riley natural gas fired boilers and three GE steam turbines
- Operated Speedtronic Mark V control system
- Operated Honeywell TDC 2000 distributed control system

5/99 to 11/99 TASSC Geismar, LA
BOP Commisioning Engineer

- Responsible for the safe and timely start-up of a Frame 7EA GE gas turbine, Vogt-Nem HRSG, and English natural gas fired boiler
- Responsible for training 12 operators on safe operation of a gas turbine utilizing Mark V and Foxboro distributed control systems
- Coordinated over 150 operations and Craft Personnel in the commissioning of "Balance of Plant"

5/96 to 9/98 Brown and Root Norco, LA
Boilermaker

- Assisted operations department in commissioning of Sulfur and Coker units
- Performed tasks on various turnarounds including heat exchanger work, hydrotesting, confined space entry, etc.
- Licensed to operate forklift and manlift

10/90 to 5/96 U.S. Navy Norfolk, VA
Machinist Mate

- Safe operation of an oil fired boiler with pneumatic controls
- Safe and efficient operation of two 7.5MW steam turbines, and associated equipment
- Training program in the #2 main machinery room, including 35 to 40 personnel

Education

- GE Mark VIe Controls training
- GE Steam Turbine Fundamentals training
- GE Gas Turbine Fundamentals training
- Speedtronic Mark V Controls training
- Machinist Mate "A" School, Orlando, FL

BARRY P. LAJOIE
805-305-1776
San Luis Obispo, CA 93401 bpl.9301@yahoo.com

SUMMARY

Over twenty years of experience in the environmental health and safety field with a solid foundation in analytical chemistry supporting professional positions held with an air quality regulatory agency and in the electric power generation industry.

PROFESSIONAL EXPERIENCE

May, 2015– Present — ***EHS Program Manager*** — **NAES Corporation, *Panoche Energy Center, LLC***

- Overall responsibility for the environmental, health and safety program at a modern, natural gas-fired peaking facility.
- Responsible for the preparation and submittal of all required regulatory reports including those required under the facility's Title V permit (emission inventory and quarterly CEMS reports), 40 CFR Part 60 (semi-Annual Report of Required Monitoring and Annual Compliance Certification), 40 Part 75 (ECMPS).
- Routinely interface with staff from multiple regulatory agencies.
- Oversaw transition of the EHS training program from the prior O&M company's system to a new site specific GPI Learn based system.
- Cooperatively interface with all plant staff and management and with corporate management team.

November 2013 – May, 2015 — ***EHS Program Manager*** — **NAES Corporation, Staffing Services Division**

- Panoche Energy Center, LLC
  - Provided on-site EHS support in the wake of the departure of the prior EHS manager.
  - Responsible for the preparation and submittal of all required regulatory reports including those required under the facility's Title V permit (emission inventory and quarterly CEMS reports), 40 CFR Part 60 (semi-Annual Report of Required Monitoring and Annual Compliance Certification), 40 Part 75 (ECMPS).
  - Supported the implementation of EHS program elements during the transition to NAES as the new O&M company.
- Plainfield Renewable Energy, LLC (Plainfield, CT; April 2014 – October 2014)
  - Secured Environmental, Health & Safety program at a newly commissioned, state of the art bio-mass/construction debris combustion electric power generation facility following dismissal of the entire upper management team.
  - Developed and implemented procedures to ensure compliance with state and federal air, water, hazardous materials and hazardous waste regulations.
  - Responsible for preparation and review of all technical reports submitted to government agencies.
  - Worked cooperatively with operations and maintenance divisions and corporate staff to ensure compliance with all applicable regulations.
- Dominion Altavista Power Station (Altavista, VA; November 2013 – April 2014).

- Supported, organized and developed multi-media environmental program at the recently converted (formerly coal powered) and commissioned AltaVista Power Station bio-mass power plant which had recently lost its EHS supervisor due to a non-work related injury.
- Maintained perfect compliance operating both independently and in concert with Dominion corporate staff and various plant departments and staff.
- Maintained and fostered solid working relationships with corporate and plant staff and regulators.

September 2011 – June 1, 2013 | ***EHS Compliance Supervisor*** | **Power Plant Management Services LLC**

- Responsible for oversight of all aspects of environmental, health and safety compliance programs for three power plants including regulatory agency interaction, annual budgeting, regulation tracking, review and approval of monitoring and compliance reports and project management
- Brought a team-oriented approach to management and support of the environmental, health and safety programs at three power plants, maintaining compliance with all local, state and federal requirements through frequent communication, report review, periodic site assessment and development of strong, collaborative working relationships with staff.
- Successfully directed the renewal of a bio-mass facility's NPDES permit, reducing risk from potential third party legal action and obtaining more workable permit conditions.
- Participated in budget forecast and review process, identifying onetime and ongoing environmental and safety projects and expenses with particular attention to regulatory change and potential budget impacts.
- Implemented compliance tracking database tool thereby allowing effective, accurate and timely tracking of plant environmental and safety tasks and requirements.
- Minimized risk to company and shareholders during potential plant acquisition efforts through thorough and experienced due diligence review of environmental site conditions and compliance programs.

August 2010 – September 2011 | ***Environmental Project Manager*** | **NAES Corporation**

- Oversaw all aspects of environmental compliance program (air, water, hazardous materials, hazardous waste) for five newly acquired power plants located throughout the western US.
- Ensured continual and ongoing compliance with all regulations and permit requirements through effective team-oriented support and oversight of plant environmental programs.
- Developed and implemented environmental procedures for a power plant with competing grid reliability and environmental requirements, thereby eliminating risk of regulatory enforcement action during certain upset, breakdown and maintenance conditions.
- Effectively implemented corporate environmental procedures following acquisition of new power plants.
- Tracked and interpreted changes in state and federal regulations, which could affect operation of the assets.
- Developed and maintained solid working relationships with regulatory agency staff resulting in an atmosphere of trust and respect that paid dividends when renewing permits and addressing potential compliance problems.

March 2007 – August 2010 | ***Senior Environmental Compliance Professional*** | **Dynegy Moss Landing, LLC**

- Responsible for management and oversight of the hazardous waste and hazardous materials storage and handling programs at both the Moss Landing Power Plant (MLPP), the largest electric power generation plant in California, and the smaller Oakland Power Plant (OPP).

- Work with plant management to identify environmental risk and compliance priorities with the goal of maintaining industry leading regulatory compliance in an efficient and cost effective manner.
- Maintain and implement site-specific facility emergency and spill response plans pursuant to contingency planning requirements of various regulatory programs and statutes including Spill Prevention Control and Countermeasures (SPCC), SARA Title III, California Accidental Release Prevention (CalARP), and California's Business Plan/Contingency Plan regulations.
- Manage compliance with state and federal hazardous waste generator requirements including waste characterization and profiling, on-site waste management and storage, waste shipment and disposal, and preparation of Annual and Biennial Hazardous Waste Facility Reports.
- Prepared waste minimization analysis and reports under the California SB-14 waste minimization program. Quantified waste generation practices, evaluated source reduction strategies, and established achievable waste reduction goals.
- Develop and manage program budget and identify priority projects related to hazardous waste and hazardous materials management.

April 2002 – March 2007 ***Senior Environmental Specialist*** **Duke Energy Morro Bay, LLC**

- As a member of the management team, was directly responsible for oversight of all elements of facility's broad, multi-media (air, water, hazardous materials, hazardous waste) environmental compliance program.
- Established and maintained solid, cooperative working relationships with regulatory agencies.
- Managed all water monitoring and reporting activities associated with facility's NPDES permit, storm water management program.
- Directly responsible for all air monitoring and reporting efforts associated with maintaining compliance with the facility's federally enforceable Title V air quality Permit To Operate.
- Developed and maintained facility's multisource annual emission inventory.
- In compliance with the facility's hazardous waste surface impoundment Part B RCRA Permit, oversaw and coordinated quarterly groundwater monitoring events, reviewed and interpreted analytical data, and oversaw the preparation and submittal of quarterly monitoring reports.
- Maintained compliance with state and federal hazardous waste generator requirements including waste characterization and profiling, on-site waste management and storage, waste shipment and disposal, and preparation of Annual and Biennial Hazardous Waste Facility Reports.
- Oversaw implementation of the state's Hazardous Materials Business Plan/Contingency Plan requirements including maintenance of the plans and hazardous material inventories.
- Implemented Spill Prevention Control & Counter Measures requirements including preparation and maintenance of the facility's SPCC Plan.
- Notable projects include:
    - Successful cleanup of subsurface contamination at the facility's former offsite fuel oil tank farm involving the removal of five thousand cubic yards of hydrocarbon affected soil which was diverted from disposal for beneficial reuse.
    - Cleanup and decommissioning of the facility's ten million gallon displacement oil tank in preparation for the tanks eventual demolition
    - Onsite treatment and discharge of one million gallons of oil-contaminated water under a low threat discharge permit successfully negotiated with RWQCB staff in preparation for the cleaning and decommissioning of two massive five million barrel fuel oil storage tanks.
    - Performed facility-wide noise survey to identify those areas of the facility requiring signage and additional worker hearing protection in conformance with OSHA requirements.
- Developed and presented all required environmental training to facility staff .
- Worked directly with regulatory staff from various agencies on, including the EPA, Regional Water Quality Control Board, Air Pollution Control District, Department of Fish & Game, Coastal

Commission, Department of Toxic Substance Control, and County Environmental Health Department among others on regulatory and permit related issues affecting the plant.
- Responsible for preparation and maintenance of EH&S budget.

March 1995 – April 2002 *Air Quality Specialist* **San Luis Obispo County Air Pollution Control District**

- As a member of the Planning Division, supported the Districts efforts to reduce emissions associated with on and off road mobile sources and to foster less auto dependent land use development patterns in the county.
- Performed technical review of air quality impact assessments and traffic studies performed pursuant to CEQA and NEPA for numerous land use development projects.
- Utilized various emissions modeling tools including URBEMIS (forerunner to CalMEED), CALINE, and SCREEN3 and emission factors contained in EMFAC, OFFROAD and AP42 to evaluate emissions associated with proposed construction and land use projects.
- Prepared technical reports and presentations for upper management and the District's Board of Directors.
- Developed emission reduction estimates and forecasts for various land use strategies aimed at reducing mobile source emissions as part of the triennial Clean Air Plan updates.
- Played a key role in the assessment of air quality impacts and human health risk associated with the Avila Beach remediation project, providing technical support in the selection of sample collection and analytical techniques and data review and interpretation. Worked closely and cooperatively with members of other participating agencies and responsible party staff and contractors.
- Played a crucial role in the early development and implementation of several grant programs aimed at funding projects to minimize mobile source emissions including the Carl Moyer Heavy Duty Diesel Engine program and the District's MOVER program.
- Participated on the California Air Resources Board URBEMIS (land use and construction impact emission estimation tool) advisory committee, providing county specific traffic, population and vehicle use information.
- Worked cooperatively with staff from various other local, state and federal agencies including, but not limited to various local city and county planning departments, SLOCOG, CalTrans, Fish and Game, Regional Water Quality Control Board, other air pollution control districts and CARB.

January 1994-March 1995 *Analytical Team Manager* **ZymaX Environtechnology**

- Managed the production of high quality analytical data using EPA analytical protocols to measure volatile and semi-volatile organic compounds in water, soil, hazardous waste and air samples.
- Worked with clients to identify analytical needs to ensure successful attainment of project goals and objectives.
- Developed capability of laboratory to analyze volatile organic hydrocarbons in ambient air and source samples.

January 1993-January 1994 *Air Quality Analytical Chemist* **Environmental Analytical Services, Inc.**

- Oversaw the production of high quality analytical data by a five person analytical group using EPA analytical protocols to measure volatile and semi-volatile organic compounds in water, soil, hazardous waste and air samples.
- Provided project management and client technical support services.
- Participated in several large ambient air studies aimed at developing emission factors for photo-reactive organic compounds (ROG) from various industrial and non-industrial sources.

April 1987-January 1993 *Analytical Group Leader* **Coast To Coast Analytical Services, Inc.**

- Oversaw the production of high quality analytical data by a five person analytical group using EPA analytical protocols to measure volatile and semi-volatile organic compounds in water, soil, hazardous waste and air samples.
- Provided project management and client technical support services.
- Participated in the development of novel analytical method to analyze methyl-isothiocyante in soil, water and tissue samples contaminated as the result of a large spill caused by a train derailment.

EDUCATION

Bachelor of Science, Physical Science
California Polytechnic State University, San Luis Obispo, CA (1987)

Software and Air Quality Modeling Tools:

Very solid command of common software tools including MS Excel, Word, PowerPoing, and Access.

Solid understanding and familiarity with various air quality modeling tools including, but not limited to URBEMIS (forerunner to CalEEMOD), CALI NE, SCREEN3, EMFAC, OFFROAD

Appendix 3B

(BIO-5)

Training Attendance Sheet

Panoche Energy Center
43883 West Panoche Road
Firebaugh, CA 93622

Record of Attendance and/or Independent Review

FACILITATOR: Barry Lajoie

TOPIC:
2018 Worker Environmental Awareness Training (WEAP)
- PEC WEAP Video covering biological resources, Paleontological resources and cultural resources (URS/NOREAS, 2008)
- PEC WEAP Natural Resouces Trianing Handbook (NOREAS, July 2015)
- PEC WEAP (NOREAS, July 2015)

PRINT NAME	Date	Signature
1. Monty Clapham	OUT ON EXTENDED SICK LEAVE (1)	
2. Nikki Chatham	6/27/18	
3. Chris Dodson	6-27-18	
4. Robert Faugier	6-27-18	
5. Dave Fisher	6/27/18	
6. Jesse Gunnells	6/27/18	
7. Jeff Herrera	6/29/18	
8. Barry Lajoie	6/27/18	
9. Dion McClellan	6/29/18	
10. Erick Navarro	6/27/18	
11. Stoney Ridgway	6/27/18	
12. Carlos Zermeno	6/27/18	
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		

(1). WILL BE PROVIDED WEAP TRAINING UPON RETURN

Return to Compliance Manager when complete.

PANOCHE ENERGY CENTER

Worker Environmental Awareness Program
Natural Resource Training Handbook

Prepared by

NOREAS

TABLE OF CONTENTS

INTRODUCTION

This "Worker Environmental Awareness Program Natural Resource Training Handbook" supports the Conditions of Certification presented in the February 13, 2015 Panoche Energy Center (06-AFC-5C) Staff Analysis of Amendment Proposal to Install Wastewater Storage Tanks for the Panoche Energy Center (PEC) project. This handbook is a guide, which summarizes the general rules and procedures that must be followed by everyone working on the project. This handbook follows industry standards for Best Management Practices.

PEC, a simple-cycle, natural gas-fired, 400-megawatt facility, was certified by the Energy Commission in its Decision on December 19, 2007, and began commercial operation on July 1, 2009. The facility is located in an unincorporated area approximately 15 miles southwest of the city of Mendota in western Fresno County, California. The Project site is approximately 50 miles west of the city of Fresno, 2 miles east of Interstate 5, southeast of the intersection of West Panoche Road and Davidson Avenue, and off the alignment of Davidson Avenue. The Project site is specifically located in the Southwest Quarter of Section 5, Township 15 South, Range 13 East, on the United States Geological Survey (USGS) Quadrangle map. The assessor's parcel number (APN) is 027-060-78S.

Our job is not only to successfully build the project, but also to accomplish this while protecting the physical environment and natural resources pursuant to federal and state laws and project authorizations. This handbook will inform you about these environmental requirements / commitments and provide some of the basic rules and guidelines for working on the project. It is important for each person to understand that your actions and behavior in the field are critical for keeping the project in compliance and avoiding unnecessary delays or work shutdowns. If any pertinent compliance conditions are violated, the Designated Biologist, Biological Monitors, or Compliance Project Manager (CPM), will direct the Construction Manager to halt work until the issue has been addressed.

If you have any questions regarding the environmental requirements on the project, ask your Supervisor, Designated Biologist, Biological Monitor, or CPM before starting work. We have a commitment to provide you with the information that will allow you to successfully accomplish your job while keeping the project in compliance1.

REMEMBER: You are responsible for understanding and abiding by the contents of this handbook and will be held individually responsible for your actions.

[1] This Training Handbook can be provided in other languages, as appropriate.

Roles and Responsibilities

Each person working on the project is here to contribute to its' successful completion. In doing so, every individual has the responsibility to do their part to uphold and comply with the PEC environmental requirements and is encouraged to actively participate in the environmental training sessions, and to become aware of the natural environment in which you are working.

Biological Monitors

Biological Monitors sponsored by PEC will work closely with the contractors to ensure that the PEC environmental requirements are being met during construction. These monitors are an integral part of the PEC team and will work closely with Construction Supervisors to answer questions, provide direction on environmental issues, and assist in obtaining approval for any construction variance requests. Resource specialists who have expertise in biology will be available to assess specific concerns and will conduct required monitoring and reporting to ensure protection of sensitive biological resources during PEC construction activities.

Agency Monitors

"Agency Monitors" from state and federal regulatory departments and so forth may also be present at the PEC during construction. In some cases, these agency personnel have law enforcement authority; in others, they have enforcement authority over PEC construction activities. You may see or meet representatives from the following agencies:

- California Energy Commission (CEC);
- U.S. Fish and Wildlife Service (USFWS); and
- California Department of Fish and Game (CDFG)

Give all agency personnel your cooperation. If you have any questions, contact your Construction Supervisor or the appropriate PEC team member immediately (see Contact List Below).

Environmental Rules For All Employees:

1. Stay only within designated work areas and access roads. Approved work areas, access roads, and staging areas will be clearly marked. All PEC activities must remain in these areas. Do not go beyond or disturb areas outside of the grading limits or other designated work boundaries.

2. Project-related vehicles shall observe a 20-mph speed limit in all project areas, except on County roads and State/Federal highways; this is particularly important at night when common and special status species (e.g., kit foxes) are most active.

3. Do not enter or disturb exclusion areas. Exclusion areas are clearly identified with SENSITIVE RESOURCE signs, flagging, paint, and/or fencing to protect known occurrences of biological resources. Do not enter an exclusion zone for any reason.

4. 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.

5. Check under vehicles for wildlife before starting engines.

6. Report all inadvertent deaths of special-status species to the appropriate PEC representative, Designated Biologist, or Biological Monitor.

7. Do not litter. Dispose of trash, especially food related trash, in designated containers. All litter and construction debris must be removed from the jobsite daily. Cigarette butts are trash, too!

8. Prohibit feeding of wildlife by staff and subcontractors.

9. Do not bring firearms or weapons to the PEC.

10. Ensure that all contaminated materials are cleaned up, removed from the PEC site and disposed of as required by the PEC Stormwater Pollution Prevention Plan (SWPPP) and Spill Prevention Containment and Control (SPCC) Plan; and maintain any erosion control devices.

11. Minimize use of rodenticides and herbicides at the PEC and prohibit the use of chemicals and pesticides known to cause harm to amphibians. If rodent control must be conducted, zinc phosphide or an equivalent product shall be used to the maximum extent practical.

12. Practice fire prevention and safety. All fires are prohibited for PEC safety and protection of wildlife; this includes barbecues. All vehicles and equipment within the PEC must have adequate fire tools.

13. Be aware of all applicable environmental requirements before entering the PEC. It is the responsibility of each person working on the project to understand and comply with the environmental requirements that affect your job. If there is any question, ask your supervisor, a Biological Monitor, or the Designated Biologist before starting work.

14. Attend the PEC Worker Environmental Awareness Program training sessions, and display proof of completion. All PEC workers are required to complete the Worker Environmental Awareness Program, and to display the training program's hard hat decal while at the PEC.

15. To prevent harassment, and mortality of common and special status species (e.g., kit foxes), no pets will be permitted at the PEC.

16. In order to comply with Section 10 of the Migratory Bird Treaty Act (MBTA) and relevant sections of the CDFG Code (e.g., 3503, 3503.4, 3544, 3505, et seq.), any vegetation clearing will take place outside of the typical avian nesting season (i.e., February 1st - August 31st), to the maximum extent practical. If this is not possible, a qualified biologist will conduct and submit a migratory nesting bird and raptor survey report prior to ground-disturbing activities, construction, and so forth within the PEC limits. A qualified biologist is an individual with sufficient education and field experience in local California ecology and biology to adequately identify local plant and wildlife species. The survey shall occur not more than 72 hours prior to initiation of PEC activities, and any occupied passerines and/or raptor nests occurring within or adjacent to the PEC will be delineated. To the maximum extent practicable, a minimum buffer

zone from occupied nests will be maintained during physical ground-disturbing activities. Once nesting has been determined to cease, the buffer may be removed.

17. All excavated, steep-walled holes or trenches more than 2-feet deep shall be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed.

18. If at any time a trapped or injured kit fox is discovered, USFWS, CDFW, and the Compliance Project Manager (CPM) shall be contacted.

19. If night-time construction occurs, the speed limit restriction shall be reduced to 10 mph.

20. New sightings of kit fox shall be reported to the CNDDB. A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the CPM and USFWS.

21. Preconstruction/pre-activity surveys for the San Joaquin kit fox (*Vulpes macrotis mutica*) shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol). Written results of preconstruction/pre-activity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities.

22. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.

Special-Status Wildlife

Special status species may be encountered at the PEC. Protecting these animals is our responsibility. It is also the law. Federal and state authorities have both regulatory and enforcement power to ensure protection. Fines and jail sentences for harming "special-status" or State / Federally endangered species can be severe.

REMEMBER: You will be held individually responsible for you actions.

> It is illegal to "take", meaning to "harm, harass, pursue, hunt, shoot, wound, trap, kill, capture, or collect", wildlife officially listed as threatened or endangered. Protection extends to the animals, dead or alive, and all their body parts. Violation of threatened and endangered special laws can result in penalties of up to $100,000 and/or one year in jail.

Aside from the laws and potential for fines and jail sentences, there are other reasons why you should be concerned with protecting unique habitats, plants, and wildlife that live within the PEC; such as preserving them for the enjoyment of future generations.

The following section identifies the special status biological resources that may be encountered at the PEC. The Designated Biologist or Biological Monitor will conduct site-specific "tailgate training" before work begins in the areas where these resources have a potential to occur.

Protecting special-status wildlife is one of the most important responsibilities we face during construction at the PEC. The highest potential for occurrence for special status animals within the PEC vicinity is the San Joaquin kit fox. Details regarding protecting the San Joaquin kit fox are discussed below.

San Joaquin Kit Fox

Natural History of the San Joaquin Kit Fox

The San Joaquin kit fox (*Vulpes macrotis mutica*) is the smallest fox in North America, with an average body length of 20 inches and weight of about 5 pounds. It is a member of the Canidae family, which includes dogs, wolves and foxes. San Joaquin kit foxes are lightly built, with long legs and large ears. Their coat ranges from tan to buffy gray in the summer to silvery gray in the winter. Their belly is whitish and their tail is black-tipped.

Kit fox utilize underground dens. Dens are used for temperature regulation, shelter from adverse weather, and protection from predators. Kit foxes either dig their own dens, use those constructed by other animals, or use human-made structures (culverts, abandoned pipelines, or banks in sumps or roadbeds). Kit foxes often change dens and multiple dens may be used throughout the year.

Kit fox are the size of a small dog and are approximately 2.5 feet long, including the tail. They are active at night, but can also be active during daylight hours in late spring and early summer. They feed primarily on kangaroo rats, ground squirrels, mice, and rabbits. These foxes use dens for shelter, reproduction, and escape from predators. Dens usually have multiple entrances, which are keyhole shaped and greater than 8 inches in diameter.

During September and October, adults begin to prepare pupping dens and pups emerge from dens at slightly more than one month old and begin to disperse about four to five months later. Home ranges of approximately one to 12 square miles have been reported.

Throughout their range, San Joaquin kit foxes are currently limited to remaining grassland, saltbush, open woodland, alkali sink valley floor habitats, and other similar habitats located along bordering foothills and adjacent valleys and plains. In the southern San Joaquin Valley, San Joaquin kit foxes also appear to make extensive use of habitat fragments in an urbanizing environment.

As a "listed" State Threatened and Federally Endangered species, the San Joaquin kit fox receives full protection under both state and federal laws. Therefore, protecting this animal is the responsibility of PEC staff and must be followed by law.

Accordingly, for crews and individuals working in known San Joaquin kit fox habitat areas, additional species-specific information will be provided at tailgate briefings to be held just prior to construction.

It is important that each person at the PEC remember these basic rules for protecting the San Joaquin kit fox:

- Report any sightings of San Joaquin kit fox or their dens, or burrows. If you are at all uncertain, ASK!
- Do not approach or feed wildlife. Keep away from kit fox dens. Do not harm or kill any wildlife encountered – including common wildlife.
- If an animal is harmed or found harmed, contact your Construction Supervisor or the Biological Monitor immediately. Do not attempt to move or handle the animal yourself. Failure to report the death or injury of any listed species is a violation of the State and Federally endangered species acts, and subject to prosecution.
- Stay in the designated work areas.
- Do not enter or disturb vegetation within exclusion areas.
- To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of the PEC, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they should be thoroughly inspected by the Designated Biologist or Biological Monitor. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipe becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at the PEC for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the Designated Biologist or Biological Monitor, the pipe may be moved once to remove it from the path of construction activity.

KEY FIELD CONTACTS

Construction Compliance Manager	~~Dale Rundquist~~ MARY DYAS California Energy Commission 916-651-2072
Designated Biologist	Lincoln Hulse NOREAS 949-467-9116
Biological Monitors	David Fisher – NAES 951-233 3867 Jesse Gunnells – NAES 559-281-5731 Barry Lajoie - NAES 805-305-1776

WORKER ENVIRONMENTAL AWARENESS PROGRAM (WEAP)

PANOCHE ENERGY CENTER (06-AFC-5)

Prepared for

PANOCHE ENERGY CENTER, LLC

November 20, 2007

Prepared by

URS Corporation
2020 East First Street, Suite 400
Santa Ana, CA 92705
(714) 835-6886 Fax: (714) 433-7701

TABLE OF CONTENTS

LIST OF FIGURES

APPENDICES

WORKER ENVIRONMENTAL AWARENESS PROGRAM (WEAP)

1.0 INTRODUCTION

This Draft Worker Environmental Awareness Program (WEAP) supplements the Application for Certification (AFC) for the Panoche Energy Center (PEC) project filed with the California Energy Commission (CEC) in August, 2006. For the purposes of this document, the PEC will be hereafter referred to as the "Project" and the "Project site" is defined as the roughly 12.8-acre area including staging, laydown and temporary construction areas (Assessor's Parcel Number [APN] 027-060-78S). The Project is being constructed by Panoche Energy Center, LLC (PEC, LLC) and Kiewit Construction Inc. (Kiewit).

The Project is located approximately 50 miles west of the City of Fresno, 2 miles east of Interstate 5, southeast of the intersection of West Panoche Road and Davidson Avenue, and off the alignment of Davidson Avenue. Figure 1 shows the location of the site and the surrounding area. The site is specifically described as the Southwest Quarter of Section 5, Township 15 South, Range 13 East, on the United States Geological Survey (USGS) Quadrangle map.

This WEAP is intended to inform construction personnel about the Project specific environmental requirements and provide basic rules and guidelines for working within the Project. To that end, it is important for each member of the PEC team to understand that **their actions and behavior in the field are critical** for keeping the Project in compliance and avoiding unnecessary delays or work shutdowns. The WEAP is a guide, which summarizes the general rules and procedures that must be followed by everyone on the Project site. This WEAP follows industry standards for Best Management Practices.

2.0 FEDERAL ENDANGERED SPECIES ACT

The San Joaquin Kit Fox is protected under federal and state laws and has the potential to occur within the Project Site!

The purposes of the federal Endangered Species Act is to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved.

It is unlawful for any person subject to the jurisdiction of the United States to do the following to any federally listed species:

(A) Import any such species into, or export any such species from, the United States;

(B) Take any such species within the United States or the territorial sea of the United States;

(C) Take any such species upon the high seas;

(D) Possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any such species taken in violation of Subparagraphs (B) and (C);

(E) Deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of a commercial activity, any such species;

(F) Sell or offer for sale in interstate or foreign commerce any such species; or

(G)Violate any regulation pertaining to such species or to any threatened species of fish or wildlife listed pursuant to Section 4 of federal Endangered Species Act.

3.0 SAN JOAQUIN KIT FOX

Natural History and Endangerment Factors

The San Joaquin kit fox (*Vulpes macrotis mutica*) is listed as State Threatened and Federally Endangered. It is the smallest canid in North America with a length of approximately 30 inches, including the tail. It is a nocturnal animal but can be active during daylight hours in late spring and early summer. The diet of San Joaquin kit foxes varies geographically, seasonally, and annually based on variation in abundance of potential prey. They feed primarily on kangaroo rats, ground squirrels, mice, and rabbits. San Joaquin kit foxes will also eat insects, birds, and vegetation.

San Joaquin kit foxes use dens for temperature regulation, shelter from adverse environmental conditions, reproduction, and escape from predators. They may change dens four or five times during summer months and change natal dens one or two times per month. During September and October, adults begin to prepare natal and pupping dens, usually selecting sites with multiple openings. Mating takes place between late December and March. Litters of two to six pups are usually born between February and late March. Pups emerge from dens at slightly more than one month old and begin to disperse about four to five months later. Reproductive success of kit foxes is correlated with prey abundance. Success decreases when the density of prey species drops because of drought, too much rainfall, or other circumstances. Home ranges of approximately one to 12 square miles have been reported.

The San Joaquin kit fox historically was distributed within an 8,700-square mile range in central California from the vicinity of Tracy in the upper San Joaquin Valley south to the general vicinity of Bakersfield. The current range of the San Joaquin kit fox is divided into two areas, the northern range centering around Contra Costa County and the southern range in the San Joaquin Valley and neighboring valleys. They also occur in interior coastal ranges and watersheds from Monterey County to Ventura County. Throughout their range, San Joaquin kit foxes are currently limited to remaining grassland, saltbush, open woodland, alkali sink valley floor habitats, and other similar habitats located along bordering foothills and adjacent valleys and plains. The largest extant populations of San Joaquin kit foxes are in the Elk Hills and the Buena Vista Naval Petroleum Reserve in Kern County, and the Carrizo Plain Natural Area in San Luis Obispo County. In the southern San Joaquin Valley, San Joaquin kit foxes also appear to make extensive use of habitat fragments in an urbanizing environment.

Reasons for the population decline: Intensive agriculture, urbanization, and other land-modifying actions have eliminated extensive portions of habitat and are the most significant causes of this species' endangerment. Such habitat losses contribute to San Joaquin kit fox decline through displacement, direct and indirect mortalities, barriers to movement, and reduction of prey populations. The coyote (*Canis latrans*) and the introduced red fox (Vulpes vulpes) compete for food resources with the smaller San Joaquin kit fox and are known to prey upon San Joaquin kit foxes as well. Predation, competition, poisoning, illegal shooting and trapping, prey reduction from rodent control programs, and vehicle strikes contribute substantially to the vulnerability of this species.

There have been no observations of individuals or their sign (e.g. tracks, carcasses, scat, etc.) within the Project site, however there is a low potential for occurrence for this species within the Project vicinity. The closest known populations are approximately 3 miles to the west of the Project site (Figure 2).

San Joaquin Kit Fox

3.1 Measures to protect the San Joaquin Kit Fox

The San Joaquin kit fox may be encountered within the Project site. Protecting this animal is a responsibility PEC staff must follow. **It is also the law.**

Federal and state authorities have both regulatory and enforcement power to ensure protection. Fines and jail sentences for harming "special-status" or "listed" species can be severe.

REMEMBER: You will be held individually responsible for your actions.

> It is illegal to "take", meaning to "harm, harass, pursue, hunt, shoot, wound, trap, kill, capture, or collect," wildlife officially listed as threatened or endangered. Protection extends to the animals, dead or alive, and all their body parts. Violation of threatened and endangered special laws can result in penalties of up to $100,000 and/or one year in jail.

Aside from the laws and potential for fines and jail sentences, there are other reasons why you should be concerned with protecting unique habitats and the plants and wildlife that live within them. Among those are persevering these rare biological resources for future generations to enjoy.

There are some basic rules for protecting the San Joaquin kit fox.

It is important that each person on the Project site remembers these basic rules for protecting the San Joaquin kit fox:

- Report any sightings of San Joaquin kit fox or their dens, or burrows. If you are at all uncertain, **ASK!**
- Do not approach or feed wildlife. Keep away from their dens, burrows, and nests. **Do not harm or kill any wildlife encountered – including common wildlife.**
- If an animal is harmed or found harmed, contact your Construction Supervisor or the Biological Monitor immediately. Do not attempt to move the animal yourself. **Failure to report the death or injury of any listed species is a violation of state and federal law and subject to prosecution.**
- Stay in the designated work areas.
- Do not enter or disturb vegetation within exclusion areas.
- To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a Project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are

filled, they should be thoroughly inspected for trapped animals. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipe becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.

- To prevent harassment, mortality of kit foxes or destruction of dens by dogs or cats, no pets will be permitted on the Project site.

4.0 BIOLOGICAL RESOURCES

The Project site is located within an active pomegranate orchards and developed areas. The potential for common wildlife and or other special status species occurring within the Project site is low. The following measures have been included to protect the San Joaquin kit fox, other special status species1 and commonly occurring species.

4.1 Mitigation Measures to Protect Biological Resources

The following measures will be implemented by the PEC staff to minimize impacts to all biological resources:

- The Project owner's Construction/Operation Manager shall act on the advice of the Designated Biologist and Biological Monitor(s) to ensure conformance with the biological resources Conditions of Certification. If required by the Designated Biologist and Biological Monitor(s), the Project owner's Construction/ Operation Manager shall halt all site mobilization, ground disturbance, grading, construction, and operation activities in areas specified by the Designated Biologist. The Designated Biologist shall: a) Require a halt to all activities in any area when determined that there would be imminent take to biological resources protedcted under state and federal laws if the activities continued; b). Inform the Project owner and the Construction/Operation Manager when to resume activities; and c) Notify the CPM if there is a halt of any activities, and advise the CPM of any corrective actions that have been taken, or will be instituted, as a result of the work stoppage. If the Designated Biologist is unavailable for direct consultation, the Biological Monitor shall act on behalf of the Designated Biologist.
- Project-related vehicles shall observe a 10-mph speed limit within the Project site, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. To the extent possible, night-time construction should be minimized. Off-road traffic outside of designated Project site is prohibited.
- All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at least once a week.
- No firearms shall be allowed on the Project site.
- Use of rodenticides and herbicides in Project sites will be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental

1 Special-status species" include any species that has been afforded special recognition by federal, state, or local resources agencies (e.g., U.S. Fish and Wildlife Service [USFWS], California Department of Fish and Game [CDFG], etc.) and/or resource conservation organizations (e.g., California Native Plant Society [CNPS]). The term "special-status species" excludes those avian species solely identified under Section 10 of the Migratory Bird Treaty Act (MBTA) for federal protection. Nonetheless, MBTA Section 10 protected species are afforded avoidance and minimization measures per state and federal requirements.

Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional Project-related restrictions deemed necessary by the CEC. If rodent control must be conducted, zinc phosphide should be used because of proven lower risk to kit fox.

- Any contractor, employee who inadvertently kills or injures a San Joaquin kit fox shall immediately report the incident to the Biological Monitor or Designated Biologist. This representative shall contact the appropriate resource agencies immediately in the case of a dead, injured or entrapped kit fox.
- The Sacramento Fish and Wildlife Office and CDFG will be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during Project related activities. Notification must include the date, time, and location of the incident or dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers given below. The CDFG contact is Mr. Ron Schlorff at 1416 9th Street, Sacramento, California 95814, (916) 654-4262.
- Limits of grading and construction activities should be clearly delineated so that no vegetation outside the delineated grading limits would be disturbed by construction personnel or equipment. Project personnel will drive only on existing roads outside of construction limits.
- PEC will implement the Best Management Practices identified in the Project specific Storm Water Pollution Prevention Plan (SWPPP).
- In order to comply with the Migratory Bird Treaty Act and relevant sections of the California Fish and Game Code (e.g., 2080, 3500 et seq.), any vegetation clearing would take place outside of the typical avian nesting season (i.e., February 1st - August 31st), to the maximum extent practical. If this is not possible, prior to ground-disturbing activities, construction, and so forth within the Project site, a qualified biologist will conduct and submit a migratory nesting bird and raptor survey report. The survey shall occur prior to initiation of Project activities and any occupied passerines and/or raptor nests occurring within or adjacent to the Project site will be delineated. To the maximum extent practicable, a buffer zone of 100 feet from occupied nests will be maintained during physical ground-disturbing activities. Once nesting has been determined to cease, the buffer may be removed.

5.0 ENVIRONMENTAL RULES FOR ALL PROJECT EMPLOYEES

1. Stay only within designated work areas and access roads. Approved work areas, access roads, and staging areas will be clearly marked. All Project activities must remain in these areas. Do not go beyond or disturb areas outside of the designated work limits.
2. Do not enter or disturb exclusion areas. Exclusion areas are clearly identified with SENSITIVE RESOURCE signs, flagging, paint, and/or fencing to protect known occurrences of sensitive resources. Do not enter an exclusion zone for any reason.
3. Do not litter. Dispose of trash in designated containers. All litter and construction debris must be removed from the jobsite daily. Cigarette buts are trash too!
4. Clean up and report all hazardous material leaks and spills immediately. Report all leaks and spills of hazardous materials to the CPM, and ensure that all contaminated materials are cleaned up, removed from the right-of-way, and disposed of as required by the Project Stormwater Pollution Prevention Plan (SWPPP) and Spill Prevention Containment and Control (SPCC) Plan.
5. Practice fire prevention and safety. All fires are prohibited for Project site safety and protection of wildlife; this includes barbecues. All vehicles and equipment within the Project site must have adequate fire tools.
6. Be aware of all applicable environmental requirements before entering the Project site. It is the responsibility of each person working on the Project to understand and comply with the environmental requirements that affect your job. If there is any question, ask your supervisor, a Biological Monitor, or the Designated Biologist before starting work.
7. Attend environmental training, and display proof of completion of the Environmental Training Program. All Project construction workers are required to complete the Environmental Training Program and to display the training program hard hat decal while on the Project site.

If you have questions or comments contact:

Construction Compliance Manager	Amanda Johnson URS 714-648-2732
Designated Biologist	Lincoln Hulse URS 714 648 2824
Biological Monitor(s)	Dallas Pugh URS Ken McDonald URS Greg Hoisington URS

Agency staff from regulatory agencies will also be present at the Project site. In some cases, the agency personnel have law enforcement authority; in others, they have enforcement authority over Project construction activities.

You may see or meet representatives from the following agencies:

- CDFG;
- CEC; and / or
- USFWS.

Give all agency personnel your cooperation. If you have any questions, contact your Construction Supervisor, a Biological Monitor, or the Designated Biologist immediately.

6.0 TRAINING MATERIALS

Training materials will be used that address typical Project site compliance issues. The materials include the following: a pocket handbook summarizing the environmental rules, roles, and responsibilities, and important contact phone numbers; a pertinent species identification card identifying important protected resources; and a hardhat decal that will be issued to verify completion of the WEAP.

Training materials will be distributed to promote worker awareness of the rules and requirements and encourage an understanding of the protected resources that may occur within the Project site.

Specific materials will include the following:

- **Environmental handbook:** All training program attendees will receive a pocket-sized handbook that outlines key environmental rules and requirements, and lists the roles and responsibilities of each person working on the project. The handbook will serve as a summary of the environmental requirements and a representation of PEC commitment to environmental compliance. The handbook will also serve as a signed agreement by each individual to uphold these commitments.
- **Photo card:** A Photo card of the San Joaquin kit fox will be distributed to all training program attendees. This card will summarize important compliance information about this specific sensitive environmental resources that is protected. The photo will provide workers with a visual resource so that they may better recognize the resource on the ground should they encounter it.
- **Decals:** A hardhat decal will be distributed to each training program attendee upon the completion of the training. This decal must be displayed on the worker's hardhat as proof of completion of the training program.

Training During the Construction Phase

The WEAP training sessions will provide an understanding of the important environmental compliance requirements concerning biological resources, control measures, and specific environmental permit requirements. An emphasis will be placed on the roles of the project management, contractors, monitors, and the responsibilities of each individual worker to ensure the Project is in compliance and avoids unnecessary work delays.

There will be three main types of training: management and inspection staff training, construction worker training, and tailgate training.

1. Management and Inspection Staff Training

For all PEC management and inspection staff, as well as regulatory agency management and staff and the contractor's key management and inspection staff, there will be a one-day training course held prior to the start of construction. If new management and inspections staff (non-construction workers) are hired after the start of construction, a follow-up training session will be available. This training will provide the participants with the information needed to make environmentally responsible decisions during construction. Specific topics that will be addressed include the following:

- Regulatory overview and summary of permit requirements;
- Environmental resources and project commitments;
- Environmental compliance procedures and protocols;
- Roles and responsibilities of project management, agency personnel, contractors, and each individual worker; and
- Communications, change management, and conflict resolution.

This training session will be interactive and will include "hands on" demonstrations of how to use the environmental field documents.

2. Construction Worker Training

For all construction workers entering the Project site, there will be an approximately 45-minute environmental training class that will highlight key environmental rules and resource protection requirements. This training session will be required for all personnel prior to entering the Project site during construction. The training will emphasize the need for each individual on the project to fully understand all site-specific requirements before beginning their work. After the initial construction worker training session, a video may be used in lieu of moderated sessions.

For construction workers, the training will be more extensive and include topics such as designation of staging areas, traffic control, spill prevention and cleanup, off-road travel restrictions, and marking and avoidance of sensitive resources.

3. Tailgate Training

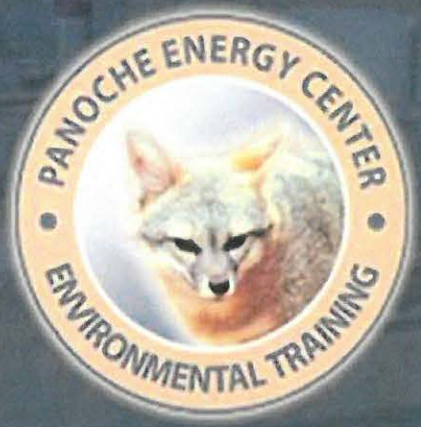
The initial environmental training described above will be supplemented throughout construction by on-going tailgate training. Tailgate trainings will be designed to provide important environmental information to worker crews and management to prevent noncompliance incidents from occurring. The Designated Biologist and Biological Monitor(s) will have the authority to request tailgate trainings as necessary to reinforce key messages and highlight site-specific or resource-specific concerns. Mandatory tailgate trainings will also be used as a tool to manage noncompliance incidents when they occur.

7.0 RECORD KEEPING

Each participant in the on-site WEAP will sign a statement declaring that the individual understands and will abide by the guidelines set forth in the program materials. The person administering the program will also sign each statement. New workers will receive training upon employment.

At least sixty (60) days prior to the start of rough grading, PEC staff will provide copies of the WEAP and all supporting written materials prepared by the Designated Biologist and the name and qualifications of the person(s) administering the program to the CEC for approval. PEC will state in the Monthly Compliance Report the number of persons who have completed the training in the prior month and keep records of all persons who have completed the training to date. The signed statements for the construction phase will be kept on file by PEC staff and made available for examination by the CEC for a period of at least six months after the start of commercial operation. During project operation, signed statements for active project operational personnel will be kept on file for the duration of their employment and for six months after their termination.

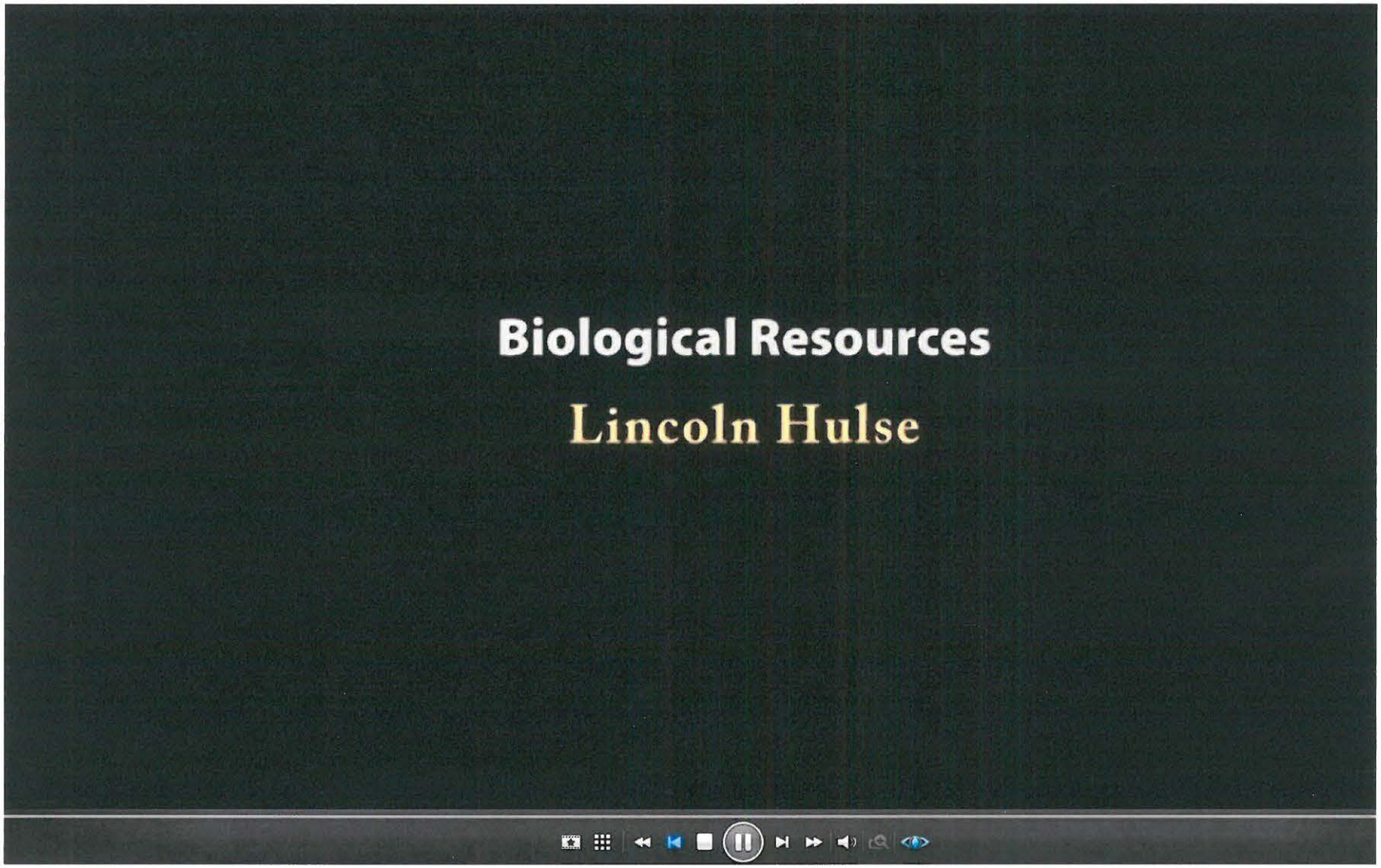
Panoche Energy Center
Worker Environmental Awareness Training Video



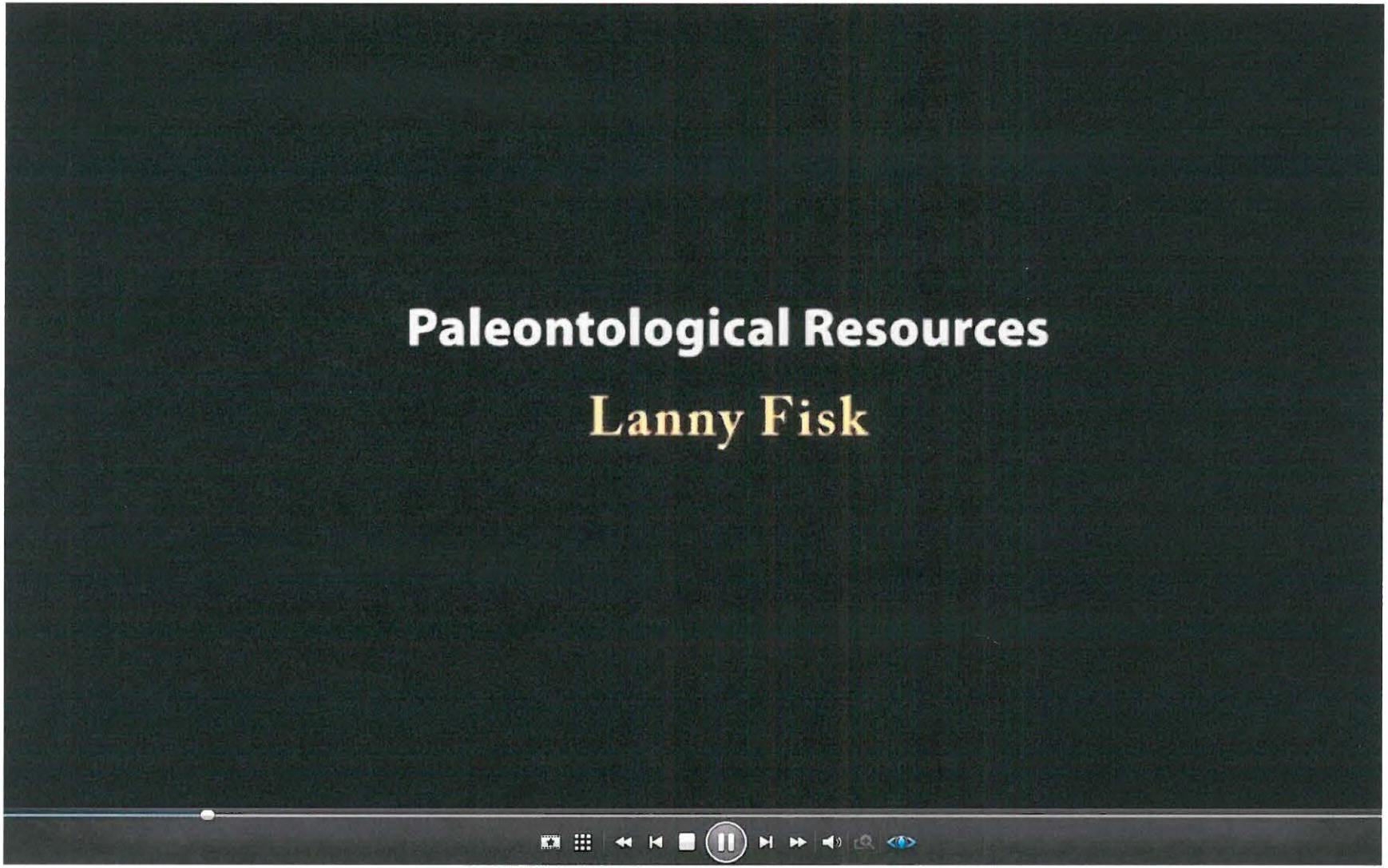
Biological Resources

Paleontological Resources

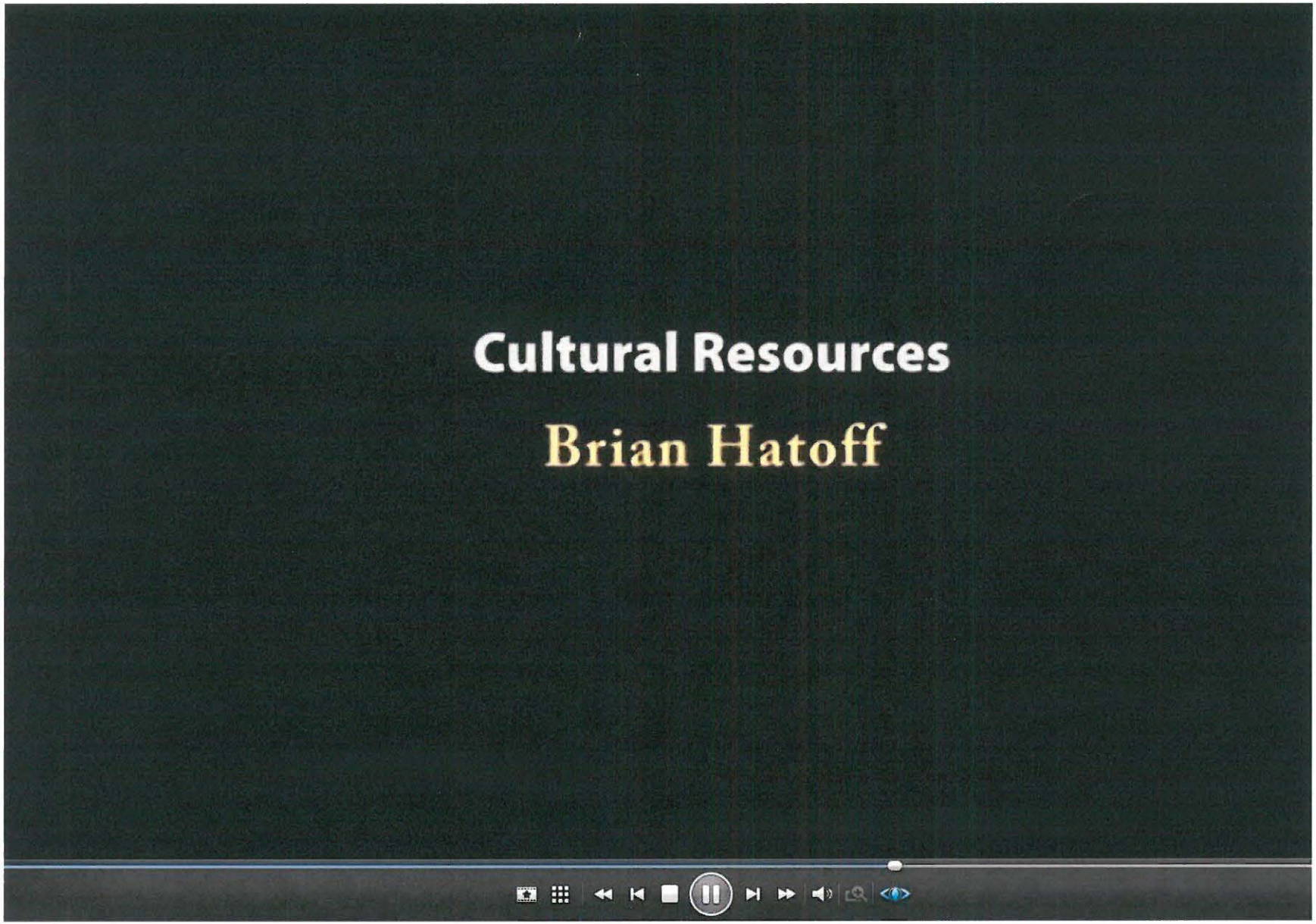
Cultural Resources

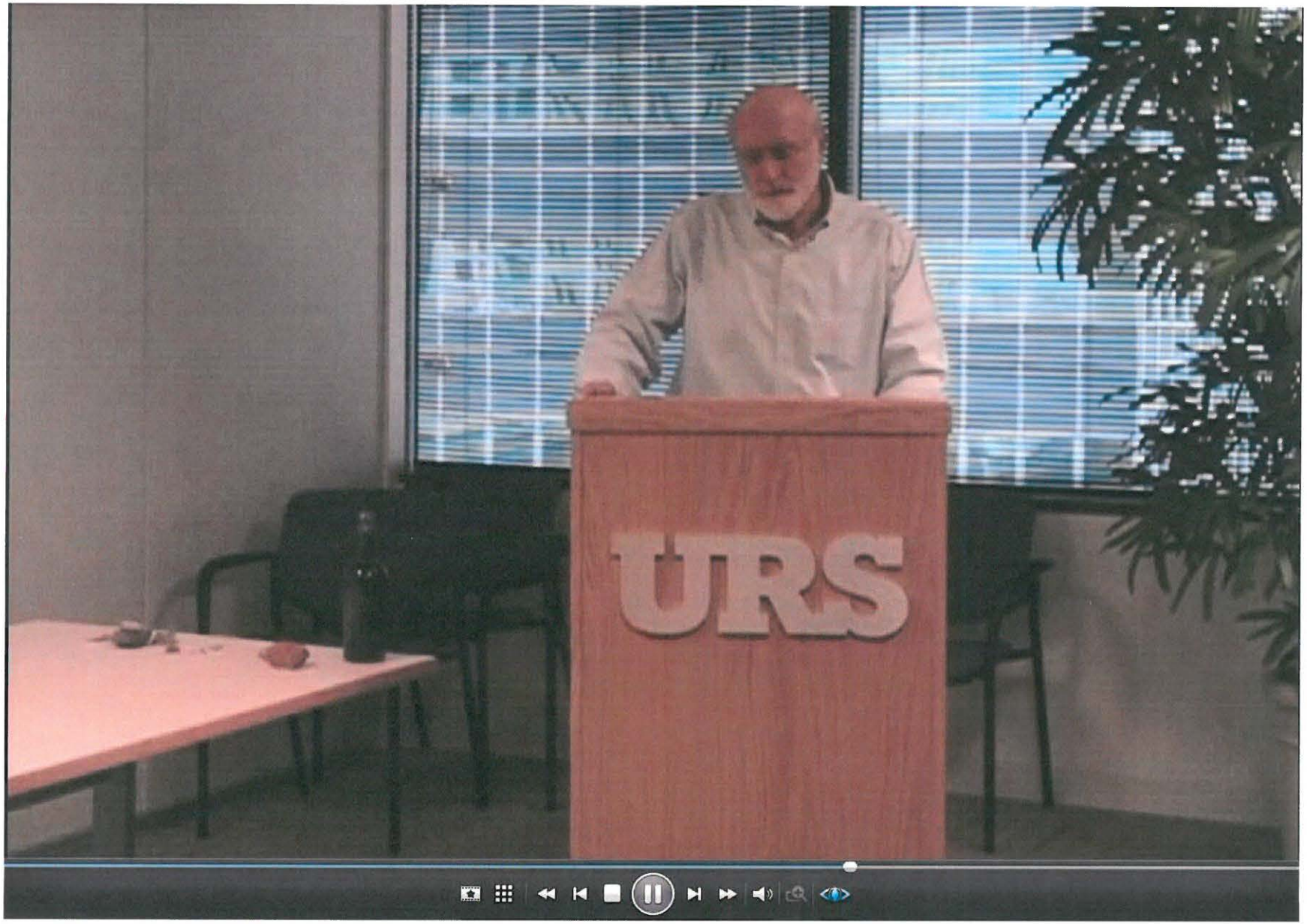

Biological Resources
Lincoln Hulse


URS


Paleontological Resources
Lanny Fisk


URS


Cultural Resources
Brian Hatoff


URS

Appendix 3C

(BIO-6)

BIOLOGICAL RESOURCES MITIGATION IMPLEMENTATION AND MONITORING PLAN WASTEWATER STORAGE TANKS PROJECT (06-AFC-5C)

Prepared for

California Energy Commission
Sacramento, California

Submitted by

PANOCHE ENERGY CENTER, LLC

June 2015

Prepared by

NOREAS
Environmental Engineering and Science

16361 Scientific Way, Irvine, CA 92618

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

1.1 PURPOSE OF THE BRMIMP

This Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) in accordance with the Conditions of Certification presented in the February 13, 2015 Panoche Energy Center (06-AFC-5C) Staff Analysis of Amendment Proposal to Install Wastewater Storage Tanks for the Panoche Energy Center (PEC) project. For the purposes of this document, the PEC Install Wastewater Storage Tank Project will be hereafter referred to as the "Project" and the "Project site" is defined as the roughly 3.5-acres of land that are proposed for construction of the Install Wastewater Storage Tanks which includes staging, laydown and temporary construction lands. The Project is being constructed by Panoche Energy Center, LLC (PECL), Amec Foster Wheeler (Amec) and TIC. The purpose of this plan is to illuminate and define an implementation strategy for those biological resources[1] related mitigation, monitoring, and compliance measures proposed and agreed to by the Project owner that are intended to offset potential adverse impacts to common and "special status[2]" species and their habitats, from the construction and operation of the PEC.

The following permits or approvals include biological resource related mitigation and minimization measures applicable to the construction and operation of the Project:

- California Energy Commission (CEC) Conditions of Certification (06-AFC-5);
- California Energy Commission (CEC) Panoche Energy Center (06-AFC-5C) Staff Analysis of Amendment Proposal to Install Wastewater Storage Tanks; and
- Panoche Energy Center United States Fish and Wildlife Service (USFWS) Biological Opinion (1-1-07-F-0255).

1 "Biological resources" are defined as the plants, wildlife, and habitats that occur, or have the potential to occur, within the project area.

2 "Special-status species" include any species that has been afforded special recognition by federal, state, or local resources agencies (e.g., U.S. Fish and Wildlife Service [USFWS], California Department of Fish and Wildlife [CDFW], etc.) and/or resource conservation organizations (e.g., California Native Plant Society [CNPS]). The term "special-status species" excludes those avian species solely identified under Section 10 of the Migratory Bird Treaty Act (MBTA) for federal protection. Nonetheless, MBTA Section 10 protected species are afforded avoidance and minimization measures per state and federal requirements.

1.2 CONTENTS OF THE BRMIMP

The components of this BRMIMP include the following:

- All biological resources mitigation, monitoring, and compliance measures proposed and agreed to by the project owner;
- All biological resources Conditions of Certification identified as necessary to avoid or mitigate impacts;
- All biological resources monitoring and compliance measures required in federal agency terms and conditions, such as those provided in the USFWS Biological Opinion;
- All sensitive biological resources to be impacted, and/or avoided by project construction, operation and closure;
- A detailed description of measures that shall be taken to avoid or mitigate temporary disturbances from construction activities;
- Duration for each type of monitoring and a description of monitoring methodologies and frequency;
- Performance standards to be used to help decide if/when proposed mitigation is or is not successful;
- All performance standards and remedial measures to be implemented if performance standards are not met;
- A preliminary discussion of biological resources related facility closure measures; and
- A process for proposing plan modifications to the Compliance Project Manager (CPM) and appropriate agencies for review and approval; and
- A copy of all biological resources related permits obtained.

1.3 MAINTAINING AND DISTRIBUTING THE BRMIMP

Ultimately, the responsibility for maintaining the plan rests with PECL. During the construction phase of the Project, this task has been delegated to the Designated Biologist. During Project operation, the compliance staff at the power plant will be responsible for keeping the plan up-to-date. Current versions of the plan will be distributed to the following individuals or their successors as shown in Table 1-1 below:

Table 1-1. Distribution of the BRMIMP

Title/ Entity	Name	No. Copies
CPM	Dale Rundquist California Energy Commission 916-651-2072	2
Environmental Project	Maggie Fitzgerald SAGE Environmental Consulting	

Title/ Entity	Name	No. Copies
Manager	949-514-5655	
Construction Compliance Manager	Robin Shropshire Power Plant Management Services, LLC 406-465-2231	1
Designated Biologist	Lincoln Hulse NOREAS Inc. 949-302-8910	1

2.0 PROJECT DESCRIPTION

2.1 BACKGROUND DOCUMENTS

Project description information is contained within the following references and summarized below:

- California Energy Commission. 2007. Final Staff Assessment – Panoche Energy Center Application for Certification (06-AFC-5) Fresno County;
- California Energy Commission. 2015. Panoche Energy Center Amendment Proposal to Install Wastewater Storage Tank (06-AFC-5C); and
- Panoche Energy Center, LLC. 2007. Panoche Energy Center USFWS Biological Opinion (1-1-07-F-0255).

2.2 PROJECT DISCRIPTION AND LOCATION

PEC, a simple-cycle, natural gas-fired, 400-megawatt facility, was certified by the Energy Commission in its Decision on December 19, 2007, and began commercial operation on July 1, 2009. The facility is located in an unincorporated area approximately 15 miles southwest of the city of Mendota in western Fresno County, California. The Project site is approximately 50 miles west of the city of Fresno, 2 miles east of Interstate 5, southeast of the intersection of West Panoche Road and Davidson Avenue, and off the alignment of Davidson Avenue. The Project site is specifically located in the Southwest Quarter of Section 5, Township 15 South, Range 13 East, on the United States Geological Survey (USGS) Quadrangle map (Figure 1). The assessor's parcel number (APN) is 027-060-78S.

The proposed changes consist of enhanced design measures to accommodate and secure the operational capacity of the existing PEC wastewater injection process. PECL proposes to install three (3) storage tanks, ranging from 250,000 gallons to 500,000 gallons. The storage tanks would store wastewater during operational periods where the net wastewater production exceeds the injection well capacity (approximately 250 gallons per minute [gpm]). The proposed changes also include installation and operation of a permanent stand-by treatment system. The approximate capacity and dimensions of the Enhanced Wastewater System structures are as follows:

- 500,000-gallon Blowdown Collection Tank: 60 feet diameter by 24 feet high;
- 500,000-gallon Wastewater (RO Reject) Collection Tank: 60 feet diameter by 24 feet high;
- 250,000-gallon Permeate Collection Tank: 48 feet diameter by 20 feet high; and

- Enhanced Wastewater System Building: 120 feet long by 70 feet wide and approximately 20 feet high.

Construction of the Enhanced Wastewater System is projected to begin in mid July of 2015 and last for approximately 14 weeks. The workforce would vary depending on the month of construction and weather conditions. Major construction activities would include site preparation and minor grading, trenching for underground pipelines, installation of equipment, erection of above grade storage tanks and a structure to house treatment equipment.

2.3 EXISTING PROJECT SITE CONDITIONS

The Project site was historically arid sagebrush and native grass covered landscape. As a result of heavy agricultural and industrial use in the area, no native vegetation is present within the Project site or vicinity. The Project site is a depauperate landscape (i.e., bare ground, gravel and equipment storage locations all directly influenced by anthropogenic activities). Panoche Road is to the north of the plant site and the remainder of the Project site is surrounded by agriculture primarily consisting of apricot and pomegranate trees. The landform within the area is flat to slightly rolling topography, which allows for open, expansive views of several mountain ranges to the west of the valley. These include: the Panoche Mountains and Panoche Hills to the west; Ciervo Mountain and Tumey Hill to the south; and Sugarloaf and Ortigalita peaks to the northwest. The Project site elevation is approximately 420 feet above mean sea level and slopes gently down to the northeast at less than one percent grade.

2.4 PROJECT CONSTRUCTION SCHEDULE

Table 2-1 identifies the proposed schedule for each project element.

Table 2-1. Project Schedule

Project Element	Construction Period
Preconstruction Natural Resource Survey	Prior to July 15, 2015
Preconstruction Compliance Report	Prior to August 15, 2015
Start of Site Mobilization	July 15, 2015
Start Construction of Facility	July 15, 2015
Startup and Testing	October 17, 2015
Commercial Operation	November 21, 2015
Annual Compliance Report	Annually, 45 days following end of year
Post-construction Compliance Report	45 days post-construction

3.0 PEC TEAM, RESPONSIBILITIES, AND AGENCY CONTACT INFORMATION

3.1 PEC PROJECT TEAM

The Project biological team and contact information is listed below in Table 3-1.

Table 3-1. PEC Team Members and Contact Information

CEC CPM	Dale Rundquist California Energy Commission 916-651-2072
CEC Biologist	Ann Crisp California Energy Commission 916-651-3776
Construction Project Engineer	Bradley Florentin, PE Amec Foster Wheeler 970-403-0714
Designated Biologist	Lincoln Hulse NOREAS Inc. 949-302-8910
Biological Monitor(s)	David Fisher – NAES 951-233 3867 Jesse Gunnells – NAES 559-281-5731 Barry Lajoie - NAES 805-305-1776 Christina Capobianco – TIC 661-440-1879 Joseph Guzman – TIC 661-340-9312

3.2 RESPONSIBILITIES OF PROJECT BIOLOGICAL TEAM

This section describes the responsibilities for each member of the Project's biological team.

3.2.1 Compliance Project Manager (CPM)

The CPM, in concert with CEC staff, will oversee the compliance monitoring and will be responsible for:

1. Ensuring that the design, construction, operation, and closure of the project facilities are in compliance with the terms and a condition of the CEC's approved AFC (06-AFC-5C) and USFWS Biological Opinion (1-1-07-F-0255);
2. Resolving complaints;
3. Processing post-certification changes to the conditions of certification, project description, and ownership or operational control;
4. Documenting and tracking compliance filings; and,
5. Ensuring that the compliance files are maintained and accessible.

The CPM is the contact person for the CEC and will consult with appropriate responsible agencies and the CEC when handling disputes, complaints and amendments.

All Project compliance submittals are submitted to the CPM for processing. Where a submittal required by a condition of certification requires CPM approval, the approval will involve all appropriate staff and management.

The CEC has established a toll free compliance telephone number of 1-800-858-0784 for the public to contact the CEC about power plant construction or operation-related questions, complaints or concerns.

3.2.2 Construction Project Engineer

PECL retains final responsibility for compliance with implementation of all applicable mitigation measures and conditions. The PEC's Construction Project Engineer will ensure compliance with mitigation measures by ensuring that the agency-mandated conditions are part of contracts issued to the contractors.

It is the responsibility of PEC's staff to ensure that the general compliance conditions and the conditions of certification are satisfied. Failure to comply with any of the conditions of certification or the general compliance conditions may result in reopening of the case and revocation of CEC certification, an administrative fine, or other action as appropriate.

The Construction Project Engineer will act on the advice of the other members of the PEC Team to ensure conformance with mitigation measures and conditions. If directed by the Designated Biologist, Biological Monitor(s) or the CPM, the Construction Project Engineer will halt all construction activities to ensure that potentially significant biological resource impacts are avoided. The Designated Biologist will inform the project owner of any necessary remedial measures and when to resume construction. The Designated Biologist will also advise the CEC what remedial measures are recommended or have been instituted.

3.2.3 Designated Biologist and Biological Monitor(s)

The Designated Biologist shall perform, oversee, and/or supervise the following duties during any Project site or related facilities mobilization, ground disturbance, grading, construction, operation, and closure activities:

1. Advise the project owner's Construction Project Engineer and Operation Manager, Supervising Construction Engineer and Operations Engineer on the implementation of the biological resources related Conditions of Certification.
2. Be available to oversee, supervise, and / or conduct mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources such as special-status species or their habitat.
3. Be available to oversee, supervise, and / or perform the demarcation of sensitive biological resource areas and inspect these areas at appropriate intervals to ensure adequate compliance with regulatory terms and conditions.
4. Notify the project owner and the CPM of any noncompliance with biological resources related Condition of Certification.
5. Respond directly to inquiries of the CPM regarding biological resource compliance related issues.
6. Be available to oversee, supervise, and / or directly maintain written records of the tasks specified above and those included in the BRMIMP. Summaries of these records shall be submitted in the Monthly Compliance Report and the Annual Report; and
7. Be available to oversee, supervise, and directly train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training and all permits.
8. As asserted above, the Designated Biologist may be assisted by qualified Biological Monitor(s). The project owner's CEC approved Designated Biologist shall also be supported by Biological Monitors that have received CEC approval. Biological Monitor(s) will be trained by the Designated Biologist and be familiarity with the Conditions of Certification and the BRMIMP, WEAP and all permits.

The Designated Biologist and/or the Biological Monitor(s) shall:

1. Oversee, and/or supervise the following: Project related actions that have potential to adversely impact biological resources; and inspect active construction areas where wildlife may have become trapped. During construction oversee and/or supervise the inspection of any pipes or other structures that may contain San Joaquin kit fox. Oversee and/or supervise the inspection and installation of structures that prevent entrapment of wildlife or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (parking lots) for wildlife in harms way.
2. Require a halt to all activities when it is determined that there would be an adverse impact to sensitive biological resources if the activities are continued;

3. Inform the project owner, the Construction Project Engineer and the Operation Manager when to resume activities; and,
4. Notify the CPM if there is a halt of any activities, and advise the CPM of any corrective actions that have been taken, or will be instituted, as a result of the halt.

3.3 AGENCY CONTACT INFORMATION

Protection of biological resources falls under the jurisdiction of several agencies. The following list of contacts (Table 3-2) is provided in case agencies need to be contacted regarding specific resource information or advice on the implementation of mitigation measures. Table 3-2. Agency Contact Information

USFWS	Thomas Leeman	916-414-6600
CEC Compliance Project Manager	Dale Rundquist	916-651-2072
CEC Biologist	Ann Crisp	916-651-3776

4.0 COMPLIANCE MEASURES

4.1 Summary of Compliance Measures

Table 4-1 provides a summary of compliance and mitigation measures identified by the CEC in the Conditions of Certification and the aforementioned USFWS Biological Opinion. Biological impacts have been minimized to the extent practical by siting facilities away from sensitive habitats, within disturbed agriculture fields, and adjacent to existing roads. The Project will be entirely located in the original PEC construction laydown area, which is depauperate landscape (i.e., bare ground, gravel and equipment storage locations all directly influenced by anthropogenic activities).

Table 4-1. Summary of Conservation and Mitigation Measures

Condition	Description of Requirement	Verification	Responsible Party	Due Date
CEC Staff Assessment Conditional Measures				
BIO-1	The project owner shall assign a Designated Biologist to the project. The project owner shall submit the resume of the proposed Designated Biologist, with at least 3 references and contact information, to the Energy Commission Compliance Project Manager (CPM) for approval. The Designated Biologist must at least meet the following minimum qualifications: 1. Bachelor's Degree in biological sciences, zoology, botany, ecology, or a closely related field; and 2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society; and 3. At least one year of field experience with biological resources found in or near the Project site. In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM, that the proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the conditions of certification	The project owner shall submit the specified information at least 90 days prior to the start of any Project site (or related facilities) mobilization. No Project site or related facility activities shall commence until an approved Designated Biologist is available to be on Project site. If a Designated Biologist needs to be replaced, the specified information of the proposed replacement must be submitted to the CPM at least ten working days prior to the termination or release of the preceding Designated Biologist. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent Designated Biologist is proposed to the CPM for consideration.	Panoche Energy Center, LLC	No CEC submittal necessary since the DB has not changed.
BIO-2	The project owner shall ensure that the Designated Biologist performs the following during any site (or related facilities) mobilization, ground disturbance, grading, construction, operation, and closure activities. The Designated Biologist may be assisted by the approved Biological Monitor(s), but remains the contact for the project owner and CPM. 1. Advise the project owner's Construction and Operation Managers on the implementation of the biological resources Conditions of Certification; 2. Consult on the preparation of the Biological Resources Mitigation Implementation and Monitoring Plan, to be submitted by the project owner; 3. Be available to supervise, conduct and coordinate mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special status species or their habitat; 4. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions; 5. Inspect active construction areas where animals may have become	The Designated Biologist shall submit in the Monthly Compliance Report copies of all written reports and summaries that document biological resources activities. If actions may affect biological resources during operation a Designated Biologist shall be available for monitoring and reporting. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless their duties are ceased as approved by the CPM.	Panoche Energy Center, LLC	Monthly Compliance Report

Table 4-1. Summary of Conservation and Mitigation Measures

Condition	Description of Requirement	Verification	Responsible Party	Due Date
	trapped prior to construction commencing each day. At the end of the day, inspect for the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (i.e. parking lots) for animals in harm's way; 6. Notify the project owner and the CPM of any non-compliance with any biological resources Condition of Certification; 7. Respond directly to inquiries of the CPM regarding biological resource issues; 8. Maintain written records of the tasks specified above and those included in the BRMIMP. Summaries of these records shall be submitted in the Monthly Compliance Report and the Annual Report; and 9. Train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training and all permits.			
BIO-3	The project owner's CPM-approved Designated Biologist shall submit the resume, at least 3 references, and contact information of the proposed Biological Monitors to the CPM for approval. The resume shall demonstrate to the satisfaction of the CPM, the appropriate education and experience to accomplish the assigned biological resource tasks. Biological Monitor(s) training by the Designated Biologist shall include familiarity with the Conditions of Certification and the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), WEAP and all permits	The project owner shall submit the specified information to the CPM for approval at least 30 days prior to the start of any Project site (or related facilities) mobilization. The Designated Biologist shall submit a written statement to the CPM confirming that individual Biological Monitor(s) have been trained including the date when training was completed. If additional Biological Monitors are needed during construction, the specified information shall be submitted to the CPM for approval 10 days prior to their first day of monitoring activities.	Panoche Energy Center, LLC	At least 30 days prior to the start of any Project site (or related facilities) mobilization
			Designated Biologist	10 Days prior to first day of monitoring activities

Table 4-1. Summary of Conservation and Mitigation Measures

Condition	Description of Requirement	Verification	Responsible Party	Due Date
BIO-4	The project owner's Construction/Operation Manager shall act on the advice of the Designated Biologist and Biological Monitor(s) to ensure conformance with the biological resources Conditions of Certification. If required by the Designated Biologist and Biological Monitor(s), the project owner's Construction/ Operation Manager shall halt all Project site mobilization, ground disturbance, grading, construction, and operation activities in areas specified by the Designated Biologist. The Designated Biologist shall: 1. Require a halt to all activities in any area when determined that there would be an unauthorized adverse impact to biological resources if the activities continued; 2. Inform the project owner and the Construction/Operation Manager when to resume activities; and 3. Notify the CPM if there is a halt of any activities, and advise the CPM of any corrective actions that have been taken, or will be instituted, as a result of the work stoppage. If the Designated Biologist is unavailable for direct consultation, the Biological Monitor shall act on behalf of the Designated Biologist.	The project owner shall ensure that the Designated Biologist or Biological Monitor notifies the CPM immediately (and no later than the following morning of the incident, or Monday morning in the case of a weekend) of any non-compliance or a halt of any Project 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. Whenever corrective action is taken by the project owner, a determination of success or failure will be made by the CPM within five working days after receipt of notice that corrective action is completed, or the project owner will be notified by the CPM that coordination with other agencies will require additional time before a determination can be made.	Panoche Energy Center, LLC	Immediate CPM notification (no later than morning following violation)
BIO-5	The project owner shall develop and implement a CPM approved Worker Environmental Awareness Program (WEAP) in which each of its employees, as well as employees of contractors and subcontractors who work on the Project site or any related facilities during Project site mobilization, ground disturbance, grading, construction, operation and closure are informed about sensitive biological resources associated with the project. The WEAP must: 1. Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation in which supporting written material and electronic media is made available to all participants; 2. Discuss the locations and types of sensitive biological resources on the Project site and adjacent areas; 3. Present the reasons for protecting these resources; 4. Present the meaning of various temporary and permanent habitat protection measures; 5. Identify whom to contact if there are further comments and questions about the material discussed in the program; and 6. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.	At least 60 days prior to the start of any Project site (or related facilities) mobilization, the project owner shall provide to the CPM two (2) copies of the proposed WEAP and all supporting written materials and electronic media prepared or reviewed by the Designated Biologist and a resume of the person(s) administering the program. The project owner shall provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date. The signed training acknowledgement forms from construction shall be kept on file by the project owner for a period of at least six months after the start of commercial operation. During project operation, signed statements for active project operational personnel shall be kept on file for six months following the termination of an individual's employment.	Panoche Energy Center, LLC	At least 60 days prior to the start of any Project site (or related facilities) mobilization Monthly Compliance Report

Table 4-1. Summary of Conservation and Mitigation Measures

Condition	Description of Requirement	Verification	Responsible Party	Due Date
	The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist.			
BIO-6	The project owner shall submit two copies of the proposed Biological Resources Mitigation Implementation and monitoring Plan (BRMIMP) to the CPM (for review and approval) and to USFWS (for review and comment) and shall implement the measures identified in the approved BRMIMP. The BRMIMP shall be prepared in consultation with the Designated Biologist and shall identify:(See BIO-5)	The project owner shall provide the specified document at least 60 days prior to start of any Project site (or related facilities) mobilization. The CPM, in consultation with the USFWS 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 Project site and related facilities mobilization the revised BRMIMP shall be resubmitted to the CPM. The project owner shall notify the CPM no less than five working days before implementing any modifications to the approved BRMIMP to obtain CPM approval. Any changes to the approved BRMIMP must also be approved by the CPM and the USFWS to ensure no conflicts exist. Implementation of BRMIMP measures will be reported in the Monthly Compliance Reports by the Designated Biologist (i.e. survey results, construction activities that were monitored, species observed). Within thirty (30) days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction closure report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the project's site mobilization, ground disturbance, grading, and construction phases, and which mitigation and monitoring items are still outstanding.	Panoche Energy Center, LLC	At least 60 days prior to start of any Project site (or related facilities) mobilization

Table 4-1. Summary of Conservation and Mitigation Measures

Condition	Description of Requirement	Verification	Responsible Party	Due Date
BIO-7	The project owner shall incorporate into the permanent or unexpected permanent closure plan and the BRMIMP, measures that address the local biological resources. The planned permanent or unexpected permanent closure plan shall address the following biological resources related mitigation measures: 1. Removal of transmission conductors when they are no longer used and useful; 2. Removal of all power plant site facilities and related facilities; 3. Measures to restore wildlife habitat to promote the re-establishment of native plant and wildlife species; and 4. Revegetation of the plant site and other disturbed areas utilizing an appropriate seed mixture.	Draft permanent or unexpected closure measures shall be made part of the BRMIMP. At least 12 months prior to commencement of closure activities, the project owner shall address all biological resources related issues associated with facility closure, and provide final measures, in a Biological Resources Element. The Biological Resources Element shall be incorporated into the Facility Closure Plan and include a complete discussion of the local biological resources and proposed facility closure mitigation measures.	Panoche Energy Center, LLC	At least 12 months prior to commencement of closure activities
BIO-8	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 Project sites, and storage and parking areas to avoid identified sensitive resources; 2. Design, install and maintain transmission lines and all electrical components in accordance with the APLIC Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006 to reduce the likelihood of electrocutions of large birds; 3. Eliminate any California Exotic Pest Plants of Concern (CalEPPC) List A species from landscaping plans; 4. Prescribe a road sealant that is non-toxic to wildlife and plants; and 5. Design, install, and maintain facility lighting to prevent side casting of light towards wildlife habitat	All mitigation measures and their implementation methods shall be included in the BRMIMP. Implementation of the measures will be reported in the Monthly Compliance Reports by the Designated Biologist. Within thirty (30) days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying how measures have been completed.	Panoche Energy Center, LLC	BRMIMP and Monthly Compliance Report
BIO-9	The project owner shall implement the following measures to manage their construction Project site, and related facilities, in a manner to avoid or minimize impacts to the local biological resources. Some of the following measures were adopted from USFWS "Standardized Recommendations for Protection of SJKF Prior to or During Ground Disturbance" (1999 and 2011) 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	All mitigation measures and their implementation methods shall be included in the BRMIMP. Implementation of the measures will be reported in the Monthly Compliance Reports by the Designated Biologist. Within thirty (30) days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying how measures have been completed.	Panoche Energy Center, LLC	BRMIMP and Monthly Compliance Report

Table 4-1. Summary of Conservation and Mitigation Measures

Condition	Description of Requirement	Verification	Responsible Party	Due Date
	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 Project site; 5. Prohibit pets from being brought to the Project site; 6. Report all inadvertent deaths of special-status species to the appropriate project representative. Injured animals shall be reported to CDFW and the project owner shall follow instructions that are provided by CDFW. 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 CDFW for specific notification procedures; 7. If at any time a trapped or injured kit fox is discovered, USFWS, CDFW, and the Compliance Project Manager (CPM) shall be contacted. 8. Minimize use of rodenticides and herbicides in the project area and prohibit the use of chemicals and pesticides known to cause harm to amphibians. If rodent control must be conducted, zinc phosphide or an equivalent product shall be used; and 9. 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. 11. If night-time construction occurs, the speed limit restriction shall be reduced to 10 mph. 12. All excavated, steep-walled holes or trenches more than 2-feet deep shall be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. 10. New sightings of kit fox shall be reported to the CNDDB. A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the CPM and USFWS. 11. Preconstruction/pre-activity surveys for the San Joaquin kit fox (*Vulpes macrotis mutica*) shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San			

Table 4-1. Summary of Conservation and Mitigation Measures

Condition	Description of Requirement	Verification	Responsible Party	Due Date
	Joaquin kit fox. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol). Written results of preconstruction/pre-activity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities. 12. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.			
USFWS Biological Opinion Conservation Measures				
1	Project-related vehicles shall observe a 20-mph speed limit in all Project sites, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. To the extent possible, night-time construction should be minimized. Off-road traffic outside of designated Project sites should be prohibited.	All construction speed limits and off-road traffic outside designated Project sites will be monitored during construction activities. Night-time construction will be limited to the maximum extent feasible	Panoche Energy Center, LLC	Construction Duration
2	To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures under number 13 of this section must be followed.	All excavated, steep-walled holes or trenches more than 2 feet deep will be monitored during construction activities. Before holes or trenches are filled, they will be thoroughly inspected for trapped animals. The results of all monitoring activities will be documented in monthly and annual monitoring reports by the Designated Biologist.	Biological Monitor	Construction Duration

Table 4-1. Summary of Conservation and Mitigation Measures

Condition	Description of Requirement	Verification	Responsible Party	Due Date
3	Kit foxes are attracted to den-like structures such as pipes and may enter stored pipe becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction Project site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.	All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at the construction Project site for one or more overnight periods will be thoroughly inspected by the biological monitor for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. The results of all monitoring activities will be documented in monthly and annual monitoring reports by the Designated Biologist.	Biological Monitor	Construction Duration
4	All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at least once a week from a construction or Project site.	The construction Project site will be inspected for trash on a daily basis; trash containers will be inspected for weekly disposal.	Panoche Energy Center, LLC	Construction Duration
5	No firearms shall be allowed on the Project site.	The construction Project site will be monitored for firearms.	Panoche Energy Center, LLC	Construction Duration
6	To prevent harassment, mortality of kit foxes or destruction of dens by dogs or cats, no pets will be permitted on Project sites.	The construction Project site will be monitored for pets. The results of all monitoring activities will be documented in monthly and annual monitoring reports by the Designated Biologist.	Biological Monitor	Construction Duration
7	Use of rodenticides and herbicides in Project sites will be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of proven lower risk to kit fox.	Use of rodenticides and herbicides will be monitored. The results of all monitoring activities will be documented in monthly and annual monitoring reports by the Designated Biologist.	Biological Monitor	Construction Duration
8	A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped individual. The representative will be identified during the employee education program. The representative's name and telephone number shall be provided to the Service.	The Designated Biologist will function as the project representative. The results of all monitoring activities will be documented in monthly and annual monitoring reports by the Designated Biologist.	Designated Biologist	Construction Duration

Table 4-1. Summary of Conservation and Mitigation Measures

Condition	Description of Requirement	Verification	Responsible Party	Due Date
9	An employee education program shall be conducted. The program will consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and agency personnel involved in the project. The program will include the following: a description of the kit fox and its habitat needs; a report of the occurrence of kit fox in the Project site; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the above-mentioned people and anyone else who may enter the Project site. The program will be conducted in languages other than English, as appropriate.	All construction employees will be required to attend environmental awareness training and sign an environmental awareness training form. All forms will be collected and filed by the property owner. The project owner will provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date.	Panoche Energy Center, LLC	Construction Duration
10	Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. will be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but that after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a Project site-specific basis in consultation with the Service, California Department of Fish and Wildlife (CDFW), and revegetation experts.	The project will implement a CEC-approved Landscape Plan that includes recontouring, compaction of soils, spreading and grooming of topsoil, and planting of appropriate vegetation.	Panoche Energy Center, LLC	Following Construction Completion
11	In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for advice.	Any trapped animals will be promptly allowed to escape and will be documented by the biological monitor in monthly compliance reports.	Biological Monitor	Construction Duration
12	Any contractor, employee, or military or agency personnel who inadvertently kills or injures a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFW and the Service immediately in the case of a dead, injured or entrapped kit fox. The CDFW contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or biologist.	Any injured or killed kit fox will be immediately reported to CDFW, USFWS, Designated Biologist, and the CPM. Records of the occurrence will be maintained and submitted monthly by the Designated Biologist.	Designated Biologist	Construction Duration
13	The Sacramento Fish and Wildlife Office and CDFW will be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers given below. The CDFW contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.	Any injured or killed kit fox will be immediately reported to CDFW, USFWS, Designated Biologist, and the CPM. Records of the occurrence will be maintained and submitted monthly by the Designated Biologist.	Biological Monitor and Designated Biologist	Construction Duration

Table 4-1. Summary of Conservation and Mitigation Measures

Condition	Description of Requirement	Verification	Responsible Party	Due Date
14	Limits of grading and construction activities should be clearly delineated so that no vegetation outside the delineated grading limits would be disturbed by construction personnel or equipment. Project personnel will drive only on existing roads outside of construction limits.	Grading limits and approved vehicle routes will be clearly delineated and monitored by the Designated Biologist..	Biological Monitor	Construction Duration
15	PEC will implement the Best Management Practices identified in the project specific Storm Water Pollution Prevention Plan (SWPPP).	Best Management Practices identified in the project specific Storm Water Pollution Prevention Plan will be monitored by the Environmental Inspector	Panoche Energy Center, LLC	Construction Duration
16	In order to comply with the Migratory Bird Treaty Act and relevant sections of the CDFG Code (e.g., 3503, 3503.4, 3544, 3505, et seq.), any vegetation clearing would take place outside of the typical avian nesting season (i.e., February 1st - August 31st), to the maximum extent practical. If this is not possible, prior to ground-disturbing activities, construction, and so forth within the study area, a qualified biologist will conduct and submit a migratory nesting bird and raptor survey report. A qualified biologist is an individual with sufficient education and field experience in local California ecology and biology to adequately identify local plant and wildlife species. The survey shall occur not more than 72 hours prior to initiation of Project activities and any occupied passerines and/or raptor nests occurring within or adjacent to the study area will be delineated. To the maximum extent practicable, a minimum buffer zone from occupied nests will be maintained during physical ground-disturbing activities. Once nesting has been determined to cease, the buffer may be removed.	A migratory nesting bird and raptor survey report, if necessary, will be submitted to CDFW, USFWS and CPM by the Designated Biologist.	Designated Biologist	Within 72 hours prior to initiation of Project activities
17	PEC will retain the services of a Biological Monitor who will be responsible for overseeing project environmental protection measures. All encounters with listed species will be reported to the Biological Monitor, who will record the following information: species name; location (narrative and maps) and dates of observations; general condition and health, including injuries and state of healing; diagnostic markings, including identification numbers or markers; and locations moved from and to (if appropriate).	The Designated Biologist shall submit in the Monthly Compliance Report copies of all written reports and summaries that document biological resources activities. If actions may affect biological resources during operation a Designated Biologist shall be available for monitoring and reporting. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless their duties are ceased as approved by the CPM.	Designated Biologist	Monthly Compliance Report

5.0 WORKER ENVIRONMENTAL AWARENESS PROGRAM

PECL will develop and implement a CEC approved Worker Environmental Awareness Program (WEAP). The WEAP will consist of a document that identifies and discusses:

- The Project description;
- Biological resources with potential to occur within the Project site;
- Avoidance and minimization measures for these biological resources;
- Environmental rules for employees;
- Designated parking and avoidance areas;
- A description of the power plant and its associated facilities;
- The locations and types of sensitive biological resources on the Project site and adjacent areas;
- Information regarding species and habitat identification and occurrence;
- The natural history and endangerment factors for all sensitive species targeted for mitigation;
- The reasons for protecting these resources and the requirements of the federal and state Endangered Species Acts;
- A description of the temporary and permanent measures being taken at the Project site to protect habitat and therefore avoid harming sensitive resources;
- Construction limitations and activities;
- The responsibilities of workers, including reporting procedures if species are located during construction activities;
- Appropriate protocols for dealing with protected species when encountered in and around the Project site or its associated appurtenances (e.g., natural gas pipeline); and
- Who to contact if there are further comments and questions about the material discussed in the program.

Specific direction will be provided to workers on the following:

- Designated areas for driving and parking of vehicles;
- Speed limits;
- Control of litter by placing all trash in covered containers;
- Avoidance of areas around sensitive resources;
- Maintenance of erosion control devices;
- Reporting sightings of threatened and endangered species;

- Not approaching or feeding wildlife;
- Checking under vehicles for wildlife before starting engines;
- Checking in piping or similar structures with a diameter of greater than 4 inches for San Joaquin kit fox;
- Not bringing pets to the Project site; and
- Reporting all spills of gasoline, diesel fuel, lubricants, paints, and cleaners.

The above referenced information will be presented in a video along with cultural and paleontological resources training. Contractors, their employees, and other personnel working on the Project site will receive training on special- status species potentially occurring in the Project site. The program materials describing this information will be distributed to all PEC staff, employees, contractors, subcontractors, and anyone else who may enter the Project site. Each participant in the WEAP will sign a statement declaring that the individual understands and will abide by the guidelines set forth in the program materials. The person administering the program will also sign each statement. New workers will receive training upon employment.

6.0 PRE-CONSTRUCTION SURVEYS AND REPORTING

The primary use of pre-construction surveys for this Project will be to locate and/or relocate avoidance areas for sensitive species identified during the biological surveys for the aforementioned AFC. Pre-construction surveys of the proposed Project site and a maximum 200-foot buffer area will be performed no less than 14 days and no more than 30 days prior to commencement of construction activities. Pre-construction surveys will include a comprehensive pre-construction survey and mapping effort. Results of pre-construction surveys will be included in the initial monthly monitoring report and post-construction Compliance Report.

6.1 PRE-CONSTRUCTION SURVEYS

Pre-construction surveys for special status species (e.g., state and federal protected species, nesting passerines and raptors, and so forth) and their habitats will be conducted no less than 14 days and no more than 30 days prior to commencement of surface-disturbing activities during construction and during operation and maintenance of the project. Pre-construction surveys will include the following areas:

- Project site;
- Laydown and employee parking areas;
- Other areas subject to disturbance, if applicable.

6.1.1 Pre-construction Survey Data Forms

A data form will be developed to assist in the performance of pre-construction surveys and survey database. The Designated Biologist will maintain these forms and will provide copies to the CEC, and other appropriate agencies upon request. (Appendix A)

6.1.2 Pre-construction Survey Report

Pre-construction survey results will be included in the Monthly Biological Monitoring Report that will be sent to the CEC. A summary of these reports will also be included in the Post-construction Report. The pre-construction survey report will include descriptions of the following:

- Survey methodologies;
- Flagging and signage of construction areas and roads;
- Flagging of avoidance areas;
- Sensitive biological resources observed; and
- Impact avoidance measures implemented.

6.2 STAKING AND FLAGGING OF AVOIDANCE AREAS

Avoidance areas will be established for San Joaquin kit fox, or any other special status species (e.g., other species protected under state and/or federal Endangered Species Acts, Section 10 of the Migratory Bird Treaty Act, Fish and Game Code Sections [2080, 3500 *et seq*], etc.), if necessary. The perimeter of the avoidance areas will be staked with wooden stakes, roughly 3 feet high, and approximately 10 feet apart. Buffer zones will be utilized as needed to the maximum extent practical. Each stake will be flagged with brightly colored flagging. All project-related staking and flagging will be collected and removed following the construction phase of the Project. Avoidance criteria for sensitive resources are shown in Table 6-1.

Table 6-1. Avoidance Criteria for Sensitive Resources

Biological Resource	Radius of Resource Avoidance Area
Kit fox known or potential den	To the maximum extent practical - 100 feet
Kit fox natal/pupping den	To be determined through USFWS consultation
Nesting birds during breeding season (Feb. 1 through Aug. 31)	To the maximum extent practical - 100 feet
Raptors	To the maximum extent practical - 100 feet

Each avoidance area is determined by the approximate radius distances presented in Table 6-1 and measured outward from the biological resource. The avoidance areas will be marked no less than 5 days before the start of construction in areas adjacent to the resource. Avoidance areas will be maintained until construction activities are completed, or the potential for adverse impact to the resource has been minimized within the Project site, and then will be removed. If specified avoidance areas cannot be established for any reason, the CEC and other appropriate resource agencies will be contacted for guidance prior to ground-disturbing activities on or near the subject resource.

7.0 ENVIRONMENTAL COMPLIANCE MONITORING AND REPORTING

This section outlines the biological compliance monitoring and reporting required during: construction and Operation and Maintenance (O&M) of the PEC; and remediation of noncompliance issues.

7.1 COMPLIANCE MONITORING

Biological monitoring will be required during initial ground disturbing activates; when excavation is occurring or when excavations will remain open; when construction materials are deployed for installation; when construction traffic is heavy; and/or when sensitive resources are present.

In these instances, biological inspections will:

- Evaluate excavations for trapped wildlife before the onset of construction, and prior to excavation being filled. Any wildlife discovered within an excavation will be allowed to escape voluntarily before construction activities resume, or will be removed from the trench or hole by the Designated Biologist or Biological Monitor;
- Inspect construction pipes, poles, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction Project site for one or more overnight periods before the subject pipe is subsequently buried, capped, or otherwise used or moved in any way;
- Report all inadvertent deaths of special-status species to the appropriate project representative. Injured animals shall be reported to the appropriate agencies and the PEC shall follow instructions that are provided by the appropriate agencies. 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.
- Install temporary fencing and provide wildlife escape ramps for construction areas that contain steep walled holes or trenches if outside of an approved fence. Before such holes are filled, they should be inspected by the Designated Biologist or Biological Monitor.

Although the following inspections will be performed any time a Biological Monitor or the Designated Biologist is on the Project site, evaluations will be conducted at least once a week to ensure that:

- Avoidance areas are flagged and fencing remains in place where needed. In addition, inspection will ensure that fencing and flagging has been removed in areas where construction is completed;
- Construction area boundaries are clearly delineated by fencing or staking and flagging;
- Speed limit signs are in place and accurate;

- Prohibit non-security related firearms or weapons from being brought to the Project site;
- Equipment storage and parking are confined to the designated areas;
- All food-related trash items are being disposed of in appropriate containers and are regularly removed from the Project site;
- Deliberate feeding of wildlife is not occurring;
- Pets are not on the Project site; and
- Rodenticide or herbicides are not to be used during construction.

7.1.1 During Construction Survey Data Forms

A data form will be developed to assist the Biological Monitor(s) and Designated Biologist during construction. The Designated Biologist will maintain these forms and will provide copies to the CEC, and other appropriate agencies upon request. These forms will include the following:

- Name of monitor;
- Weather/time/date information;
- Construction activities on-going within the Project site;
- Location of construction activities within the Project site;
- Avoidance measures used;
- Species observed;
- Compliance issues, if any;
- Recommendations for next monitoring inspection; and
- Other pertinent information.

7.1.2 During Construction Monthly Reports

Monthly Monitoring Reports will be prepared by the Designated Biologist.

These reports will include the following information:

- Areas and activities monitored;
- Incident Reports and resolution of each reported situation;
- Released animals and their locations;
- Construction and monitoring activities planned for the next month; and
- Number of persons who have completed environmental training in the month prior and a running total of all persons receiving environmental training.

The Designated Biologist will prepare and submit an Annual Compliance Report to the CEC, 45 days after the anniversary date of the PEC start of construction. In addition, the Designated Biologist

will prepare and submit within 45 calendar days of completion of the project a post-construction compliance report. These reports will include the following information:

- Dates of project construction;
- Data concerning success and deficiencies in meeting project mitigation measures, and an explanation of any failure to meet such measures;
- Known occurrences of incidental take;
- The effects of construction activities on state or federally listed species and habitats;
- The specific number of habitat acres disturbed;
- Description of specific sensitive resources impacted (e.g., number of kit foxes, nesting birds, raptors, etc.); and,
- Description of monitoring of released and relocated animals.

A final post construction compliance report will be prepared by the Designated Biologist and ad submitted to the CEC within 30 calendar days of the completion of construction activity. This report shall detail the following:

- Dates that construction occurred;
- Pertinent information concerning the success of the project in meeting compensation and other conservation measures;
- An explanation of failure to meet such measures, if any;
- Known project effects on federally listed species, if any;
- Occurrences of incidental take of federally-listed species, if any; and
- Other pertinent information

7.2 CORRECTIVE ACTIONS

Remediation of noncompliance issues will be discussed with PEC staff. The Designated Biologist will take every opportunity to discuss sensitive species biology, protection, and compliance with contracting personnel.

7.3 REPORTING OF INJURIES TO WILDLIFE

Any employee who inadvertently kills or injures a kit fox, or who finds a kit fox dead, injured, or entrapped is required to report the incident immediately to the Designated Biologist (or Biological Monitor. In instances of entrapped listed animals, escape ramps or structures will be immediately installed to allow the subject animal(s) to escape unimpeded.

In the case of injured animals, the Designated Biologist (or Biological Monitor) will immediately notify CDFW State Dispatch at (916)-445-0045 and the USFWS. The Designated Biologist will follow

the instructions of resource professionals for the care of the injured animal. In the case of dead threatened or endangered animals, the Designated Biologist (or designated representative) will notify the appropriate resource agency via electronic mail or telephone within three (3) working days of the finding of any such animal(s). Notification will include the date, time, location, species, and circumstances of the incident.

USFWS	Chief of Endangered Species Division (Central Valley) Sacramento USFWS Office, 2800 Cottage Way, Room W-2605, Sacramento, CA 95825-1846	(916) 414-6600
USFWS	Scott Heard, Resident Agent in Charge of Law Enforcement Division	(916) 414-6660
CEC CPM	Dale Rundquist	(916)-651-2072
CDFW	State Dispatch Mr. Paul Hoffman	(916)-445-0045 (530)-934-9309

8.0 POST-CONSTRUCTION CLEANUP AND LANDSCAPING

Upon completion of construction, all areas subject to ground disturbances, including storage and staging areas, temporary roads installed by the Project will be cleaned up and reclaimed to pre-construction conditions to the maximum extent practical. The cleanup will consist of removal of all stakes, lath, flagging, barrels, cans, drums, accidental spills, and any other refuse generated by construction.

9.0 MEASURES REQUIRED DURING PROJECT OPERATION

Impacts to biological resources are not expected from the operation and maintenance of the PEC.

9.1 MEASURES REQUIRED DURING PROJECT OPERATION

The following mitigation measures will be implemented to reduce potential impacts to biological resources:

- New personnel to the Project site or contractors that have not received training regarding sensitive biological resources in the project vicinity will be trained within 15 days of arrival on the job Project site. In addition, all workers will receive training in sensitive biological resources annually. Upon completion of the training, employees will sign a form stating that they attended the program and understand all project-related mitigation measures. These forms will be filed at PEC offices.
- All food-related trash items will be disposed of in closed containers and removed at least once a week from the Project site.
- There is no deliberate feeding of wildlife.
- No firearms will be allowed on the Project site.
- No pets will be allowed on the Project site.

9.2 RECORDKEEPING

The frequency and record keeping standards described for project construction activities will also be followed for maintaining employee training records and environmental compliance reports during operations.

10.0 MEASURES REQUIRED FOR CLOSURE

Both temporary and permanent closure scenarios are addressed in this section. Permanent closure is defined as the end of the facility's operational phase. Temporary closures may be necessary in the event of disastrous events, unfavorable economic conditions, or other circumstances.

10.1 PERMANENT CLOSURE

A permanent closure plan will be prepared by PEC staff at least 12 months prior to closure activities. It will include take avoidance and mitigation requirements applicable to the sensitive biological resources in the Project site at that time. The plan will also include the reclamation of areas where facilities would be removed, including transmission conductors and all other PEC facilities in order to restore wildlife habitat and promote the re-establishment of wildlife species and plants to pre-construction conditions.

10.2 TEMPORARY CLOSURE

In the case of temporary closure, measures to protect biological resources would be needed only if there were surface disturbances or releases of harmful materials. If such an event occurs, PEC staff will consult with the responsible agencies to plan cleanup and mitigation of impacts to biological resources.

10.3 REPORTING OF CLOSURE ACTIVITIES

Compliance reporting for closure activities will be submitted to the CPM within thirty days after completion of the project and will include the following:

- BRMIMP items that have been completed;
- A summary of all modifications to mitigation measures made during the Project's mobilization, ground disturbance, grading, and construction phases; and
- Any outstanding mitigation and monitoring items

11.0 REFERENCES

California Energy Commission. 2007. Presiding Member's Proposed Decision - Panoche Energy Center Application for Certification (06-AFC-5) Fresno County.

Leeman 2015. Leeman, Thomas, San Joaquin Valley Branch Chief, U.S. Fish and Wildlife Service, Sacramento Office, Personal communication with Ann Crisp of California Energy Commission, January 12, 2015.

Panoche Energy Center, LLC. 2015, Panoche Energy Center Project Kit Fox Clearance Survey Memorandum, dated January 26, 2015.

Panoche Energy Center, LLC. 2007. *Panoche Energy Center Application for Certification* (06-AFC-5).

USFWS. 1999, Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance, U.S. Fish and Wildlife Service, Sacramento, California.

USFWS. 2011, Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance, U.S. Fish and Wildlife Service, Sacramento, California.

Figure 1 Panoche Energy Center General Vicinity Map

Panoche Creek

W Panoche Rd

Aqueduct

5

Panoche Energy Center

Enhanced Wastewater System Site

Existing Substation

Existing Transmission Line

W Panoche Rd

5

General Project Vicinity

Panoche Energy Center
Firebaugh, CA

1 inch = 2,000 feet (0 500 1,000 2,000 Feet) N	Drawn: BLH	Project No. 32710176
	Date: 1/9/2015	

Document Path: G:\Project\GIS\Projects\Panoche Energy Center\GeneralProjectVicinity.mxd

Figure 1

APPENDIX A
Monitoring Form

Panoche Energy Center Weekly Biological Monitoring Form

Contractor = TIC

Week of:			**Monitor's) Present**	

Description of Construction Activities For the Week

Species Detected:

SJKF Observed or sign observed ? Yes____ No____ SJKF activity disrupted ? Yes_____ No___ If yes, describe:

Other biological compliance issues ? Yes____ No____ If yes, describe:

Actions directed by the biologist to the contractor to minimize impacts? Yes_____ No_____ If Yes, describe:

Compliance Observations and Issues

Noise

Trash

Work Limits

Other Notes:

Phone Numbers	**Signature**
NOREAS: Lincoln Hulse 949-467-9116, Sage: Maggie Fitzgerald 949-514-5655, CEC: Dale Rundquist 916-651-2072, PEC Representative: Rob Agency Contact Information is located on Page 2	

Agency Contact Informatin

USFWS	Chief of Endangered Species Division (Central Valley) Sacramento USFWS Office, 2800 Cottage Way, Room W-2605, Sacramento, CA 95825-1846	(916) 414-6600
USFWS	Thomas Leeman, Resident Agent in Charge of Law Enforcement Division	(916) 414-6660
CEC CPM	Dale Rundquist	(916) 654-4228
CDFG	State Dispatch Ron Schlorff	(916) 654-4262

BIOLOGICAL RESOURCES MITIGATION IMPLEMENTATION AND MONITORING PLAN WASTEWATER STORAGE TANKS PROJECT (06-AFC-5C)

Prepared for

California Energy Commission
Sacramento, California

Submitted by

PANOCHE ENERGY CENTER, LLC

June 2015

Prepared by

NOREAS
Environmental Engineering and Science

16361 Scientific Way, Irvine, CA 92618

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

1.1 PURPOSE OF THE BRMIMP

This Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) in accordance with the Conditions of Certification presented in the February 13, 2015 Panoche Energy Center (06-AFC-5C) Staff Analysis of Amendment Proposal to Install Wastewater Storage Tanks for the Panoche Energy Center (PEC) project. For the purposes of this document, the PEC Install Wastewater Storage Tank Project will be hereafter referred to as the "Project" and the "Project site" is defined as the roughly 3.5-acres of land that are proposed for construction of the Install Wastewater Storage Tanks which includes staging, laydown and temporary construction lands. The Project is being constructed by Panoche Energy Center, LLC (PECL), Amec Foster Wheeler (Amec) and TIC. The purpose of this plan is to illuminate and define an implementation strategy for those biological resources[1] related mitigation, monitoring, and compliance measures proposed and agreed to by the Project owner that are intended to offset potential adverse impacts to common and "special status[2]" species and their habitats, from the construction and operation of the PEC.

The following permits or approvals include biological resource related mitigation and minimization measures applicable to the construction and operation of the Project:

- California Energy Commission (CEC) Conditions of Certification (06-AFC-5);
- California Energy Commission (CEC) Panoche Energy Center (06-AFC-5C) Staff Analysis of Amendment Proposal to Install Wastewater Storage Tanks; and
- Panoche Energy Center United States Fish and Wildlife Service (USFWS) Biological Opinion (1-1-07-F-0255).

1 "Biological resources" are defined as the plants, wildlife, and habitats that occur, or have the potential to occur, within the project area.

2 "Special-status species" include any species that has been afforded special recognition by federal, state, or local resources agencies (e.g., U.S. Fish and Wildlife Service [USFWS], California Department of Fish and Wildlife [CDFW], etc.) and/or resource conservation organizations (e.g., California Native Plant Society [CNPS]). The term "special-status species" excludes those avian species solely identified under Section 10 of the Migratory Bird Treaty Act (MBTA) for federal protection. Nonetheless, MBTA Section 10 protected species are afforded avoidance and minimization measures per state and federal requirements.

1.2 CONTENTS OF THE BRMIMP

The components of this BRMIMP include the following:

- All biological resources mitigation, monitoring, and compliance measures proposed and agreed to by the project owner;
- All biological resources Conditions of Certification identified as necessary to avoid or mitigate impacts;
- All biological resources monitoring and compliance measures required in federal agency terms and conditions, such as those provided in the USFWS Biological Opinion;
- All sensitive biological resources to be impacted, and/or avoided by project construction, operation and closure;
- A detailed description of measures that shall be taken to avoid or mitigate temporary disturbances from construction activities;
- Duration for each type of monitoring and a description of monitoring methodologies and frequency;
- Performance standards to be used to help decide if/when proposed mitigation is or is not successful;
- All performance standards and remedial measures to be implemented if performance standards are not met;
- A preliminary discussion of biological resources related facility closure measures; and
- A process for proposing plan modifications to the Compliance Project Manager (CPM) and appropriate agencies for review and approval; and
- A copy of all biological resources related permits obtained.

1.3 MAINTAINING AND DISTRIBUTING THE BRMIMP

Ultimately, the responsibility for maintaining the plan rests with PECL. During the construction phase of the Project, this task has been delegated to the Designated Biologist. During Project operation, the compliance staff at the power plant will be responsible for keeping the plan up-to-date. Current versions of the plan will be distributed to the following individuals or their successors as shown in Table 1-1 below:

Table 1-1. Distribution of the BRMIMP

Title/ Entity	Name	No. Copies
CPM	Dale Rundquist California Energy Commission 916-651-2072	2
Environmental Project	Maggie Fitzgerald SAGE Environmental Consulting	

Title/ Entity	Name	No. Copies
Manager	949-514-5655	
Construction Compliance Manager	Robin Shropshire Power Plant Management Services, LLC 406-465-2231	1
Designated Biologist	Lincoln Hulse NOREAS Inc. 949-302-8910	1

2.0 PROJECT DESCRIPTION

2.1 BACKGROUND DOCUMENTS

Project description information is contained within the following references and summarized below:

- California Energy Commission. 2007. Final Staff Assessment – Panoche Energy Center Application for Certification (06-AFC-5) Fresno County;
- California Energy Commission. 2015. Panoche Energy Center Amendment Proposal to Install Wastewater Storage Tank (06-AFC-5C); and
- Panoche Energy Center, LLC. 2007. Panoche Energy Center USFWS Biological Opinion (1-1-07-F-0255).

2.2 PROJECT DISCRIPTION AND LOCATION

PEC, a simple-cycle, natural gas-fired, 400-megawatt facility, was certified by the Energy Commission in its Decision on December 19, 2007, and began commercial operation on July 1, 2009. The facility is located in an unincorporated area approximately 15 miles southwest of the city of Mendota in western Fresno County, California. The Project site is approximately 50 miles west of the city of Fresno, 2 miles east of Interstate 5, southeast of the intersection of West Panoche Road and Davidson Avenue, and off the alignment of Davidson Avenue. The Project site is specifically located in the Southwest Quarter of Section 5, Township 15 South, Range 13 East, on the United States Geological Survey (USGS) Quadrangle map (Figure 1). The assessor's parcel number (APN) is 027-060-78S.

The proposed changes consist of enhanced design measures to accommodate and secure the operational capacity of the existing PEC wastewater injection process. PECL proposes to install three (3) storage tanks, ranging from 250,000 gallons to 500,000 gallons. The storage tanks would store wastewater during operational periods where the net wastewater production exceeds the injection well capacity (approximately 250 gallons per minute [gpm]). The proposed changes also include installation and operation of a permanent stand-by treatment system. The approximate capacity and dimensions of the Enhanced Wastewater System structures are as follows:

- 500,000-gallon Blowdown Collection Tank: 60 feet diameter by 24 feet high;
- 500,000-gallon Wastewater (RO Reject) Collection Tank: 60 feet diameter by 24 feet high;
- 250,000-gallon Permeate Collection Tank: 48 feet diameter by 20 feet high; and

- Enhanced Wastewater System Building: 120 feet long by 70 feet wide and approximately 20 feet high.

Construction of the Enhanced Wastewater System is projected to begin in mid July of 2015 and last for approximately 14 weeks. The workforce would vary depending on the month of construction and weather conditions. Major construction activities would include site preparation and minor grading, trenching for underground pipelines, installation of equipment, erection of above grade storage tanks and a structure to house treatment equipment.

2.3 EXISTING PROJECT SITE CONDITIONS

The Project site was historically arid sagebrush and native grass covered landscape. As a result of heavy agricultural and industrial use in the area, no native vegetation is present within the Project site or vicinity. The Project site is a depauperate landscape (i.e., bare ground, gravel and equipment storage locations all directly influenced by anthropogenic activities). Panoche Road is to the north of the plant site and the remainder of the Project site is surrounded by agriculture primarily consisting of apricot and pomegranate trees. The landform within the area is flat to slightly rolling topography, which allows for open, expansive views of several mountain ranges to the west of the valley. These include: the Panoche Mountains and Panoche Hills to the west; Ciervo Mountain and Tumey Hill to the south; and Sugarloaf and Ortigalita peaks to the northwest. The Project site elevation is approximately 420 feet above mean sea level and slopes gently down to the northeast at less than one percent grade.

2.4 PROJECT CONSTRUCTION SCHEDULE

Table 2-1 identifies the proposed schedule for each project element.

Table 2-1. Project Schedule

Project Element	Construction Period
Preconstruction Natural Resource Survey	Prior to July 15, 2015
Preconstruction Compliance Report	Prior to August 15, 2015
Start of Site Mobilization	July 15, 2015
Start Construction of Facility	July 15, 2015
Startup and Testing	October 17, 2015
Commercial Operation	November 21, 2015
Annual Compliance Report	Annually, 45 days following end of year
Post-construction Compliance Report	45 days post-construction

3.0 PEC TEAM, RESPONSIBILITIES, AND AGENCY CONTACT INFORMATION

3.1 PEC PROJECT TEAM

The Project biological team and contact information is listed below in Table 3-1.

Table 3-1. PEC Team Members and Contact Information

CEC CPM	Dale Rundquist California Energy Commission 916-651-2072
CEC Biologist	Ann Crisp California Energy Commission 916-651-3776
Construction Project Engineer	Bradley Florentin, PE Amec Foster Wheeler 970-403-0714
Designated Biologist	Lincoln Hulse NOREAS Inc. 949-302-8910
Biological Monitor(s)	David Fisher – NAES 951-233 3867 Jesse Gunnells – NAES 559-281-5731 Barry Lajoie - NAES 805-305-1776 Christina Capobianco – TIC 661-440-1879 Joseph Guzman – TIC 661-340-9312

3.2 RESPONSIBILITIES OF PROJECT BIOLOGICAL TEAM

This section describes the responsibilities for each member of the Project's biological team.

3.2.1 Compliance Project Manager (CPM)

The CPM, in concert with CEC staff, will oversee the compliance monitoring and will be responsible for:

1. Ensuring that the design, construction, operation, and closure of the project facilities are in compliance with the terms and a condition of the CEC's approved AFC (06-AFC-5C) and USFWS Biological Opinion (1-1-07-F-0255);
2. Resolving complaints;
3. Processing post-certification changes to the conditions of certification, project description, and ownership or operational control;
4. Documenting and tracking compliance filings; and,
5. Ensuring that the compliance files are maintained and accessible.

The CPM is the contact person for the CEC and will consult with appropriate responsible agencies and the CEC when handling disputes, complaints and amendments.

All Project compliance submittals are submitted to the CPM for processing. Where a submittal required by a condition of certification requires CPM approval, the approval will involve all appropriate staff and management.

The CEC has established a toll free compliance telephone number of 1-800-858-0784 for the public to contact the CEC about power plant construction or operation-related questions, complaints or concerns.

3.2.2 Construction Project Engineer

PECL retains final responsibility for compliance with implementation of all applicable mitigation measures and conditions. The PEC's Construction Project Engineer will ensure compliance with mitigation measures by ensuring that the agency-mandated conditions are part of contracts issued to the contractors.

It is the responsibility of PEC's staff to ensure that the general compliance conditions and the conditions of certification are satisfied. Failure to comply with any of the conditions of certification or the general compliance conditions may result in reopening of the case and revocation of CEC certification, an administrative fine, or other action as appropriate.

The Construction Project Engineer will act on the advice of the other members of the PEC Team to ensure conformance with mitigation measures and conditions. If directed by the Designated Biologist, Biological Monitor(s) or the CPM, the Construction Project Engineer will halt all construction activities to ensure that potentially significant biological resource impacts are avoided. The Designated Biologist will inform the project owner of any necessary remedial measures and when to resume construction. The Designated Biologist will also advise the CEC what remedial measures are recommended or have been instituted.

3.2.3 Designated Biologist and Biological Monitor(s)

The Designated Biologist shall perform, oversee, and/or supervise the following duties during any Project site or related facilities mobilization, ground disturbance, grading, construction, operation, and closure activities:

1. Advise the project owner's Construction Project Engineer and Operation Manager, Supervising Construction Engineer and Operations Engineer on the implementation of the biological resources related Conditions of Certification.
2. Be available to oversee, supervise, and / or conduct mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources such as special-status species or their habitat.
3. Be available to oversee, supervise, and / or perform the demarcation of sensitive biological resource areas and inspect these areas at appropriate intervals to ensure adequate compliance with regulatory terms and conditions.
4. Notify the project owner and the CPM of any noncompliance with biological resources related Condition of Certification.
5. Respond directly to inquiries of the CPM regarding biological resource compliance related issues.
6. Be available to oversee, supervise, and / or directly maintain written records of the tasks specified above and those included in the BRMIMP. Summaries of these records shall be submitted in the Monthly Compliance Report and the Annual Report; and
7. Be available to oversee, supervise, and directly train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training and all permits.
8. As asserted above, the Designated Biologist may be assisted by qualified Biological Monitor(s). The project owner's CEC approved Designated Biologist shall also be supported by Biological Monitors that have received CEC approval. Biological Monitor(s) will be trained by the Designated Biologist and be familiarity with the Conditions of Certification and the BRMIMP, WEAP and all permits.

The Designated Biologist and/or the Biological Monitor(s) shall:

1. Oversee, and/or supervise the following: Project related actions that have potential to adversely impact biological resources; and inspect active construction areas where wildlife may have become trapped. During construction oversee and/or supervise the inspection of any pipes or other structures that may contain San Joaquin kit fox. Oversee and/or supervise the inspection and installation of structures that prevent entrapment of wildlife or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (parking lots) for wildlife in harms way.
2. Require a halt to all activities when it is determined that there would be an adverse impact to sensitive biological resources if the activities are continued;

3. Inform the project owner, the Construction Project Engineer and the Operation Manager when to resume activities; and,
4. Notify the CPM if there is a halt of any activities, and advise the CPM of any corrective actions that have been taken, or will be instituted, as a result of the halt.

3.3 AGENCY CONTACT INFORMATION

Protection of biological resources falls under the jurisdiction of several agencies. The following list of contacts (Table 3-2) is provided in case agencies need to be contacted regarding specific resource information or advice on the implementation of mitigation measures. Table 3-2. Agency Contact Information

USFWS	Thomas Leeman	916-414-6600
CEC Compliance Project Manager	Dale Rundquist	916-651-2072
CEC Biologist	Ann Crisp	916-651-3776

4.0 COMPLIANCE MEASURES

4.1 Summary of Compliance Measures

Table 4-1 provides a summary of compliance and mitigation measures identified by the CEC in the Conditions of Certification and the aforementioned USFWS Biological Opinion. Biological impacts have been minimized to the extent practical by siting facilities away from sensitive habitats, within disturbed agriculture fields, and adjacent to existing roads. The Project will be entirely located in the original PEC construction laydown area, which is depauperate landscape (i.e., bare ground, gravel and equipment storage locations all directly influenced by anthropogenic activities).

Table 4-1. Summary of Conservation and Mitigation Measures

Condition	Description of Requirement	Verification	Responsible Party	Due Date
CEC Staff Assessment Conditional Measures				
BIO-1	The project owner shall assign a Designated Biologist to the project. The project owner shall submit the resume of the proposed Designated Biologist, with at least 3 references and contact information, to the Energy Commission Compliance Project Manager (CPM) for approval. The Designated Biologist must at least meet the following minimum qualifications: 1. Bachelor's Degree in biological sciences, zoology, botany, ecology, or a closely related field; and 2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society; and 3. At least one year of field experience with biological resources found in or near the Project site. In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM, that the proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the conditions of certification	The project owner shall submit the specified information at least 90 days prior to the start of any Project site (or related facilities) mobilization. No Project site or related facility activities shall commence until an approved Designated Biologist is available to be on Project site. If a Designated Biologist needs to be replaced, the specified information of the proposed replacement must be submitted to the CPM at least ten working days prior to the termination or release of the preceding Designated Biologist. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent Designated Biologist is proposed to the CPM for consideration.	Panoche Energy Center, LLC	No CEC submittal necessary since the DB has not changed.
BIO-2	The project owner shall ensure that the Designated Biologist performs the following during any site (or related facilities) mobilization, ground disturbance, grading, construction, operation, and closure activities. The Designated Biologist may be assisted by the approved Biological Monitor(s), but remains the contact for the project owner and CPM. 1. Advise the project owner's Construction and Operation Managers on the implementation of the biological resources Conditions of Certification; 2. Consult on the preparation of the Biological Resources Mitigation Implementation and Monitoring Plan, to be submitted by the project owner; 3. Be available to supervise, conduct and coordinate mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special status species or their habitat; 4. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions; 5. Inspect active construction areas where animals may have become	The Designated Biologist shall submit in the Monthly Compliance Report copies of all written reports and summaries that document biological resources activities. If actions may affect biological resources during operation a Designated Biologist shall be available for monitoring and reporting. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless their duties are ceased as approved by the CPM.	Panoche Energy Center, LLC	Monthly Compliance Report

Table 4-1. Summary of Conservation and Mitigation Measures

Condition	Description of Requirement	Verification	Responsible Party	Due Date
	trapped prior to construction commencing each day. At the end of the day, inspect for the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (i.e. parking lots) for animals in harm's way; 6. Notify the project owner and the CPM of any non-compliance with any biological resources Condition of Certification; 7. Respond directly to inquiries of the CPM regarding biological resource issues; 8. Maintain written records of the tasks specified above and those included in the BRMIMP. Summaries of these records shall be submitted in the Monthly Compliance Report and the Annual Report; and 9. Train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training and all permits.			
BIO-3	The project owner's CPM-approved Designated Biologist shall submit the resume, at least 3 references, and contact information of the proposed Biological Monitors to the CPM for approval. The resume shall demonstrate to the satisfaction of the CPM, the appropriate education and experience to accomplish the assigned biological resource tasks. Biological Monitor(s) training by the Designated Biologist shall include familiarity with the Conditions of Certification and the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), WEAP and all permits	The project owner shall submit the specified information to the CPM for approval at least 30 days prior to the start of any Project site (or related facilities) mobilization. The Designated Biologist shall submit a written statement to the CPM confirming that individual Biological Monitor(s) have been trained including the date when training was completed. If additional Biological Monitors are needed during construction, the specified information shall be submitted to the CPM for approval 10 days prior to their first day of monitoring activities.	Panoche Energy Center, LLC	At least 30 days prior to the start of any Project site (or related facilities) mobilization
			Designated Biologist	10 Days prior to first day of monitoring activities

Table 4-1. Summary of Conservation and Mitigation Measures

Condition	Description of Requirement	Verification	Responsible Party	Due Date
BIO-4	The project owner's Construction/Operation Manager shall act on the advice of the Designated Biologist and Biological Monitor(s) to ensure conformance with the biological resources Conditions of Certification. If required by the Designated Biologist and Biological Monitor(s), the project owner's Construction/ Operation Manager shall halt all Project site mobilization, ground disturbance, grading, construction, and operation activities in areas specified by the Designated Biologist. The Designated Biologist shall: 1. Require a halt to all activities in any area when determined that there would be an unauthorized adverse impact to biological resources if the activities continued; 2. Inform the project owner and the Construction/Operation Manager when to resume activities; and 3. Notify the CPM if there is a halt of any activities, and advise the CPM of any corrective actions that have been taken, or will be instituted, as a result of the work stoppage. If the Designated Biologist is unavailable for direct consultation, the Biological Monitor shall act on behalf of the Designated Biologist.	The project owner shall ensure that the Designated Biologist or Biological Monitor notifies the CPM immediately (and no later than the following morning of the incident, or Monday morning in the case of a weekend) of any non-compliance or a halt of any Project 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. Whenever corrective action is taken by the project owner, a determination of success or failure will be made by the CPM within five working days after receipt of notice that corrective action is completed, or the project owner will be notified by the CPM that coordination with other agencies will require additional time before a determination can be made.	Panoche Energy Center, LLC	Immediate CPM notification (no later than morning following violation)
BIO-5	The project owner shall develop and implement a CPM approved Worker Environmental Awareness Program (WEAP) in which each of its employees, as well as employees of contractors and subcontractors who work on the Project site or any related facilities during Project site mobilization, ground disturbance, grading, construction, operation and closure are informed about sensitive biological resources associated with the project. The WEAP must: 1. Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation in which supporting written material and electronic media is made available to all participants; 2. Discuss the locations and types of sensitive biological resources on the Project site and adjacent areas; 3. Present the reasons for protecting these resources; 4. Present the meaning of various temporary and permanent habitat protection measures; 5. Identify whom to contact if there are further comments and questions about the material discussed in the program; and 6. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.	At least 60 days prior to the start of any Project site (or related facilities) mobilization, the project owner shall provide to the CPM two (2) copies of the proposed WEAP and all supporting written materials and electronic media prepared or reviewed by the Designated Biologist and a resume of the person(s) administering the program. The project owner shall provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date. The signed training acknowledgement forms from construction shall be kept on file by the project owner for a period of at least six months after the start of commercial operation. During project operation, signed statements for active project operational personnel shall be kept on file for six months following the termination of an individual's employment.	Panoche Energy Center, LLC	At least 60 days prior to the start of any Project site (or related facilities) mobilization Monthly Compliance Report

Table 4-1. Summary of Conservation and Mitigation Measures

Condition	Description of Requirement	Verification	Responsible Party	Due Date
	The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist.			
BIO-6	The project owner shall submit two copies of the proposed Biological Resources Mitigation Implementation and monitoring Plan (BRMIMP) to the CPM (for review and approval) and to USFWS (for review and comment) and shall implement the measures identified in the approved BRMIMP. The BRMIMP shall be prepared in consultation with the Designated Biologist and shall identify:(See BIO-5)	The project owner shall provide the specified document at least 60 days prior to start of any Project site (or related facilities) mobilization. The CPM, in consultation with the USFWS 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 Project site and related facilities mobilization the revised BRMIMP shall be resubmitted to the CPM. The project owner shall notify the CPM no less than five working days before implementing any modifications to the approved BRMIMP to obtain CPM approval. Any changes to the approved BRMIMP must also be approved by the CPM and the USFWS to ensure no conflicts exist. Implementation of BRMIMP measures will be reported in the Monthly Compliance Reports by the Designated Biologist (i.e. survey results, construction activities that were monitored, species observed). Within thirty (30) days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction closure report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the project's site mobilization, ground disturbance, grading, and construction phases, and which mitigation and monitoring items are still outstanding.	Panoche Energy Center, LLC	At least 60 days prior to start of any Project site (or related facilities) mobilization

Table 4-1. Summary of Conservation and Mitigation Measures

Condition	Description of Requirement	Verification	Responsible Party	Due Date
BIO-7	The project owner shall incorporate into the permanent or unexpected permanent closure plan and the BRMIMP, measures that address the local biological resources. The planned permanent or unexpected permanent closure plan shall address the following biological resources related mitigation measures: 1. Removal of transmission conductors when they are no longer used and useful; 2. Removal of all power plant site facilities and related facilities; 3. Measures to restore wildlife habitat to promote the re-establishment of native plant and wildlife species; and 4. Revegetation of the plant site and other disturbed areas utilizing an appropriate seed mixture.	Draft permanent or unexpected closure measures shall be made part of the BRMIMP. At least 12 months prior to commencement of closure activities, the project owner shall address all biological resources related issues associated with facility closure, and provide final measures, in a Biological Resources Element. The Biological Resources Element shall be incorporated into the Facility Closure Plan and include a complete discussion of the local biological resources and proposed facility closure mitigation measures.	Panoche Energy Center, LLC	At least 12 months prior to commencement of closure activities
BIO-8	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 Project sites, and storage and parking areas to avoid identified sensitive resources; 2. Design, install and maintain transmission lines and all electrical components in accordance with the APLIC Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006 to reduce the likelihood of electrocutions of large birds; 3. Eliminate any California Exotic Pest Plants of Concern (CalEPPC) List A species from landscaping plans; 4. Prescribe a road sealant that is non-toxic to wildlife and plants; and 5. Design, install, and maintain facility lighting to prevent side casting of light towards wildlife habitat	All mitigation measures and their implementation methods shall be included in the BRMIMP. Implementation of the measures will be reported in the Monthly Compliance Reports by the Designated Biologist. Within thirty (30) days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying how measures have been completed.	Panoche Energy Center, LLC	BRMIMP and Monthly Compliance Report
BIO-9	The project owner shall implement the following measures to manage their construction Project site, and related facilities, in a manner to avoid or minimize impacts to the local biological resources. Some of the following measures were adopted from USFWS "Standardized Recommendations for Protection of SJKF Prior to or During Ground Disturbance" (1999 and 2011) 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	All mitigation measures and their implementation methods shall be included in the BRMIMP. Implementation of the measures will be reported in the Monthly Compliance Reports by the Designated Biologist. Within thirty (30) days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying how measures have been completed.	Panoche Energy Center, LLC	BRMIMP and Monthly Compliance Report

Table 4-1. Summary of Conservation and Mitigation Measures

Condition	Description of Requirement	Verification	Responsible Party	Due Date
	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 Project site; 5. Prohibit pets from being brought to the Project site; 6. Report all inadvertent deaths of special-status species to the appropriate project representative. Injured animals shall be reported to CDFW and the project owner shall follow instructions that are provided by CDFW. 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 CDFW for specific notification procedures; 7. If at any time a trapped or injured kit fox is discovered, USFWS, CDFW, and the Compliance Project Manager (CPM) shall be contacted. 8. Minimize use of rodenticides and herbicides in the project area and prohibit the use of chemicals and pesticides known to cause harm to amphibians. If rodent control must be conducted, zinc phosphide or an equivalent product shall be used; and 9. 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. 11. If night-time construction occurs, the speed limit restriction shall be reduced to 10 mph. 12. All excavated, steep-walled holes or trenches more than 2-feet deep shall be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. 10. New sightings of kit fox shall be reported to the CNDDB. A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the CPM and USFWS. 11. Preconstruction/pre-activity surveys for the San Joaquin kit fox (*Vulpes macrotis mutica*) shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San			

Table 4-1. Summary of Conservation and Mitigation Measures

Condition	Description of Requirement	Verification	Responsible Party	Due Date
	Joaquin kit fox. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol). Written results of preconstruction/pre-activity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities. 12. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.			
USFWS Biological Opinion Conservation Measures				
1	Project-related vehicles shall observe a 20-mph speed limit in all Project sites, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. To the extent possible, night-time construction should be minimized. Off-road traffic outside of designated Project sites should be prohibited.	All construction speed limits and off-road traffic outside designated Project sites will be monitored during construction activities. Night-time construction will be limited to the maximum extent feasible	Panoche Energy Center, LLC	Construction Duration
2	To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures under number 13 of this section must be followed.	All excavated, steep-walled holes or trenches more than 2 feet deep will be monitored during construction activities. Before holes or trenches are filled, they will be thoroughly inspected for trapped animals. The results of all monitoring activities will be documented in monthly and annual monitoring reports by the Designated Biologist.	Biological Monitor	Construction Duration

Table 4-1. Summary of Conservation and Mitigation Measures

Condition	Description of Requirement	Verification	Responsible Party	Due Date
3	Kit foxes are attracted to den-like structures such as pipes and may enter stored pipe becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction Project site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.	All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at the construction Project site for one or more overnight periods will be thoroughly inspected by the biological monitor for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. The results of all monitoring activities will be documented in monthly and annual monitoring reports by the Designated Biologist.	Biological Monitor	Construction Duration
4	All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at least once a week from a construction or Project site.	The construction Project site will be inspected for trash on a daily basis; trash containers will be inspected for weekly disposal.	Panoche Energy Center, LLC	Construction Duration
5	No firearms shall be allowed on the Project site.	The construction Project site will be monitored for firearms.	Panoche Energy Center, LLC	Construction Duration
6	To prevent harassment, mortality of kit foxes or destruction of dens by dogs or cats, no pets will be permitted on Project sites.	The construction Project site will be monitored for pets. The results of all monitoring activities will be documented in monthly and annual monitoring reports by the Designated Biologist.	Biological Monitor	Construction Duration
7	Use of rodenticides and herbicides in Project sites will be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of proven lower risk to kit fox.	Use of rodenticides and herbicides will be monitored. The results of all monitoring activities will be documented in monthly and annual monitoring reports by the Designated Biologist.	Biological Monitor	Construction Duration
8	A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped individual. The representative will be identified during the employee education program. The representative's name and telephone number shall be provided to the Service.	The Designated Biologist will function as the project representative. The results of all monitoring activities will be documented in monthly and annual monitoring reports by the Designated Biologist.	Designated Biologist	Construction Duration

Table 4-1. Summary of Conservation and Mitigation Measures

Condition	Description of Requirement	Verification	Responsible Party	Due Date
9	An employee education program shall be conducted. The program will consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and agency personnel involved in the project. The program will include the following: a description of the kit fox and its habitat needs; a report of the occurrence of kit fox in the Project site; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the above-mentioned people and anyone else who may enter the Project site. The program will be conducted in languages other than English, as appropriate.	All construction employees will be required to attend environmental awareness training and sign an environmental awareness training form. All forms will be collected and filed by the property owner. The project owner will provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date.	Panoche Energy Center, LLC	Construction Duration
10	Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. will be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but that after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a Project site-specific basis in consultation with the Service, California Department of Fish and Wildlife (CDFW), and revegetation experts.	The project will implement a CEC-approved Landscape Plan that includes recontouring, compaction of soils, spreading and grooming of topsoil, and planting of appropriate vegetation.	Panoche Energy Center, LLC	Following Construction Completion
11	In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for advice.	Any trapped animals will be promptly allowed to escape and will be documented by the biological monitor in monthly compliance reports.	Biological Monitor	Construction Duration
12	Any contractor, employee, or military or agency personnel who inadvertently kills or injures a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFW and the Service immediately in the case of a dead, injured or entrapped kit fox. The CDFW contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or biologist.	Any injured or killed kit fox will be immediately reported to CDFW, USFWS, Designated Biologist, and the CPM. Records of the occurrence will be maintained and submitted monthly by the Designated Biologist.	Designated Biologist	Construction Duration
13	The Sacramento Fish and Wildlife Office and CDFW will be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers given below. The CDFW contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.	Any injured or killed kit fox will be immediately reported to CDFW, USFWS, Designated Biologist, and the CPM. Records of the occurrence will be maintained and submitted monthly by the Designated Biologist.	Biological Monitor and Designated Biologist	Construction Duration

Table 4-1. Summary of Conservation and Mitigation Measures

Condition	Description of Requirement	Verification	Responsible Party	Due Date
14	Limits of grading and construction activities should be clearly delineated so that no vegetation outside the delineated grading limits would be disturbed by construction personnel or equipment. Project personnel will drive only on existing roads outside of construction limits.	Grading limits and approved vehicle routes will be clearly delineated and monitored by the Designated Biologist..	Biological Monitor	Construction Duration
15	PEC will implement the Best Management Practices identified in the project specific Storm Water Pollution Prevention Plan (SWPPP).	Best Management Practices identified in the project specific Storm Water Pollution Prevention Plan will be monitored by the Environmental Inspector	Panoche Energy Center, LLC	Construction Duration
16	In order to comply with the Migratory Bird Treaty Act and relevant sections of the CDFG Code (e.g., 3503, 3503.4, 3544, 3505, et seq.), any vegetation clearing would take place outside of the typical avian nesting season (i.e., February 1st - August 31st), to the maximum extent practical. If this is not possible, prior to ground-disturbing activities, construction, and so forth within the study area, a qualified biologist will conduct and submit a migratory nesting bird and raptor survey report. A qualified biologist is an individual with sufficient education and field experience in local California ecology and biology to adequately identify local plant and wildlife species. The survey shall occur not more than 72 hours prior to initiation of Project activities and any occupied passerines and/or raptor nests occurring within or adjacent to the study area will be delineated. To the maximum extent practicable, a minimum buffer zone from occupied nests will be maintained during physical ground-disturbing activities. Once nesting has been determined to cease, the buffer may be removed.	A migratory nesting bird and raptor survey report, if necessary, will be submitted to CDFW, USFWS and CPM by the Designated Biologist.	Designated Biologist	Within 72 hours prior to initiation of Project activities
17	PEC will retain the services of a Biological Monitor who will be responsible for overseeing project environmental protection measures. All encounters with listed species will be reported to the Biological Monitor, who will record the following information: species name; location (narrative and maps) and dates of observations; general condition and health, including injuries and state of healing; diagnostic markings, including identification numbers or markers; and locations moved from and to (if appropriate).	The Designated Biologist shall submit in the Monthly Compliance Report copies of all written reports and summaries that document biological resources activities. If actions may affect biological resources during operation a Designated Biologist shall be available for monitoring and reporting. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless their duties are ceased as approved by the CPM.	Designated Biologist	Monthly Compliance Report

5.0 WORKER ENVIRONMENTAL AWARENESS PROGRAM

PECL will develop and implement a CEC approved Worker Environmental Awareness Program (WEAP). The WEAP will consist of a document that identifies and discusses:

- The Project description;
- Biological resources with potential to occur within the Project site;
- Avoidance and minimization measures for these biological resources;
- Environmental rules for employees;
- Designated parking and avoidance areas;
- A description of the power plant and its associated facilities;
- The locations and types of sensitive biological resources on the Project site and adjacent areas;
- Information regarding species and habitat identification and occurrence;
- The natural history and endangerment factors for all sensitive species targeted for mitigation;
- The reasons for protecting these resources and the requirements of the federal and state Endangered Species Acts;
- A description of the temporary and permanent measures being taken at the Project site to protect habitat and therefore avoid harming sensitive resources;
- Construction limitations and activities;
- The responsibilities of workers, including reporting procedures if species are located during construction activities;
- Appropriate protocols for dealing with protected species when encountered in and around the Project site or its associated appurtenances (e.g., natural gas pipeline); and
- Who to contact if there are further comments and questions about the material discussed in the program.

Specific direction will be provided to workers on the following:

- Designated areas for driving and parking of vehicles;
- Speed limits;
- Control of litter by placing all trash in covered containers;
- Avoidance of areas around sensitive resources;
- Maintenance of erosion control devices;
- Reporting sightings of threatened and endangered species;

- Not approaching or feeding wildlife;
- Checking under vehicles for wildlife before starting engines;
- Checking in piping or similar structures with a diameter of greater than 4 inches for San Joaquin kit fox;
- Not bringing pets to the Project site; and
- Reporting all spills of gasoline, diesel fuel, lubricants, paints, and cleaners.

The above referenced information will be presented in a video along with cultural and paleontological resources training. Contractors, their employees, and other personnel working on the Project site will receive training on special- status species potentially occurring in the Project site. The program materials describing this information will be distributed to all PEC staff, employees, contractors, subcontractors, and anyone else who may enter the Project site. Each participant in the WEAP will sign a statement declaring that the individual understands and will abide by the guidelines set forth in the program materials. The person administering the program will also sign each statement. New workers will receive training upon employment.

6.0 PRE-CONSTRUCTION SURVEYS AND REPORTING

The primary use of pre-construction surveys for this Project will be to locate and/or relocate avoidance areas for sensitive species identified during the biological surveys for the aforementioned AFC. Pre-construction surveys of the proposed Project site and a maximum 200-foot buffer area will be performed no less than 14 days and no more than 30 days prior to commencement of construction activities. Pre-construction surveys will include a comprehensive pre-construction survey and mapping effort. Results of pre-construction surveys will be included in the initial monthly monitoring report and post-construction Compliance Report.

6.1 PRE-CONSTRUCTION SURVEYS

Pre-construction surveys for special status species (e.g., state and federal protected species, nesting passerines and raptors, and so forth) and their habitats will be conducted no less than 14 days and no more than 30 days prior to commencement of surface-disturbing activities during construction and during operation and maintenance of the project. Pre-construction surveys will include the following areas:

- Project site;
- Laydown and employee parking areas;
- Other areas subject to disturbance, if applicable.

6.1.1 Pre-construction Survey Data Forms

A data form will be developed to assist in the performance of pre-construction surveys and survey database. The Designated Biologist will maintain these forms and will provide copies to the CEC, and other appropriate agencies upon request. (Appendix A)

6.1.2 Pre-construction Survey Report

Pre-construction survey results will be included in the Monthly Biological Monitoring Report that will be sent to the CEC. A summary of these reports will also be included in the Post-construction Report. The pre-construction survey report will include descriptions of the following:

- Survey methodologies;
- Flagging and signage of construction areas and roads;
- Flagging of avoidance areas;
- Sensitive biological resources observed; and
- Impact avoidance measures implemented.

6.2 STAKING AND FLAGGING OF AVOIDANCE AREAS

Avoidance areas will be established for San Joaquin kit fox, or any other special status species (e.g., other species protected under state and/or federal Endangered Species Acts, Section 10 of the Migratory Bird Treaty Act, Fish and Game Code Sections [2080, 3500 *et seq*], etc.), if necessary. The perimeter of the avoidance areas will be staked with wooden stakes, roughly 3 feet high, and approximately 10 feet apart. Buffer zones will be utilized as needed to the maximum extent practical. Each stake will be flagged with brightly colored flagging. All project-related staking and flagging will be collected and removed following the construction phase of the Project. Avoidance criteria for sensitive resources are shown in Table 6-1.

Table 6-1. Avoidance Criteria for Sensitive Resources

Biological Resource	Radius of Resource Avoidance Area
Kit fox known or potential den	To the maximum extent practical - 100 feet
Kit fox natal/pupping den	To be determined through USFWS consultation
Nesting birds during breeding season (Feb. 1 through Aug. 31)	To the maximum extent practical - 100 feet
Raptors	To the maximum extent practical - 100 feet

Each avoidance area is determined by the approximate radius distances presented in Table 6-1 and measured outward from the biological resource. The avoidance areas will be marked no less than 5 days before the start of construction in areas adjacent to the resource. Avoidance areas will be maintained until construction activities are completed, or the potential for adverse impact to the resource has been minimized within the Project site, and then will be removed. If specified avoidance areas cannot be established for any reason, the CEC and other appropriate resource agencies will be contacted for guidance prior to ground-disturbing activities on or near the subject resource.

7.0 ENVIRONMENTAL COMPLIANCE MONITORING AND REPORTING

This section outlines the biological compliance monitoring and reporting required during: construction and Operation and Maintenance (O&M) of the PEC; and remediation of noncompliance issues.

7.1 COMPLIANCE MONITORING

Biological monitoring will be required during initial ground disturbing activates; when excavation is occurring or when excavations will remain open; when construction materials are deployed for installation; when construction traffic is heavy; and/or when sensitive resources are present.

In these instances, biological inspections will:

- Evaluate excavations for trapped wildlife before the onset of construction, and prior to excavation being filled. Any wildlife discovered within an excavation will be allowed to escape voluntarily before construction activities resume, or will be removed from the trench or hole by the Designated Biologist or Biological Monitor;
- Inspect construction pipes, poles, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction Project site for one or more overnight periods before the subject pipe is subsequently buried, capped, or otherwise used or moved in any way;
- Report all inadvertent deaths of special-status species to the appropriate project representative. Injured animals shall be reported to the appropriate agencies and the PEC shall follow instructions that are provided by the appropriate agencies. 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.
- Install temporary fencing and provide wildlife escape ramps for construction areas that contain steep walled holes or trenches if outside of an approved fence. Before such holes are filled, they should be inspected by the Designated Biologist or Biological Monitor.

Although the following inspections will be performed any time a Biological Monitor or the Designated Biologist is on the Project site, evaluations will be conducted at least once a week to ensure that:

- Avoidance areas are flagged and fencing remains in place where needed. In addition, inspection will ensure that fencing and flagging has been removed in areas where construction is completed;
- Construction area boundaries are clearly delineated by fencing or staking and flagging;
- Speed limit signs are in place and accurate;

- Prohibit non-security related firearms or weapons from being brought to the Project site;
- Equipment storage and parking are confined to the designated areas;
- All food-related trash items are being disposed of in appropriate containers and are regularly removed from the Project site;
- Deliberate feeding of wildlife is not occurring;
- Pets are not on the Project site; and
- Rodenticide or herbicides are not to be used during construction.

7.1.1 During Construction Survey Data Forms

A data form will be developed to assist the Biological Monitor(s) and Designated Biologist during construction. The Designated Biologist will maintain these forms and will provide copies to the CEC, and other appropriate agencies upon request. These forms will include the following:

- Name of monitor;
- Weather/time/date information;
- Construction activities on-going within the Project site;
- Location of construction activities within the Project site;
- Avoidance measures used;
- Species observed;
- Compliance issues, if any;
- Recommendations for next monitoring inspection; and
- Other pertinent information.

7.1.2 During Construction Monthly Reports

Monthly Monitoring Reports will be prepared by the Designated Biologist.

These reports will include the following information:

- Areas and activities monitored;
- Incident Reports and resolution of each reported situation;
- Released animals and their locations;
- Construction and monitoring activities planned for the next month; and
- Number of persons who have completed environmental training in the month prior and a running total of all persons receiving environmental training.

The Designated Biologist will prepare and submit an Annual Compliance Report to the CEC, 45 days after the anniversary date of the PEC start of construction. In addition, the Designated Biologist

will prepare and submit within 45 calendar days of completion of the project a post-construction compliance report. These reports will include the following information:

- Dates of project construction;
- Data concerning success and deficiencies in meeting project mitigation measures, and an explanation of any failure to meet such measures;
- Known occurrences of incidental take;
- The effects of construction activities on state or federally listed species and habitats;
- The specific number of habitat acres disturbed;
- Description of specific sensitive resources impacted (e.g., number of kit foxes, nesting birds, raptors, etc.); and,
- Description of monitoring of released and relocated animals.

A final post construction compliance report will be prepared by the Designated Biologist and ad submitted to the CEC within 30 calendar days of the completion of construction activity. This report shall detail the following:

- Dates that construction occurred;
- Pertinent information concerning the success of the project in meeting compensation and other conservation measures;
- An explanation of failure to meet such measures, if any;
- Known project effects on federally listed species, if any;
- Occurrences of incidental take of federally-listed species, if any; and
- Other pertinent information

7.2 CORRECTIVE ACTIONS

Remediation of noncompliance issues will be discussed with PEC staff. The Designated Biologist will take every opportunity to discuss sensitive species biology, protection, and compliance with contracting personnel.

7.3 REPORTING OF INJURIES TO WILDLIFE

Any employee who inadvertently kills or injures a kit fox, or who finds a kit fox dead, injured, or entrapped is required to report the incident immediately to the Designated Biologist (or Biological Monitor. In instances of entrapped listed animals, escape ramps or structures will be immediately installed to allow the subject animal(s) to escape unimpeded.

In the case of injured animals, the Designated Biologist (or Biological Monitor) will immediately notify CDFW State Dispatch at (916)-445-0045 and the USFWS. The Designated Biologist will follow

the instructions of resource professionals for the care of the injured animal. In the case of dead threatened or endangered animals, the Designated Biologist (or designated representative) will notify the appropriate resource agency via electronic mail or telephone within three (3) working days of the finding of any such animal(s). Notification will include the date, time, location, species, and circumstances of the incident.

USFWS	Chief of Endangered Species Division (Central Valley) Sacramento USFWS Office, 2800 Cottage Way, Room W-2605, Sacramento, CA 95825-1846	(916) 414-6600
USFWS	Scott Heard, Resident Agent in Charge of Law Enforcement Division	(916) 414-6660
CEC CPM	Dale Rundquist	(916)-651-2072
CDFW	State Dispatch Mr. Paul Hoffman	(916)-445-0045 (530)-934-9309

8.0 POST-CONSTRUCTION CLEANUP AND LANDSCAPING

Upon completion of construction, all areas subject to ground disturbances, including storage and staging areas, temporary roads installed by the Project will be cleaned up and reclaimed to pre-construction conditions to the maximum extent practical. The cleanup will consist of removal of all stakes, lath, flagging, barrels, cans, drums, accidental spills, and any other refuse generated by construction.

9.0 MEASURES REQUIRED DURING PROJECT OPERATION

Impacts to biological resources are not expected from the operation and maintenance of the PEC.

9.1 MEASURES REQUIRED DURING PROJECT OPERATION

The following mitigation measures will be implemented to reduce potential impacts to biological resources:

- New personnel to the Project site or contractors that have not received training regarding sensitive biological resources in the project vicinity will be trained within 15 days of arrival on the job Project site. In addition, all workers will receive training in sensitive biological resources annually. Upon completion of the training, employees will sign a form stating that they attended the program and understand all project-related mitigation measures. These forms will be filed at PEC offices.
- All food-related trash items will be disposed of in closed containers and removed at least once a week from the Project site.
- There is no deliberate feeding of wildlife.
- No firearms will be allowed on the Project site.
- No pets will be allowed on the Project site.

9.2 RECORDKEEPING

The frequency and record keeping standards described for project construction activities will also be followed for maintaining employee training records and environmental compliance reports during operations.

10.0 MEASURES REQUIRED FOR CLOSURE

Both temporary and permanent closure scenarios are addressed in this section. Permanent closure is defined as the end of the facility's operational phase. Temporary closures may be necessary in the event of disastrous events, unfavorable economic conditions, or other circumstances.

10.1 PERMANENT CLOSURE

A permanent closure plan will be prepared by PEC staff at least 12 months prior to closure activities. It will include take avoidance and mitigation requirements applicable to the sensitive biological resources in the Project site at that time. The plan will also include the reclamation of areas where facilities would be removed, including transmission conductors and all other PEC facilities in order to restore wildlife habitat and promote the re-establishment of wildlife species and plants to pre-construction conditions.

10.2 TEMPORARY CLOSURE

In the case of temporary closure, measures to protect biological resources would be needed only if there were surface disturbances or releases of harmful materials. If such an event occurs, PEC staff will consult with the responsible agencies to plan cleanup and mitigation of impacts to biological resources.

10.3 REPORTING OF CLOSURE ACTIVITIES

Compliance reporting for closure activities will be submitted to the CPM within thirty days after completion of the project and will include the following:

- BRMIMP items that have been completed;
- A summary of all modifications to mitigation measures made during the Project's mobilization, ground disturbance, grading, and construction phases; and
- Any outstanding mitigation and monitoring items

11.0 REFERENCES

California Energy Commission. 2007. Presiding Member's Proposed Decision - Panoche Energy Center Application for Certification (06-AFC-5) Fresno County.

Leeman 2015. Leeman, Thomas, San Joaquin Valley Branch Chief, U.S. Fish and Wildlife Service, Sacramento Office, Personal communication with Ann Crisp of California Energy Commission, January 12, 2015.

Panoche Energy Center, LLC. 2015, Panoche Energy Center Project Kit Fox Clearance Survey Memorandum, dated January 26, 2015.

Panoche Energy Center, LLC. 2007. *Panoche Energy Center Application for Certification* (06-AFC-5).

USFWS. 1999, Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance, U.S. Fish and Wildlife Service, Sacramento, California.

USFWS. 2011, Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance, U.S. Fish and Wildlife Service, Sacramento, California.

Figure 1 Panoche Energy Center General Vicinity Map

Panoche Creek

W Panoche Rd

Aqueduct

5

Panoche Energy Center

Enhanced Wastewater System Site

Existing Substation

Existing Transmission Line

W Panoche Rd

5

General Project Vicinity

Panoche Energy Center
Firebaugh, CA

1 inch = 2,000 feet (0 500 1,000 2,000 Feet) N	Drawn: BLH	Project No. 32710176
	Date: 1/9/2015	

Document Path: G:\Project\GIS\Projects\Panoche Energy Center\GeneralProjectVicinity.mxd

Figure 1

APPENDIX A
Monitoring Form

Panoche Energy Center Weekly Biological Monitoring Form

Contractor = TIC

Week of:			**Monitor's) Present**	

Description of Construction Activities For the Week

Species Detected:

SJKF Observed or sign observed ? Yes____ No____ SJKF activity disrupted ? Yes_____ No___ If yes, describe:

Other biological compliance issues ? Yes____ No____ If yes, describe:

Actions directed by the biologist to the contractor to minimize impacts? Yes_____ No_____ If Yes, describe:

Compliance Observations and Issues

Noise

Trash

Work Limits

Other Notes:

Phone Numbers	**Signature**
NOREAS: Lincoln Hulse 949-467-9116, Sage: Maggie Fitzgerald 949-514-5655, CEC: Dale Rundquist 916-651-2072, PEC Representative: Rob Agency Contact Information is located on Page 2	

Agency Contact Informatin

USFWS	Chief of Endangered Species Division (Central Valley) Sacramento USFWS Office, 2800 Cottage Way, Room W-2605, Sacramento, CA 95825-1846	(916) 414-6600
USFWS	Thomas Leeman, Resident Agent in Charge of Law Enforcement Division	(916) 414-6660
CEC CPM	Dale Rundquist	(916) 654-4228
CDFG	State Dispatch Ron Schlorff	(916) 654-4262

Appendix 3D

(HAZ-1)

PANOCHE ENERGY CENTER (CERSID: 10153959)

Facility Information Submitted Feb 22, 2019

Submitted on 2/22/2019 8:21:49 AM by *Barry Lajoie* of PANOCHE ENERGY CENTER LLC (FIREBAUGH, CA)

- Business Activities
- Business Owner/Operator Identification

Guidance Messages

- **Warning:**
  1. Business Activities - The Facility Name for CERSID: 10153959 has changed from: 'PANOCHE ENERGY CENTER' to 'PANOCHE ENERGY CENTER LLC '.
  2. Business Activities - The Address for CERSID: 10153959 has changed from: '43883 W Panoche Rd, FIREBAUGH, CA 93622' to '43883 W PANOCHE RD , FIREBAUGH , CA 93622-9720'.

Hazardous Materials Inventory Submitted Feb 22, 2019

Submitted on 2/22/2019 8:21:49 AM by *Barry Lajoie* of PANOCHE ENERGY CENTER LLC (FIREBAUGH, CA)

- Hazardous Material Inventory (75)
- Site Map (Official Use Only)
  - *PEC HMBP - MAP 4A - Cooling Tower & Wastewater Injection Skid Area* (Adobe PDF, 217KB)
  - *PEC HMBP - MAP 1 - Site Map* (Adobe PDF, 288KB)
  - *PEC HMBP - MAP 5B - Fuel Gas Compressor Area Detail* (Adobe PDF, 410KB)
  - *PEC HMBP - MAP 7B - Container Storage Yard & Spare Transformer Area Detail* (Adobe PDF, 414KB)
  - *PEC HMBP - MAP 6 - Aqueous Ammonia Tank & Propane Tank* (Adobe PDF, 217KB)
  - *PEC HMBP - MAP 2A - Combustion Turbine Area* (Adobe PDF, 215KB)
  - *PEC HMBP - MAP 8 - Injection Wells* (Adobe PDF, 214KB)
  - *PEC HMBP - MAP 1A - Fire Protection System* (Adobe PDF, 256KB)
  - *PEC HMBP - MAP 2B - Combustion Turbine Area Detail* (Adobe PDF, 839KB)
  - *PEC HMBP - MAP 9A - Enhanced Wastewater System (EWS) Area* (Adobe PDF, 214KB)
  - *PEC HMBP - MAP 3B - Water Treatment Building Area Detail* (Adobe PDF, 573KB)
  - *PEC HMBP - MAP 5A - Fuel Gas Compressor Area* (Adobe PDF, 215KB)
  - *PEC HMBP - MAP 3A - Water Treatment Building Area* (Adobe PDF, 216KB)
  - *PEC HMBP - MAP 4B - Cooling Tower & Wastewater Injection Skid Area Detail* (Adobe PDF, 755KB)
  - *PEC HMBP - MAP 7A - Container Storage Yard & Spare Transformer Area* (Adobe PDF, 215KB)
  - *PEC HMBP - MAP 9B - Enhanced Wastewater System (EWS) Area Detail* (Adobe PDF, 119KB)

Site Identification

PANOCHE ENERGY CENTER LLC
43883 W PANOCHE RD
FIREBAUGH , CA 93622-9720
County
Fresno

CERS ID
10153959
EPA ID Number
CAL000336991

Submittal Status

Submitted on 2/22/2019 by *Barry Lajoie* of PANOCHE ENERGY CENTER LLC (FIREBAUGH, CA)

Hazardous Materials

Does your facility have on site (for any purpose) at any one time, hazardous materials at or above 55 gallons for liquids, 500 pounds for solids, or 200 cubic feet for compressed gases (include liquids in ASTs and USTs); or is regulated under more restrictive inventory local reporting requirements (shown below if present); or the applicable Federal threshold quantity for an extremely hazardous substance specified in 40 CFR Part 355, Appendix A or B; or handle radiological materials in quantities for which an emergency plan is required pursuant to 10 CFR Parts 30, 40 or 70?	**Yes**

Underground Storage Tank(s) (UST)

Does your facility own or operate underground storage tanks?	**No**

Hazardous Waste

Is your facility a Hazardous Waste Generator?	**Yes**
Does your facility treat hazardous waste on-site?	**No**
Is your facility's treatment subject to financial assurance requirements (for Permit by Rule and Conditional Authorization)?	**No**
Does your facility consolidate hazardous waste generated at a remote site?	**No**
Does your facility need to report the closure/removal of a tank that was classified as hazardous waste and cleaned on-site?	**No**
Does your facility generate in any single calendar month 1,000 kilograms (kg) (2,200 pounds) or more of federal RCRA hazardous waste, or generate in any single calendar month, or accumulate at any time, 1 kg (2.2 pounds) of RCRA acute hazardous waste; or generate or accumulate at any time more than 100 kg (220 pounds) of spill cleanup materials contaminated with RCRA acute hazardous waste.	**No**
Is your facility a Household Hazardous Waste (HHW) Collection site?	**No**

Excluded and/or Exempted Materials

Does your facility recycle more than 100 kg/month of excluded or exempted recyclable materials (per HSC 25143.2)?	**No**
Does your facility own or operate ASTs above these thresholds? Store greater than 1,320 gallons of petroleum products (new or used) in aboveground tanks or containers.	**Yes**
Does your facility have Regulated Substances stored onsite in quantities greater than the threshold quantities established by the California Accidental Release prevention Program (CalARP)?	**Yes**

Additional Information

Panoche Energy Center is subject to California RMP requirements (level 2) due to the storage and use of up to 19,000 gallons of 19% aqueous ammonia.

Facility/Site

PANOCHE ENERGY CENTER LLC
43883 W PANOCHE RD
FIREBAUGH , CA 93622-9720

CERS ID
10153959

Submittal Status

Submitted on 2/22/2019 by *Barry Lajoie* of PANOCHE ENERGY CENTER LLC (FIREBAUGH, CA)

Identification

Panoche Energy Center

Operator Phone	Business Phone	Business Fax
(559) 659-2270	(559) 659-2270	

Beginning Date	Ending Date	
Dun & Bradstreet	**SIC Code**	**Primary NAICS**
806340506	4911	221112

Facility/Site Mailing Address

43883 W PANOCHE RD
FIREBAUGH , CA 93622-9720

Primary Emergency Contact

David Fisher
Title
Plant Manager

Business Phone	24-Hour Phone	Pager Number
(559) 659-2270	(951) 233-3867	

Owner

PANOCHE ENERGY CENTER LLC
(559) 659-2270
43883 West Panoche Road
FIREBAUGH , CA 93622-9720

Secondary Emergency Contact

Control Room
Title
Control Room Operator

Business Phone	24-Hour Phone	Pager Number
(559) 659-2529	(559) 659-2529	

Billing Contact

Nikki Chatham
(559) 659-2270 nikki.chatham@naes.com
43883 West Panoche Road
Firebaugh, CA 93622

Environmental Contact

Barry Lajoie
(559) 659-2270 barry.lajoie@naes.com
43883 West Panoche Road
Firebaugh, CA 93622

Name of Signer	Signer Title	Document Preparer
David Fisher	Plant Manager	Barry Lajoie

Additional Information

Locally-collected Fields

Some or all of the following fields may be required by your local regulator(s).

Property Owner

Panoche Energy Center, LLC
Phone
(559) 659-2270
Mailing Address
43883 West Panoche Road
Firebaugh, CA 93622

Assessor Parcel Number (APN)

Number of Employees
12

Facility ID
FA0280871

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Combustion Turbine Area: Switch Yard (High Yard Building)

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Corrosive, Water Reactive, Class 2	**Lead Acid Batteries** CAS No Map: Map 2B	**Gallons** State: Liquid Type: Mixture	**72** Storage Container: Other Days on Site: 365	**1.2**	72 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Sulfuric Acid	40 %	✓	7664-93-9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Combustion Turbine Area: Aqueous Ammonia Storage Tank

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Toxic, Corrosive	**Aqueous Ammonia (19%)** CAS No 7664-41-7 Map: Map 2B	**Pounds** State Liquid Type Mixture	**147345** Storage Container Aboveground Tank Days on Site: 365	**147345**	85000 Pressue Ambient Temperature Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation - Health Specific Target Organ Toxicity	Ammonia	19 %	✓	7664-41-7 7664-41-7 7664-41-7 7664-41-7 7664-41-7

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Combustion Turbine Area: CT 1-4 GSU and CT2&3 4160KV Transformers

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
	Transformer Insulating Oil	**Gallons**	**42357**	**12500**	42357	0	- Health Aspiration Hazard	Distillate (petroleum), hydrotreated light naphthenic	100 %		64742-53-6
	CAS No	State: Liquid	Storage Container: Other		Pressue: Ambient	Waste Code	- Health Hazard Not Otherwise Classified	Distillate (petroleum), hydrotreated light paraffinic	50 %		64742-55-8
Combustible Liquid, Class III-B	Map: Map 2B	Type: Mixture	Days on Site: 365		Temperature: Ambient			Lubricating oils (petroleum), C15-C30, hydrotreated neutral oil based	50 %		72623-86-0
								2,6-di-tert-butyl-p-cresol	0 %		128-37-0

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Combustion Turbine Area: CT 1-4 SLO Tanks

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
	Mobil Jet II Oil	**Gallons**	**708**	**177**	708	100	- Health Hazard	Tricresyl Phosphate	3 %		1330-78-5
Combustible Liquid, Class III-B	CAS No	State: Liquid	Storage Container: Other		Pressue: Ambient	Waste Code: 221	Not Otherwise Classified	Alkylated diphenyl amines	5 %		68411-46-1
	Map: Map 2B	Type: Mixture	Days on Site: 365		Temperature: > Ambient			1-Naphthylamine, n-phenyl	1 %		90-30-2

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Combustion Turbine Area: CT1 CEMS Shelter

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 2.2 - Nonflammable Gases	**CEMS Calibration Gas Mixture**	**Cu. Feet**	**864**	**168**	500	0	- Physical Gas Under Pressure - Health Simple Asphyxiant - Health Hazard Not Otherwise Classified	Nitrogen	99 %		124-38-0
								Nitrogen Oxide (NOx)	1 %		124-38-0
								Carbon Monoxide (CO)	1 %		124-38-0
											124-38-0
											124-38-0
	CAS No	State: Gas	Storage Container: Cylinder		Pressue: > Ambient	Waste Code					
	Map: Map 2B	Type: Mixture	Days on Site: 365		Temperature: Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location **Combustion Turbine Area: CT1 Fire Supression System**

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 2.2 - Nonflammable Gases	**Carbon Dioxide** CAS No 124-38-9 Map: Map 2B	**Cu. Feet** State Gas Type Pure	**17460** Storage Container Cylinder Days on Site: 365	**873**	17460 Pressue > Ambient Temperature Ambient	0 Waste Code	- Physical Gas Under Pressure - Health Simple Asphyxiant - Health Hazard Not Otherwise Classified				

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location **Combustion Turbine Area: CT1-4 Auxilliary Compartments**

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
	Mobil DTE 25 (Hydraulic Fluid)	**Gallons**	**200**	**50**	200	200		2,6-Di-Tert-Butyl-P-Cresol	1 %		128-37-0
	CAS No	State: Liquid	Storage Container: Other		Pressue: Ambient	Waste Code		Naphthalenesulfonic Acid, Dinonyl -, Calcium Salt	1 %		128-37-0
Combustible Liquid, Class III-B	Map: Map 2B	Type: Mixture	Days on Site: 365		Temperature: Ambient	221					128-37-0
											128-37-0
											128-37-0

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Combustion Turbine Area: CT2 CEMS Shelter

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 2.2 - Nonflammable Gases	**CEMS Calibration Gas Mixture**	**Cu. Feet**	**864**	**168**	500	0	- Physical Gas Under Pressure - Health Simple Asphyxiant - Health Hazard Not Otherwise Classified	Nitrogen	99 %		124-38-9
	CAS No	State: Gas	Storage Container: Cylinder		Pressue: > Ambient	Waste Code		Nitrogen Oxide (NOx)	1 %		124-38-9
	Map: Map 2B	Type: Mixture	Days on Site: 365		Temperature: Ambient			Carbon Monoxide (CO)	1 %		124-38-9
											124-38-9
											124-38-9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location **Combustion Turbine Area: CT2 Fire Supression System**

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 2.2 - Nonflammable Gases	**Carbon Dioxide** CAS No 124-38-9 Map: Map 2B	**Cu. Feet** State Gas Type Pure	**17460** Storage Container Cylinder Days on Site: 365	**873**	17460 Pressue > Ambient Temperature Ambient	0 Waste Code	- Physical Gas Under Pressure - Health Simple Asphyxiant - Health Hazard Not Otherwise Classified				

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Combustion Turbine Area: CT3 CEMS Shelter

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 2.2 - Nonflammable Gases	**CEMS Calibration Gas Mixture**	**Cu. Feet**	**864**	**168**	500	0	- Physical Gas Under Pressure - Health Simple Asphyxiant - Health Hazard Not Otherwise Classified	Nitrogen	99 %		124-38-9
	CAS No	State: Gas	Storage Container: Cylinder		Pressue: > Ambient	Waste Code		Nitrogen Oxide (NO)	1 %		124-38-9
	Map: Map 2B	Type: Mixture	Days on Site: 365		Temperature: Ambient			Carbon Monoxide (CO)	1 %		124-38-9
											124-38-9
											124-38-9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location **Combustion Turbine Area: CT3 Fire Supression System**

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 2.2 - Nonflammable Gases	**Carbon Dioxide** CAS No 124-38-9 Map: Map 2B	**Cu. Feet** State Gas Type Pure	**17460** Storage Container Cylinder Days on Site: 365	**873**	17460 Pressue > Ambient Temperature Ambient	0 Waste Code	- Physical Gas Under Pressure - Health Simple Asphyxiant - Health Hazard Not Otherwise Classified				

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Combustion Turbine Area: CT4 CEMS Shelter

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 2.2 - Nonflammable Gases	**CEMS Calibration Gas Mixture**	**Cu. Feet**	**864**	**168**	500	0	- Physical Gas Under Pressure - Health Simple Asphyxiant - Health Hazard Not Otherwise Classified	Nitrogen	99 %		124-38-9
	CAS No	State: Gas	Storage Container: Cylinder		Pressue: > Ambient	Waste Code		Nitrogen Oxide (NO)	1 %		124-38-9
	Map: Map 2B	Type: Mixture	Days on Site: 365		Temperature: Ambient			Carbon Monoxide	1 %		124-38-9
											124-38-9
											124-38-9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location **Combustion Turbine Area: CT4 Fire Supression System**

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 2.2 - Nonflammable Gases	**Carbon Dioxide** CAS No 124-38-9 Map: Map 2B	**Cu. Feet** State Gas Type Pure	**17460** Storage Container Cylinder Days on Site: 365	**873**	17460 Pressue > Ambient Temperature Ambient	0 Waste Code	- Physical Gas Under Pressure - Health Simple Asphyxiant - Health Hazard Not Otherwise Classified				

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Combustion Turbine Area: MLO Storage Tanks 1 - 4

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
Combustible Liquid, Class III-B	**Mobil DTE Oil Light (Mineral Lube Oil)**	Gallons	**33480**	**8370**	33480	1000		2,6-Di-Tert-Butylphenol	1 %		128-39-2
											128-39-2
											128-39-2
											128-39-2
											128-39-2

State: Liquid
Storage Container: Other
Pressue: Ambient
Waste Code: 221
CAS No
Type: Mixture
Days on Site: 365
Temperature: Ambient
Map: Map 2B

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Combustion Turbine Area: PCM 1 through 4 (north side of each building)

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Corrosive, Water Reactive, Class 2	**Lead Acid Batteries** CAS No Map: Map 2B	**Gallons** State: Liquid Type: Mixture	**1526** Storage Container: Other Days on Site: 365	**2.8**	1526 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Sulfuric Acid	40 %	✓	7664-93-9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location **Combustion Turbine Area: Turbine Wash Water Tanks 1-4**

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
	Turbine Wash Water (Non-Hazardous Waste Water)	**Gallons**	**4800**	**1200**	600	20000		Water	100 %		
								Surfactant	1 %		
	CAS No	State: Liquid	Storage Container: Belowground Tank		Pressue: Ambient	Waste Code					
	Map: Map 2B	Type: Mixture	Days on Site: 90		Temperature: Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location **Container Storage Yard Area**

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
Combustible Liquid, Class III-B	**Transformer Insulating Oil** CAS No Map: Map 7B	**Gallons** State: Liquid Type: Mixture	**8300** Storage Container: Other Days on Site: 365	**8300**	8300 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Health Aspiration Hazard - Health Hazard Not Otherwise Classified	Distillate (petroleum) hydrotreated light naphthenic Distillate (petroleum), hydrotreated light paraffinic Lubricating Oils (petroleum), C15-C30 hdyrotreated neutral oil based 2,6-di-tert-butyl-p-cresol	100 % 50 % 50 % 0 %		64742-53-6 64742-55-8 72623-86-0 128-37-0
Combustible Liquid, Class III-B	**Mobil DTE Oil Light (Mineral Lube Oil)** CAS No Map: Map 7A	**Gallons** State: Liquid Type: Mixture	**330** Storage Container: Steel Drum Days on Site: 365	**55**	165 Pressue: Ambient Temperature: Ambient	0 Waste Code		2,6-Di-Tert-Butylphenol	1 %		128-39-2 128-39-2 128-39-2 128-39-2 128-39-2
	Conntect 6000 CAS No Map: Map 7A	**Gallons** State: Liquid Type: Mixture	**220** Storage Container: Plastic/Non-metalic Drum Days on Site: 365	**55**	110 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Ethylene Glycol Monobutyl Ether Ethoxylated Alcohols (C9-C11) Deionized Water	20 % 40 % 70 %		111-76-2 68439-46-3 7732-18-5
Combustible Liquid, Class III-B	**Mobil DTE 25 (Hydraulic Fluid)** CAS No Map: Map 7A	**Gallons** State: Liquid Type: Mixture	**330** Storage Container: Steel Drum Days on Site: 365	**55**	165 Pressue: Ambient Temperature: Ambient	0 Waste Code		2,6-Di-Tert-Butyl-P-Cresol Naphthalenesulfonic Acid, Dnonyl -,Calcium Salt	1 % 1 %		128-37-0 128-37-0 128-37-0 128-37-0 128-37-0
DOT: 2.2 - Nonflammable Gases	**Carbon Dioxide** CAS No 124-38-9 Map: Map 7A	**Cu. Feet** State: Gas Type: Pure	**8730** Storage Container: Cylinder Days on Site: 365	**873**	8730 Pressue: > Ambient Temperature: Ambient	0 Waste Code	- Physical Gas Under Pressure - Health Simple Asphyxiant				

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location **Cooling Tower & Waste Water Filtration Area**

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Combustible Liquid, Class III-B, Corrosive	**Nalco 3D TRASAR 3DT138: Geothermal Scale Inhibitor** CAS No Map: Map 4B	**Gallons** State: Liquid Type: Mixture	**405** Storage Container: Aboveground Tank Days on Site: 365	**405**	250 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Skin Corrosion Irritation - Health Respiratory Skin Sensitization - Health Serious Eye Damage Eye Irritation	Poly(Maleic Acid) (3-methylphenyl) Methly Butanedioic Acid Maleic Acid (4-methylphenyl) Methul Butanoic Acid	30 % 5 % 5 % 5 %		26099-09-2 26099-09-2 26099-09-2 26099-09-2 26099-09-2
DOT: 8 - Corrosives (Liquids and Solids) Corrosive, Combustible Liquid, Class III-A	**Nalco EC-1304A: Geothermal Corrosion Inhibitor** CAS No Map: Map 4B	**Gallons** State: Liquid Type: Mixture	**405** Storage Container: Aboveground Tank Days on Site: 365	**405**	350 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Skin Corrosion Irritation - Health Respiratory Skin Sensitization - Health Serious Eye Damage Eye Irritation	Thioglycolic Acid Quaternary Ammonium Compounds Imidazoline Salts	5 % 5 % 10 %		68-11-1
DOT: 9 - Misc. Hazardous Materials Toxic	**Nalco 1720: Oxygen Scavenger** CAS No Map: Map 4B	**Gallons** State: Liquid Type: Mixture	**4400** Storage Container: Aboveground Tank Days on Site: 365	**4400**	3000 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Sodium Bisulfite Potasium Bisulfite	30 % 5 %		7631-90-5 7773-03-7 7631-90-5 7631-90-5 7631-90-5
DOT: 8 - Corrosives (Liquids and Solids) Corrosive, Water Reactive, Class 2, Water Reactive, Class 3	**Sulfuric Acid** CAS No ✔EHS Map: Map 4B	**Pounds** State: Liquid Type: Mixture	**16800** Storage Container: Aboveground Tank Days on Site: 365	**16800**	12200 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Sulfuric Acid	93 %	✔	7664-93-9 7664-93-9 7664-93-9 7664-93-9 7664-93-9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Cooling Tower & Waste Water Filtration Area: 2 Tanks near Waste Water Tank & Diesel Fire Pump House

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Oxidizing, Class 3	**Liquichlor (sodium hypochlorite 12.5%)** CAS No Map: Map 4B	**Gallons** State Liquid Type Mixture	**710** Storage Container Aboveground Tank Days on Site: 365	**380**	600 Pressue Ambient Temperature Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Sodium Hypochlorite Water	13 % 88 %		7681-52-9 7732-18-5

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Cooling Tower & Waste Water Filtration Area: Emergency Diesel Fire Pump House

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Corrosive, Water Reactive, Class 2	**Lead Acid Batteries** CAS No Map: Map 4B	**Gallons** State: Liquid Type: Mixture	**8.6** Storage Container: Other Days on Site: 365	**4.3**	8.6 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Sulfuric Acid	40 %	✓	7664-93-9 9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. PANOCHE ENERGY CENTER LLC
Facility Name PANOCHE ENERGY CENTER
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location Cooling Tower & Waste Water Filtration Area: South-east end of Cooling Tower

CERS ID 10153959
Facility ID FA0280871
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**ChemTreat CT62: Cooling Water Treatment** CAS No Map: Map 4B	**Gallons** State: Liquid Type: Mixture	**500** Storage Container: Aboveground Tank Days on Site: 365	**500**	250 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Zinc Chloride	70 %		7646-85-7 7646-85-7 7646-85-7 7646-85-7 7646-85-7

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location **Cooling Tower & Waste Water Filtration Area: South-east End of Cooling Tower**

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
	ChemTreat CT907: Cooling Water Treatment	**Gallons**	**275**	**275**	250	0	- Health Acute Toxicity	Polyehtylene glycol mono (octylphenyl) etherether	10 %		9036-19-5
	CAS No	State: Liquid	Storage Container: Tote Bin		Pressue: Ambient	Waste Code					9036-19-5
		Type: Mixture			Temperature: Ambient						9036-19-5
	Map: Map 4B		Days on Site: 365								9036-19-5
											9036-19-5

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location **Cooling Tower & Waste Water Filtration Area: Emergency Diesel Fire Pump House**

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
DOT: 3 - Flammable and Combustible Liquids Combustible Liquid, Class II	**Diesel Fuel** CAS No 68476-34-6 Map: Map 4B	**Gallons** State Liquid Type Mixture	**300** Storage Container Aboveground Tank Days on Site: 365	**300**	250 Pressue Ambient Temperature Ambient	0 Waste Code	- Physical Flammable - Health Carcinogenicity - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation - Health Specific Target Organ Toxicity - Health Aspiration Hazard - Health Hazard Not Otherwise Classified	Fuels, Diesel, no. 2 Naphthalene	100 % 1 %		68476-34-6 68476-34-6 68476-34-6 68476-34-6 68476-34-6

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Cooling Tower & Waste Water Filtration Area: North-west Corner of Cooling Tower

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**Nalco 3D TRASAR 3DT461: Cooling Water Treatment** CAS No Map: Map 4B	**Gallons** State Liquid Type Mixture	**500** Storage Container Aboveground Tank Days on Site: 365	**540**	400 Pressue Ambient Temperature Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Tripotassium Phosphate Sodium Tolyltriazole Potassium Hydroxide	30 % 5 % 1 %		7778-53-2 64665-57-2 1310-58-3 7778-53-2 7778-53-2

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org.	**PANOCHE ENERGY CENTER LLC**	Chemical Location	CERS ID **10153959**
Facility Name	**PANOCHE ENERGY CENTER**	**Enhanced Wastewater System (EWS): Indoor & Outdoor Chemical Storage Areas**	Facility ID **FA0280871**
	43883 W PANOCHE RD , FIREBAUGH 93622		Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**Hydrochloric Acid (30%)** CAS No Map: Map 9B	**Gallons** State: Liquid Type: Mixture	**165** Storage Container: Plastic/Non-metalic Drum Days on Site: 30	**55**	35 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Hydrochloric Acid	30 %		7647-1-0 7647-1-0 7647-1-0 7647-1-0 7647-1-0

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Enhanced Wastewater System (EWS): Indoor Chemical Storage Area

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Corrosive, Water Reactive, Class 2, Water Reactive, Class 3	**Sufuric Acid** CAS No ✓EHS Map: Map 9B	**Pounds** State: Liquid Type: Mixture	**5508** Storage Container: Aboveground Tank, Plastic/Non-metalic Drum Days on Site: 365	**3825**	3100 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Sulfuric Acid	93 %	✓	7664-93-9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Enhanced Wastewater System (EWS): Oudoor Drum & Tote Storage Pad

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Corrosive, Water Reactive, Class 2, Water Reactive, Class 3	**Sulfuric Acid** CAS No ✓EHS Map: Map 9B	**Pounds** State: Liquid Type: Mixture	**3366** Storage Container: Plastic/Non-metalic Drum Days on Site: 365	**841**	1683 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Sulfuric Acid	93 %	✓	7664-93-9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. PANOCHE ENERGY CENTER LLC
Facility Name PANOCHE ENERGY CENTER
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location Enhanced Wastewater System (EWS): Outdoor Chemical Storage Area

CERS ID 10153959
Facility ID FA0280871
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**Ferric Chloride (38%)** CAS No Map: MAP 9B	**Gallons** State: Liquid Type: Mixture	**2300** Storage Container: Aboveground Tank Days on Site: 365	**2500**	1800 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Iron Trichloride Hydrochloric Acid	38 % 3 %		7705-08-0 7647-01-0 7705-08-0 7705-08-0 7705-08-0

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location **Enhanced Wastewater System (EWS): Outdoor Chemical Storage Area (Tank)**

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**Caustic Soda (50%)** CAS No Map: Map 9B	**Gallons** State Liquid Type Mixture	**6000** Storage Container Aboveground Tank, Plastic/Non-metalic Drum Days on Site: 365	**6650**	4000 Pressue Ambient Temperature Ambient	0 Waste Code 122	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Sodium Hydroxide Sodium Chloride Water	50 % 5 % 50 %		1310-73-2 7647-14-5 7732-18-5 1310-73-2 1310-73-2
DOT: 8 - Corrosives (Liquids and Solids) Corrosive, Water Reactive, Class 2, Water Reactive, Class 3	**Sulfuric Acid** CAS No ✔EHS Map: Map 9B	**Pounds** State Liquid Type Mixture	**32825** Storage Container Aboveground Tank Days on Site: 365	**35650**	25700 Pressue Ambient Temperature Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Sulfuric Acid	93 %	✔	7664-93-9 7664-93-9 7664-93-9 7664-93-9 7664-93-9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location **Enhanced Wastewater System (EWS): Indoor Chemical Storage Area**

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**Caustic Soda (50%)** CAS No Map: Map 9B	**Gallons** State Liquid Type Mixture	**360** Storage Container Aboveground Tank, Plastic/Non-metalic Drum Days on Site: 365	**250**	200 Pressue Ambient Temperature Ambient	0 Waste Code 122	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Sodium Hydroxide Sodium Chloride Water	50 % 5 % 50 %		1310-73-2 7647-14-5 7732-18-5 1310-73-2 1310-73-2
	ChemTreat RL9008: Reverse Osmosis Treatment CAS No Map: Map 9B	**Gallons** State Liquid Type Mixture	**55** Storage Container Plastic/Non-metalic Drum Days on Site: 365	**55**	30 Pressue Ambient Temperature Ambient	0 Waste Code	- Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	2-Phosphoro-1,2,4-butane tricarboxylic acid	10 %		37971-36-1 37971-36-1 37971-36-1 37971-36-1 37971-36-1

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location **Enhanced Wastewater System (EWS): Indoor Chemical Storage Area**

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
	MagChem 10-325S CAS No Map: MAP 9B	**Pounds** State: Solid Type: Mixture	**18000** Storage Container: Bag Days on Site: 365	**3000**	12000 Pressue: Ambient Temperature: Ambient	0 Waste Code		Magnesium Oxide Oxides of silicone, iron, aluminum, and calcium	98 % 2 %		1309-48-4
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**Nalco PeramCare PC-7408** CAS No Map: Map 9B	**Gallons** State: Liquid Type: Mixture	**110** Storage Container: Plastic/Non-metalic Drum Days on Site: 365	**55**	80 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Physical Corrosive To Metal	Sodium Bisulfite	60 %		7631-90-5 7631-90-5 7631-90-5 7631-90-5 7631-90-5
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**ChemTreat RL1500: Reverse Osmosis Cleaner** CAS No Map: Map 9B	**Gallons** State: Liquid Type: Mixture	**110** Storage Container: Plastic/Non-metalic Drum Days on Site: 365	**55**	10 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Ethylene diamine tetraacetic acid tetrasodium salt Sodium Hydroxide	30 % 1 %		64-02-8 1310-73-2 64-02-8 64-02-8 64-02-8
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**ChemTreat RL2016: Reverse Osmosis & Resin Cleaner** CAS No Map: Map 9B	**Gallons** State: Liquid Type: Mixture	**55** Storage Container: Plastic/Non-metalic Drum Days on Site: 365	**55**	30 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Citric Acid Water	30 % 70 %		77-92-9 7732-18-5 77-92-9 77-92-9 77-92-9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location **Fuel Gas Compressor Area: Compressors A-C Drain Tanks**

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
DOT: 9 - Misc. Hazardous Materials Combustible Liquid, Class III-A	**Hazardous Waste, Liquid - Waste Oil with Trace Benzne** CAS No Map: Map 5B	**Gallons** State Liquid Type Waste	**100** Storage Container Other Days on Site: 90	**150**	40 Pressue Ambient Temperature Ambient	150 Waste Code 223	- Health Carcinogenicity - Health Hazard Not Otherwise Classified	Waste Oil Benzene	100 % 0 %		

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Fuel Gas Compressor Area: Gas Chromatograph

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 2.2 - Nonflammable Gases	**Helium, Compressed** CAS No 7440-59-7 Map: Map 5B	**Cu. Feet** State Gas Type Pure	**436** Storage Container Cylinder Days on Site: 365	**218**	350 Pressue > Ambient Temperature Ambient	0 Waste Code	- Physical Gas Under Pressure - Health Simple Asphyxiant				
DOT: 2.1 - Flammable Gases Flammable Gas	**Calibration Gas (Natural Gas)** CAS No Map: Map 5B	**Cu. Feet** State Gas Type Mixture	**250** Storage Container Cylinder Days on Site: 365	**250**	175 Pressue > Ambient Temperature Ambient	0 Waste Code	- Physical Flammable - Physical Gas Under Pressure	Methane Ethane Propane Butanes	95 % 5 % 1 % 1 %		74-82-8 74-82-8 74-82-8 74-82-8 74-82-8

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Injection Well 1,2 & 3 (IW1, IW2, IW3)

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
	Injection Well Brine (Sodium Choloride Solution with Corrosion Inhibitors)	**Gallons**	**1000**	**400**	900	0		Sodium Chloride	35 %		7647-14-5
		State: Liquid	Storage Container: Aboveground Tank		Pressue: Ambient	Waste Code		Tributyl phosphate	1 %		7647-14-5
								Fatty Acid Ester	1 %		7647-14-5
	CAS No	Type: Mixture	Days on Site: 365		Temperature: Ambient			Trade Secret Chemicals (non-Sara)	1 %		7647-14-5
											7647-14-5
	Map: Map 8										

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Injection Well 4 (IW4)

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
	Injection Well Brine (Calcium Chloride with Corrosion Inhibitors)	**Gallons**	**400**	**400**	300	0		Calcium Chloride	70 %		10043-52-4
								Tributyl Phosphate	1 %		10043-52-4
								Fatty Acid Esters	1 %		10043-52-4
								Trade Secret Chemicals (non-SARA)	1 %		10043-52-4
											10043-52-4

State: Liquid
Storage Container: Aboveground Tank
Pressue: Ambient
Waste Code:
Type: Mixture
Days on Site: 365
Temperature: Ambient
CAS No:

Map: Map 8

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location **South of Control Room**

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 2.1 - Flammable Gases	**Liquidifed Petroleum Gas (LPG)**	**Gallons**	**1150**	**1150**	800	0	- Physical	Propane	85 %		74-98-6
	CAS No	State: Liquid	Storage Container: Aboveground Tank		Pressue: > Ambient	Waste Code	Flammable	Propylene	10 %		74-98-6
Flammable Gas							- Physical Gas Under Pressure	Butanes	5 %		74-98-6
	Map: Map 3B	Type: Mixture	Days on Site: 365		Temperature: Ambient		- Health Simple Asphyxiant				74-98-6
											74-98-6

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Water Treatment Building: Battery Room

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Corrosive, Water Reactive, Class 2	**Lead Acid Batteries** CAS No Map: Map 3B	**Gallons** State: Liquid Type: Mixture	**318** Storage Container: Other Days on Site: 365	**10.6**	318 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Sulfuric Acid	40 %	✓	7664-93-9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Water Treatment Building: Chemical Storage Area

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
	Non-RCRA Hazardous Waste, Solid (Oily Solids)	**Gallons**	**275**	**55**	110	550	- Health Hazard	Oil contaminated rags	50 %		
		State: Solid	Storage Container: Steel Drum		Pressue: Ambient	Waste Code: 352	Not Otherwise Classified	Oil contaminated absorbents	50 %		
	CAS No	Type: Mixture	Days on Site: 90		Temperature: Ambient			)il contaminated soil and/or gravel	50 %		
	Map: Map 3B										

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location **Water Treatment Building: Indoor Chemical Storage Area**

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
Combustible Liquid, Class III-B	**Transformer Insulating Oil** CAS No Map: Map 3B	**Gallons** State: Liquid Type: Mixture	**220** Storage Container: Steel Drum Days on Site: 365	**55**	165 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Health Aspiration Hazard - Health Hazard Not Otherwise Classified	Distillate (petroleum), hydrotreated light naphthenic Distillate (petroleum), hydrotreated light parraffinic Lubricating oils (petroleum), C15-C30, hydrotreated neutral oil based 2,6-di-tert-butyl-p-cresol	100 % 50 % 50 % 0 %		64742-53-6 64742-55-8 72623-86-0 128-37-0 64742-53-6
Combustible Liquid, Class III-B, Flammable Liquid, Class I-C	**Non-RCRA Hazardous Waste, Liquid (Used Oil)** CAS No Map: Map 3B	**Gallons** State: Liquid Type: Waste	**275** Storage Container: Steel Drum Days on Site: 90	**55**	110 Pressue: Ambient Temperature: Ambient	550 Waste Code: 221	- Health Hazard Not Otherwise Classified	Used Oil	100 %		
Combustible Liquid, Class III-B	**Mobil DTE 25 (Hydraulic Fluid)** CAS No Map: Map 3B	**Gallons** State: Liquid Type: Mixture	**275** Storage Container: Steel Drum Days on Site: 365	**55**	165 Pressue: Ambient Temperature: Ambient	10 Waste Code: 221		2,6-Di-Tert-Butyl-P-Cresol Naphthalenesulfonic Acid, Dinonyl -, Calcium Salt	1 % 1 %		128-37-0 128-37-0 128-37-0 128-37-0 128-37-0
Combustible Liquid, Class III-B	**Mobil Jet II Oil** CAS No Map: Map 3B	**Gallons** State: Liquid Type: Mixture	**220** Storage Container: Steel Drum Days on Site: 365	**55**	110 Pressue: Ambient Temperature: Ambient	100 Waste Code: 221	- Health Hazard Not Otherwise Classified	Tricresyl Phosphate Alkylated diphenyl amines 1-Naphthylamine, n-phenyl	3 % 5 % 1 %		1330-78-5 68411-46-1 90-30-2
	Conntect 6000 CAS No Map: Map 3B	**Gallons** State: Liquid Type: Mixture	**220** Storage Container: Plastic/Non-metalic Drum Days on Site: 365	**55**	110 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Ethylene Glycol Monobutyl Ether Ethoxylated Alcohols Deionized Water	20 % 40 % 70 %		111-76-2 68439-46-3 7732-18-5 111-76-2 111-76-2
DOT: 8 - Corrosives (Liquids and Solids) Corrosive, Water Reactive, Class 2	**Lead Acid Batteries (Universal Waste)** CAS No Map: Map 3B	**Gallons** State: Liquid Type: Waste	**50** Storage Container: Other Days on Site: 90	**10.6**	0 Pressue: Ambient Temperature: Ambient	50 Waste Code	- Physical Corrosive To Metal - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Sulfuric Acid	40 %	✓	7664-93-9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location **Water Treatment Building: Indoor Chemical Storage Area**

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
Combustible Liquid, Class III-B	**Mobil Pegasus 805** CAS No Map: Map 3B	**Gallons** State: Liquid Type: Mixture	**220** Storage Container: Steel Drum Days on Site: 365	**55**	165 Pressue: Ambient Temperature: Ambient	55 Waste Code: 221		Benzene Propanoic Acid branched alkyl esters Sulfonci Acids Petroleum Calcium Salts	5 % 1 %		125643-61-0 61789-86-4 125643-61-0 125643-61-0 125643-61-0
Combustible Liquid, Class III-B	**Mobil DTE Oil Light (Mineral Lube Oil)** CAS No Map: Map 3B	**Gallons** State: Liquid Type: Mixture	**550** Storage Container: Steel Drum Days on Site: 365	**55**	330 Pressue: Ambient Temperature: Ambient	0 Waste Code:		2,6-Di-Tert-Butylphenol	1 %		128-39-2 128-39-2 128-39-2 128-39-2 128-39-2
DOT: 9 - Misc. Hazardous Materials Combustible Liquid, Class III-A	**Hazardous Waste, Liquid - Waste Oil with Trace Benzne** CAS No Map: Map 3B	**Gallons** State: Liquid Type: Waste	**30** Storage Container: Steel Drum Days on Site: 90	**55**	10 Pressue: Ambient Temperature: Ambient	80 Waste Code: 223	- Health Hazard Not Otherwise Classified	Waste Oil Benzene	100 % 0 %		
	Nalco Permatreat PC-191T (RO Antiscalent) CAS No Map: Map 3B	**Gallons** State: Liquid Type: Mixture	**220** Storage Container: Plastic/Non-metalic Drum Days on Site: 365	**55**	80 Pressue: Ambient Temperature: Ambient	0 Waste Code:		No Hazardous Constituents			
DOT: 8 - Corrosives (Liquids and Solids) Corrosive, Water Reactive, Class 2	**Universal Waste: Lead Acid Batteries** CAS No Map: Map 3B	**Gallons** State: Liquid Type: Mixture	**43** Storage Container: Other Days on Site: 365	**4.3**	8.6 Pressue: Ambient Temperature: Ambient	0 Waste Code:	- Physical Corrosive To Metal - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Sulfuric Acid	40 %	✓	7664-93-9 9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org.	**PANOCHE ENERGY CENTER LLC**	Chemical Location	CERS ID **10153959**
Facility Name	**PANOCHE ENERGY CENTER**	**Water Treatment Building: Indoor Chemical Storage**	Facility ID **FA0280871**
	43883 W PANOCHE RD , FIREBAUGH 93622	**Area & RO System**	Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
	Nalco PermaClean PC-77: Reverse Osmosis Cleaner	Gallons	**550**	**275**	350	0		No Hazardous Ingredients			
	CAS No	State: Liquid	Storage Container: Plastic/Non-metalic Drum, Tote Bin		Pressue: Ambient	Waste Code					
	Map: Map 3B	Type: Mixture	Days on Site: 365		Temperature: Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location **Water Treatment Building: Outdoor Chemical Storage Area**

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Oxidizing, Class 3	**Liquichlor (sodium hypochlorite 12.5%)** CAS No Map: Map 3B	**Gallons** State: Liquid Type: Mixture	**1000** Storage Container: Aboveground Tank Days on Site: 365	**1000**	650 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Sodium Hypochlorite Water	13 % 88 %		7681-52-9 7732-18-5
	ChemTreat RL9008: Reverse Osmosis Treatment CAS No Map: Map 3B	**Gallons** State: Liquid Type: Mixture	**540** Storage Container: Aboveground Tank Days on Site: 365	**540**	300 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	2-Phosphono-1,2,4-butane tricarboxylic acid Water	5 % 95 %		37971-36-1 37971-36-1 37971-36-1 37971-36-1 37971-36-1
DOT: 8 - Corrosives (Liquids and Solids) Corrosive, Toxic	**Caustic Soda (50%)** CAS No Map: Map 3B	**Gallons** State: Liquid Type: Mixture	**550** Storage Container: Aboveground Tank Days on Site: 365	**550**	400 Pressue: Ambient Temperature: Ambient	0 Waste Code 122	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Sodium Hydroxide Sodium Chloride Water	50 % 5 % 50 %		1310-73-2 7647-14-5 7732-18-5 1310-73-2 1310-73-2
	Nalco ControlBrom CB70: Cooling Water Microbiocide CAS No Map: Map 3B	**Gallons** State: Liquid Type: Mixture	**1000** Storage Container: Aboveground Tank Days on Site: 365	**1000**	500 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Health Acute Toxicity	Sodium Bromide	30 %		7647-15-6 7647-15-6 7647-15-6 7647-15-6 7647-15-6
	ChemTreat CL4657: Cooling Water Treatment CAS No Map: Map 3B	**Gallons** State: Liquid Type: Mixture	**2500** Storage Container: Aboveground Tank Days on Site: 365	**3000**	2000 Pressue: Ambient Temperature: Ambient	0 Waste Code		No Hazardous Constituents			

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Water Treatment Building: Outdoor Chemical Storage Area (Tank ID: TK-TCF-002)

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Corrosive, Water Reactive, Class 2, Water Reactive, Class 3	**Sulfuric Acid** CAS No ✓EHS Map: Map 3B	**Pounds** State: Liquid Type: Mixture	**16800** Storage Container: Aboveground Tank Days on Site: 365	**16800**	12200 Pressue: Ambient Temperature: Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Sulfuric Acid	93 %	✓	7664-93-9 7664-93-9 7664-93-9 7664-93-9 7664-93-9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org.	**PANOCHE ENERGY CENTER LLC**	Chemical Location	CERS ID **10153959**
Facility Name	**PANOCHE ENERGY CENTER**	**Water Treatment Building: Outdoor Compressed Gas**	Facility ID **FA0280871**
	43883 W PANOCHE RD , FIREBAUGH 93622	**Cylinder Storage Area**	Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
	Nitrogen, Compressed	**Cu. Feet**	**1952**	**488**	1464	0					
	CAS No 7727-37-9 Map: Map 3B	State Gas	Storage Container Cylinder		Pressue > Ambient	Waste Code					
		Type Pure	Days on Site: 365		Temperature Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Water Treatment Building: Outside Comperssed Gas Cylinder Storage Area

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
DOT: 2.2 - Nonflammable Gases	**CEMS Calibration Gas Mixture**	**Cu. Feet**	**8820**	**168**	7350	0	- Physical Gas Under Pressure	Nitrogen	99 %		124-38-9
	CAS No	State: Gas	Storage Container: Cylinder		Pressue: > Ambient	Waste Code	- Health Simple Asphyxiant	NOx	1 %		124-38-9
	Map: Map 3B	Type: Mixture	Days on Site: 365		Temperature: Ambient		- Health Hazard Not Otherwise Classified	Carbon Monoxide	1 %		124-38-9
											124-38-9
											124-38-9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Water Treatment Building: Outside Compressed Gas Cylinder Storage Area

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Quantities: Largest Cont.	Quantities: Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 2.1 - Flammable Gases Flammable Gas	**Hydrocarbon Gas Calibration Mixture** CAS No Map: Map 3B	**Cu. Feet** State: Gas Type: Mixture	**500** Storage Container: Cylinder Days on Site: 365	**500**	300 Pressue: > Ambient Temperature: Ambient	0 Waste Code	- Physical Flammable - Physical Gas Under Pressure - Health Hazard Not Otherwise Classified	Methane Ethane Propane Butane	95 % 5 % 1 % 1 %		74-82-8 74-82-8 74-82-8 74-82-8 74-82-8

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location
Water Treatment Building: RO System

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities: Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only): Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**ChemTreat RL2016: Reverse Osmosis & Resin Cleaner** CAS No Map: Map 3B	**Gallons** State Liquid Type Mixture	**110** Storage Container Plastic/Non-metalic Drum Days on Site: 365	**55**	75 Pressue Ambient Temperature Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Citric Acid Water	30 % 70 %		77-92-9 7732-18-5 77-92-9 77-92-9 77-92-9
DOT: 8 - Corrosives (Liquids and Solids) Corrosive	**ChemTreat RL1500: Reverse Osmosis Cleaner** CAS No Map: Map 3B	**Gallons** State Liquid Type Mixture	**165** Storage Container Plastic/Non-metalic Drum Days on Site: 365	**55**	80 Pressue Ambient Temperature Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Serious Eye Damage Eye Irritation	Ethylene diamine tetraacetic acid tetrasodium salt Sodium Hydroxide	30 % 1 %		64-02-8 1310-73-2 64-02-8 64-02-8 64-02-8

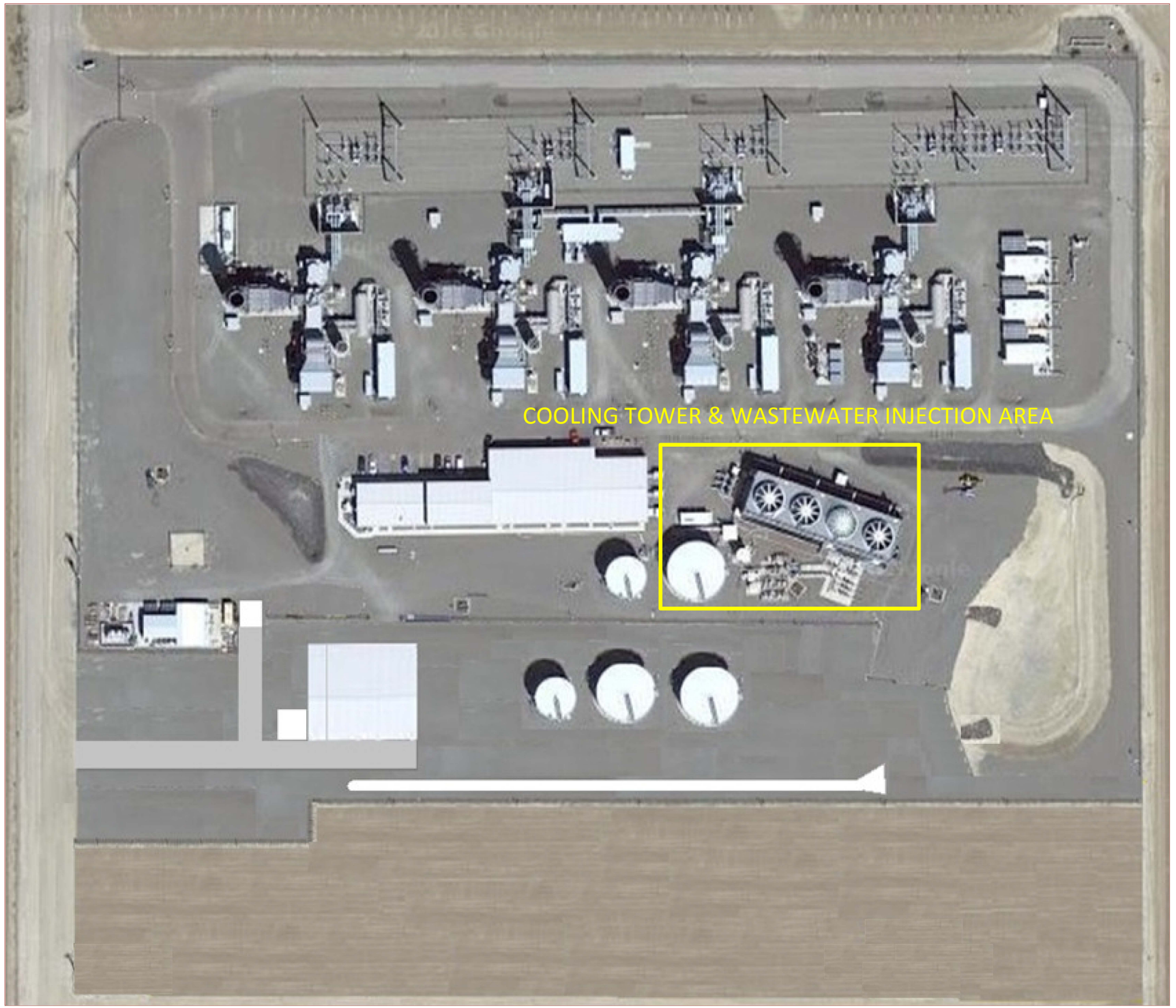
Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **PANOCHE ENERGY CENTER LLC**
Facility Name **PANOCHE ENERGY CENTER**
43883 W PANOCHE RD , FIREBAUGH 93622

Chemical Location **Water Treatment Buliding: Outdoor Chemical Storage Area**

CERS ID **10153959**
Facility ID **FA0280871**
Status **Submitted** on 2/22/2019 8:21 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids) Toxic	**ChemTreat BL124: Boiler Water Treatment** CAS No Map: Map 3B	**Gallons** State Liquid Type Mixture	**540** Storage Container Aboveground Tank Days on Site: 365	**540**	250 Pressue Ambient Temperature Ambient	0 Waste Code	- Physical Corrosive To Metal - Health Acute Toxicity - Health Skin Corrosion Irritation - Health Respiratory Skin Sensitization - Health Serious Eye Damage Eye Irritation	Sodium Bisulfite Water	40 % 60 %		7631-90-5 7631-90-5 7631-90-5 7631-90-5 7631-90-5



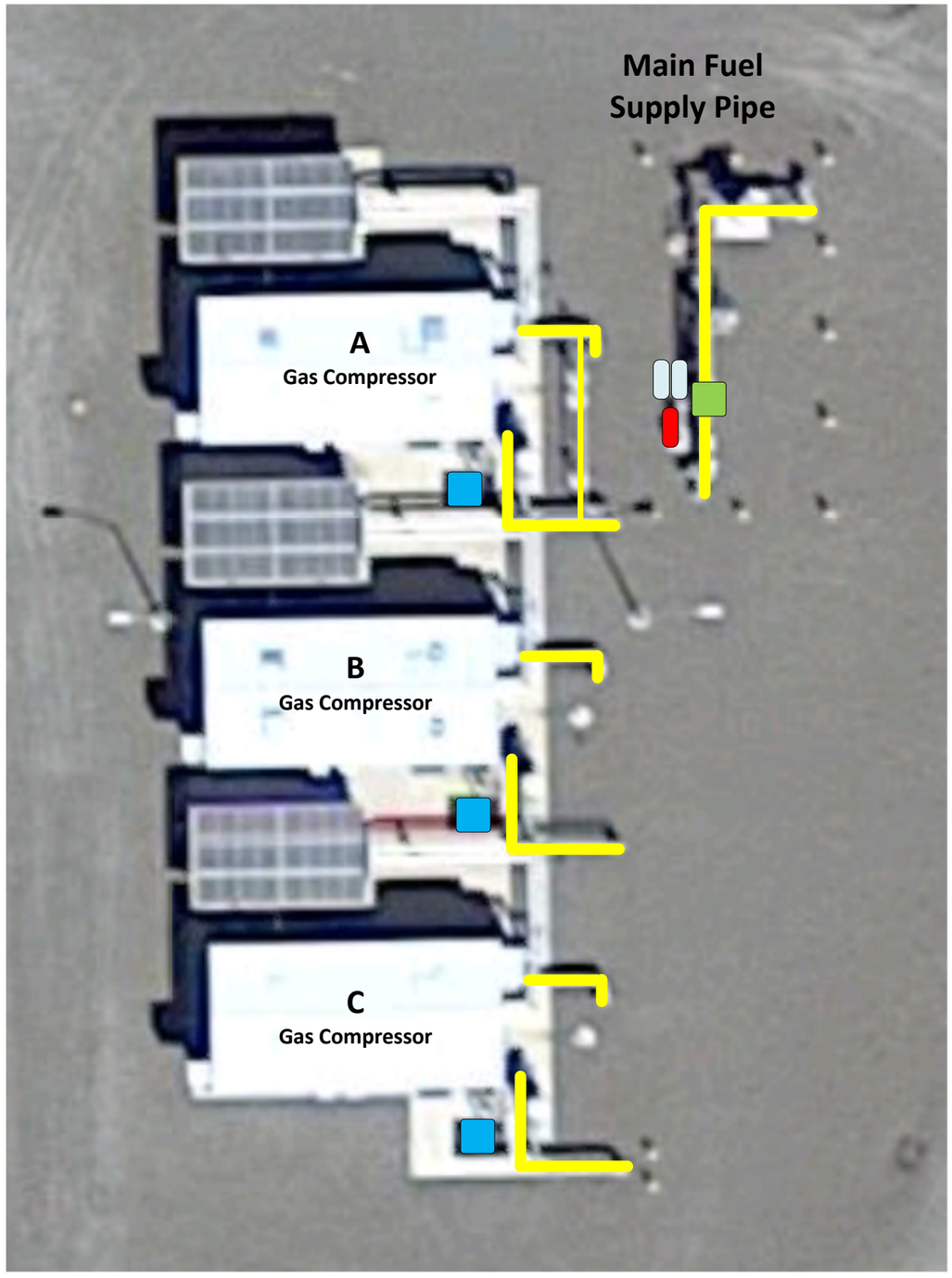
MAP 4A: Cooling Tower & Wastewater Injection Skid Area

Legend

- PG&E Main Gas Shut-Off Valve
- Main Electric Shut-Off (Breaker 292)
- Main Entrance Intercom & Emergency Responder Key Box
- Wind Sock
- Evacuation Area
- Vehicle Gate
- Personnel Gate

N

MAP 1: Site Map, Panoche Energy Center



Fuel Gas Compressor Drain Tank (3 x 150 gal)
(Hazardous Waste, Liquid Waste Oil with Trace Benzene)

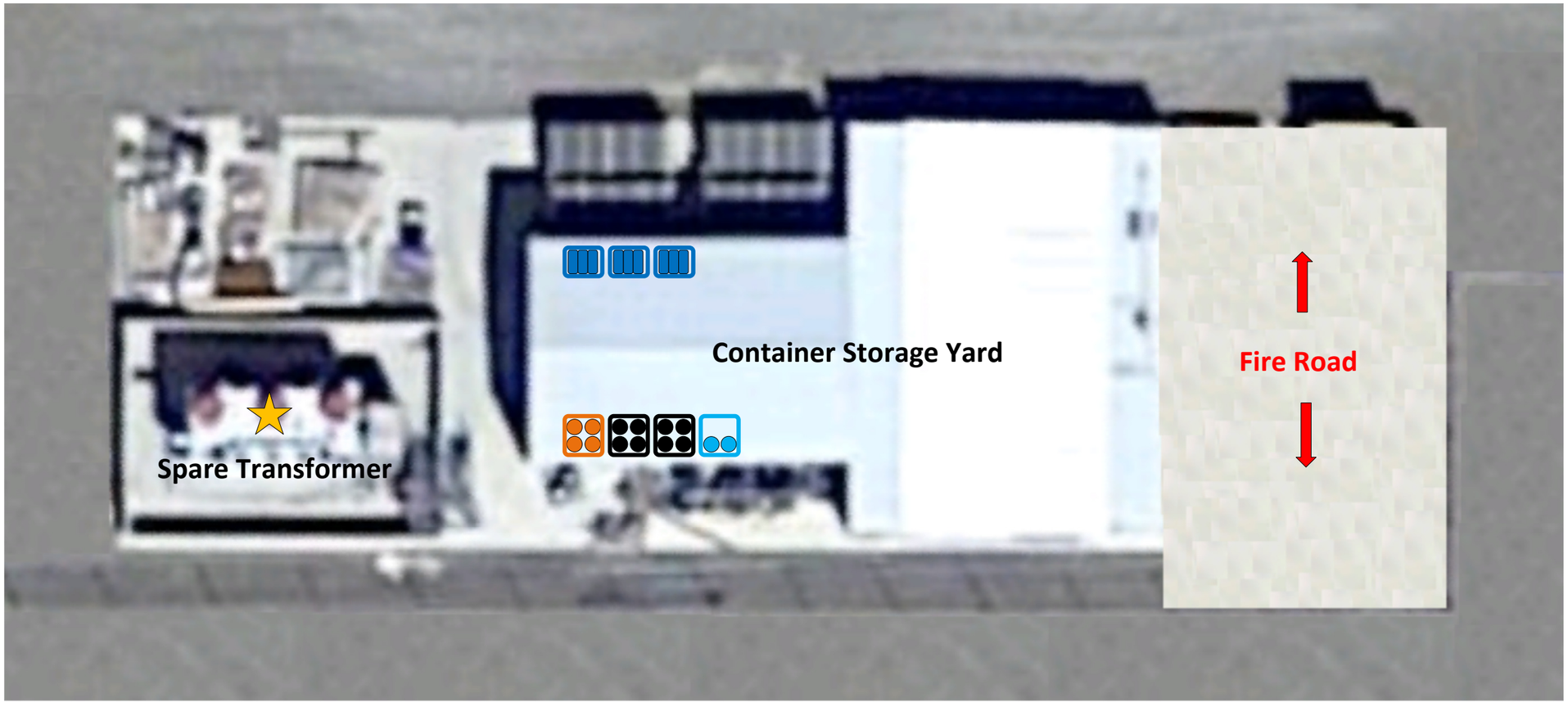
Gas Chromatograph

Helium Gas Cylinders (2 x compressed gas cylinders)

Calibration Gas - Flammable (1 x compressed gas cylinder)

Natural Gas Pipeline

MAP 5B: Fuel Gas Compressor Area



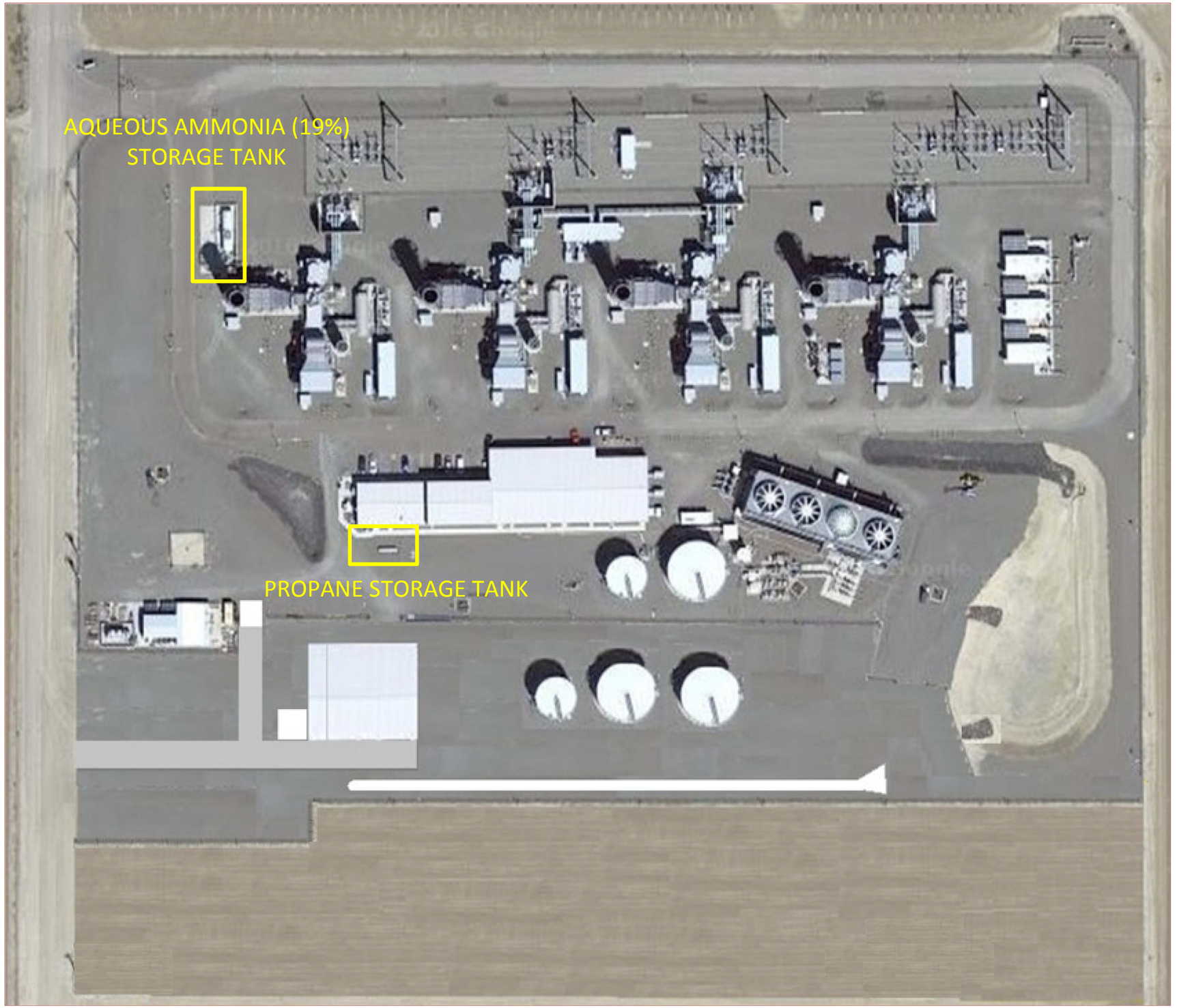
Mobil DTE 25 (6 x 55 gal drums)

Mobil DTE Oil Light (6 x 55 gal drums)

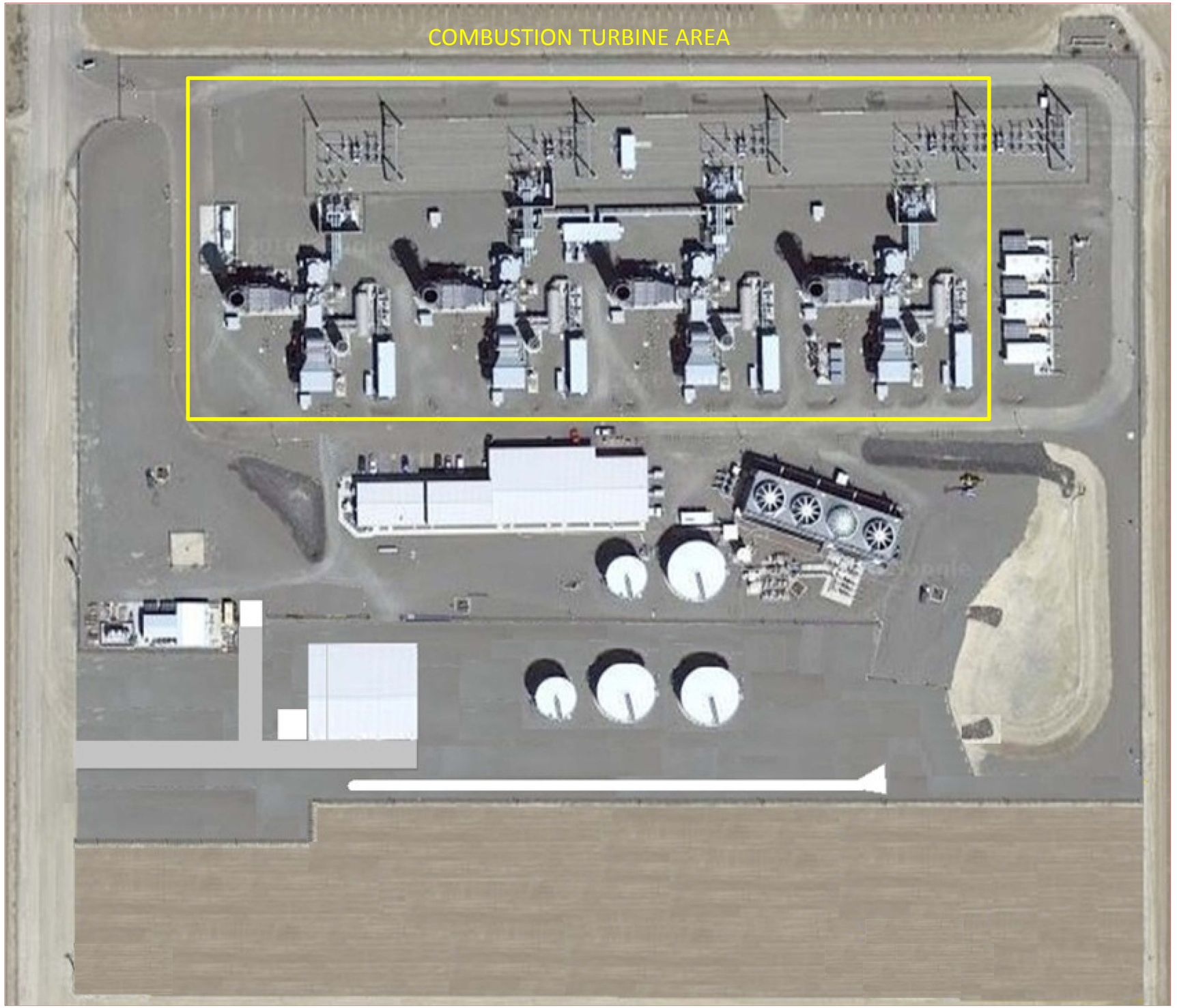
Conntect 6000 Gas Turbine Compressor Cleaner (2 x 55 gal drums)

Nytro 11 GBX-US Transformer Insulating Oil

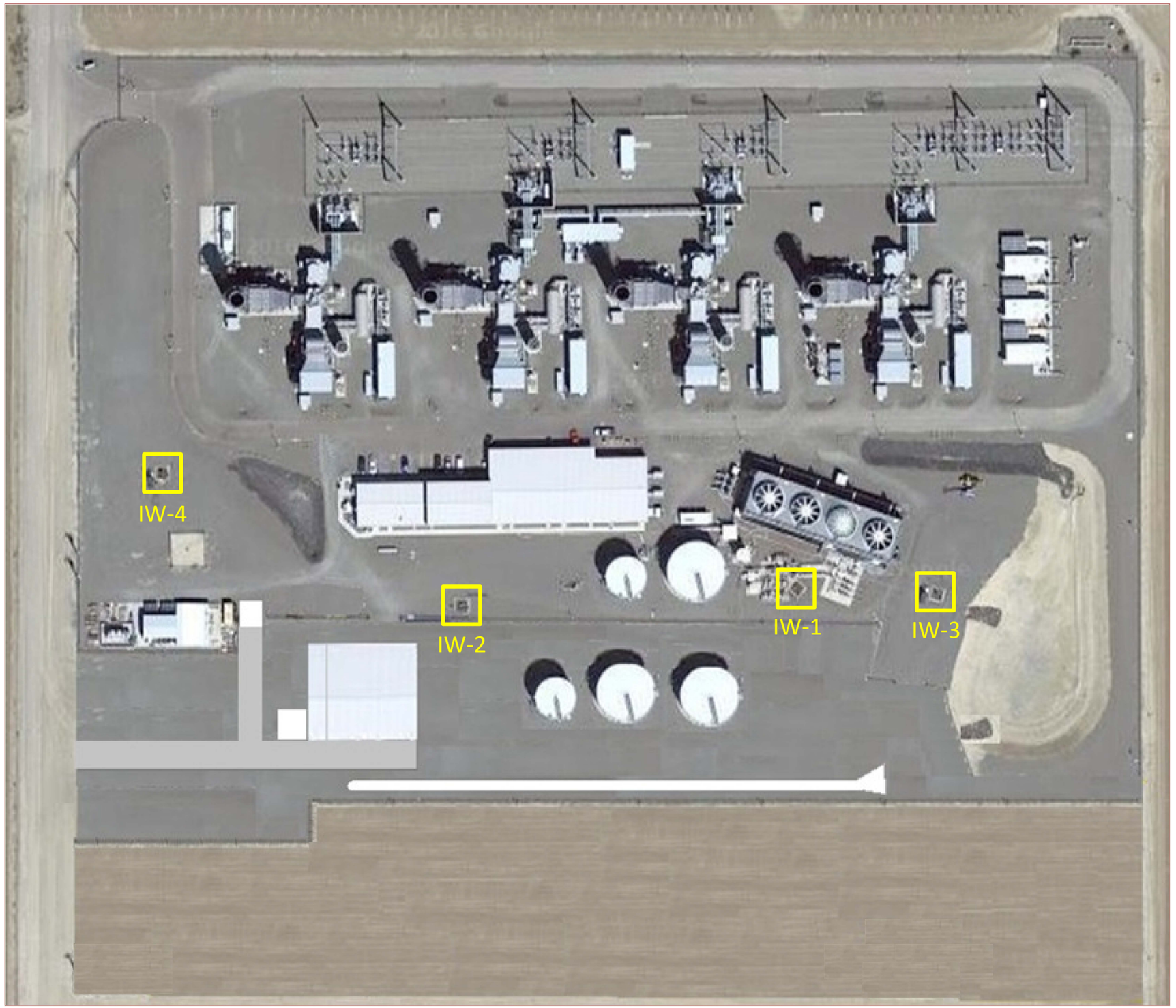
MAP 7B: Container Storage Yard & Spare Transformer



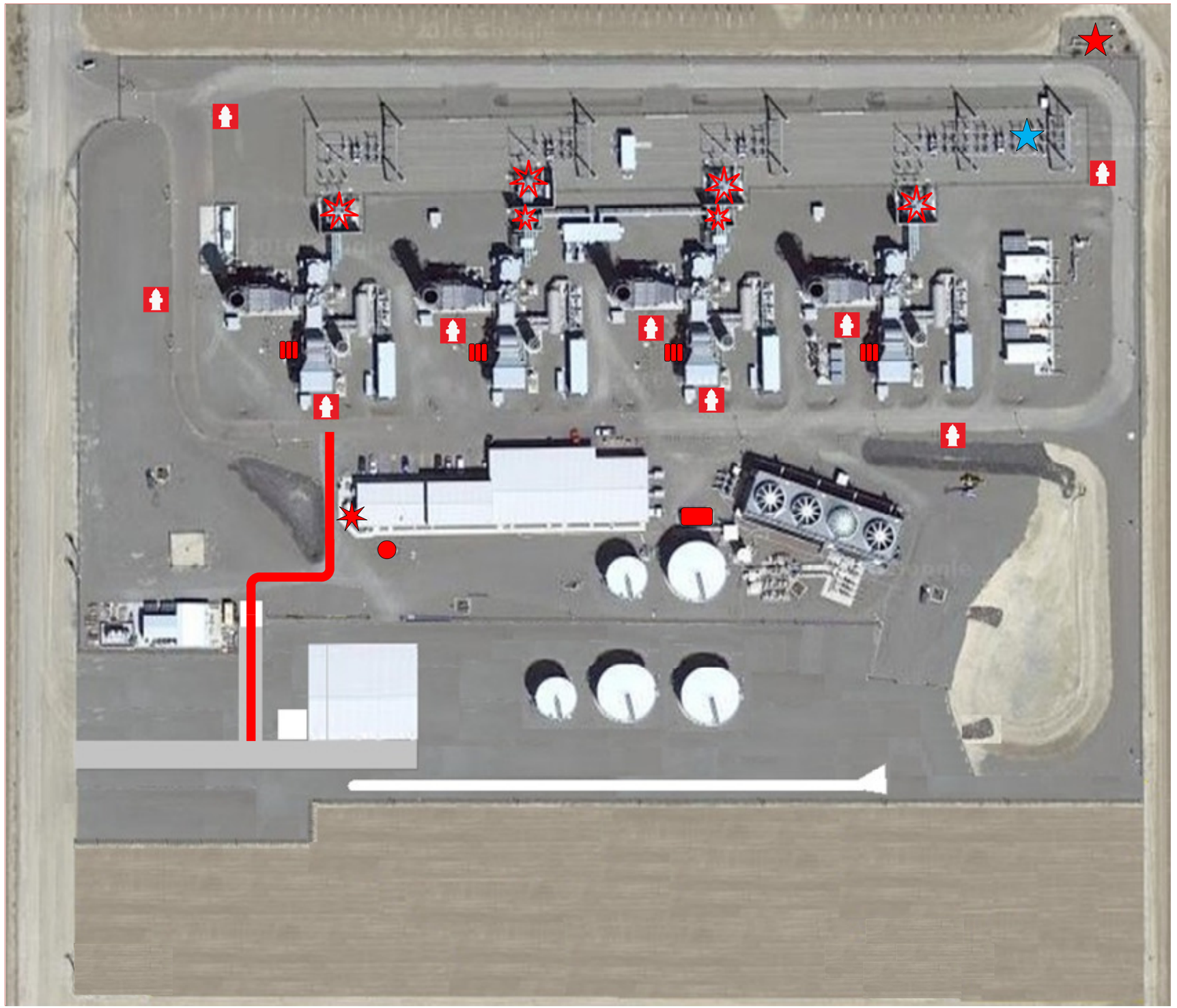
MAP 6: Aqueous Ammonia Tank & Propane Tank



MAP 2A: Combustion Turbine Area



MAP 8: Injection Wells

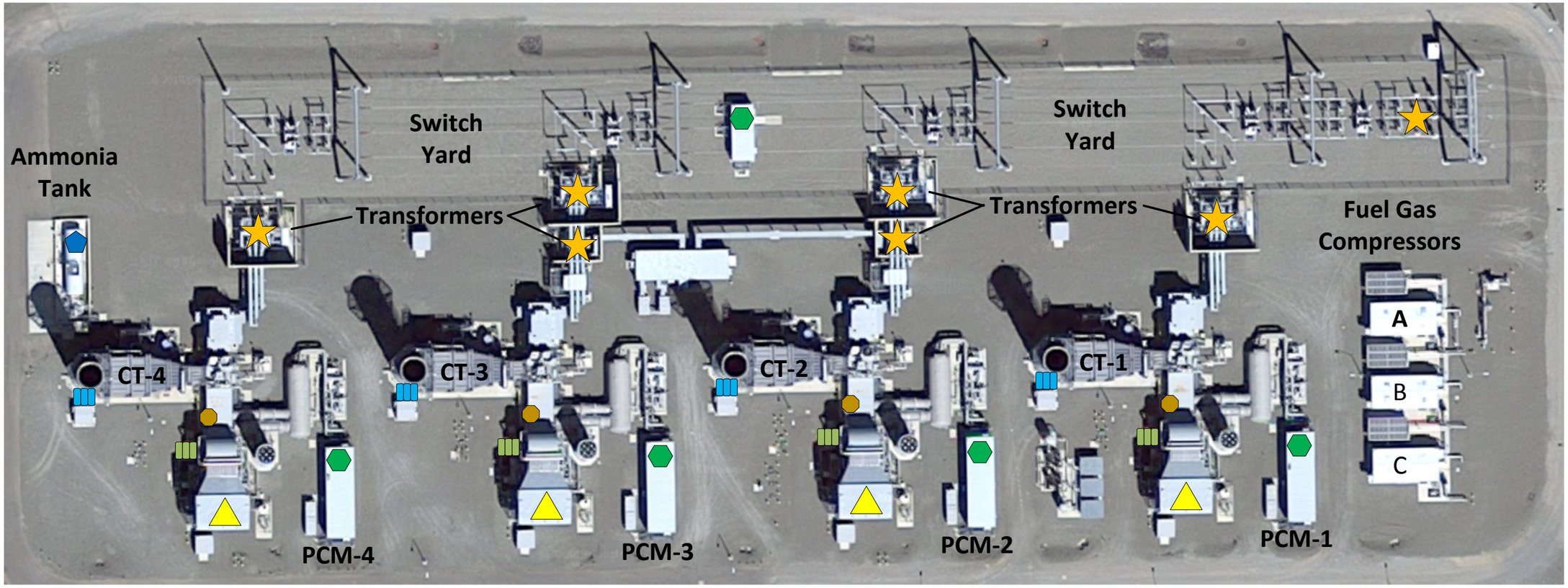


Legend

- PG&E Main Gas Shut-Off
- Propane Tank to Building Shut-Off
- Electrical Shut-Off (Breaker 292)
- Fire Hydrant
- Fire Pump House
- Propane Tank
- Fire Lane (no parking)
- Combustion Turbine Fire Protection (CO2 Compressed Gas Cylinders)
- Transformer Water Deluge

N

MAP 1A: Fire Protection System & Emergency Shut-Offs



Aqueous Ammonia Tank (Ammonium Hydroxide (19%)

Carbon Dioxide (CO_2) (Compressed Gas Cylinders)

CEMS Calibration Gas (Compressed Gas Cylinders)

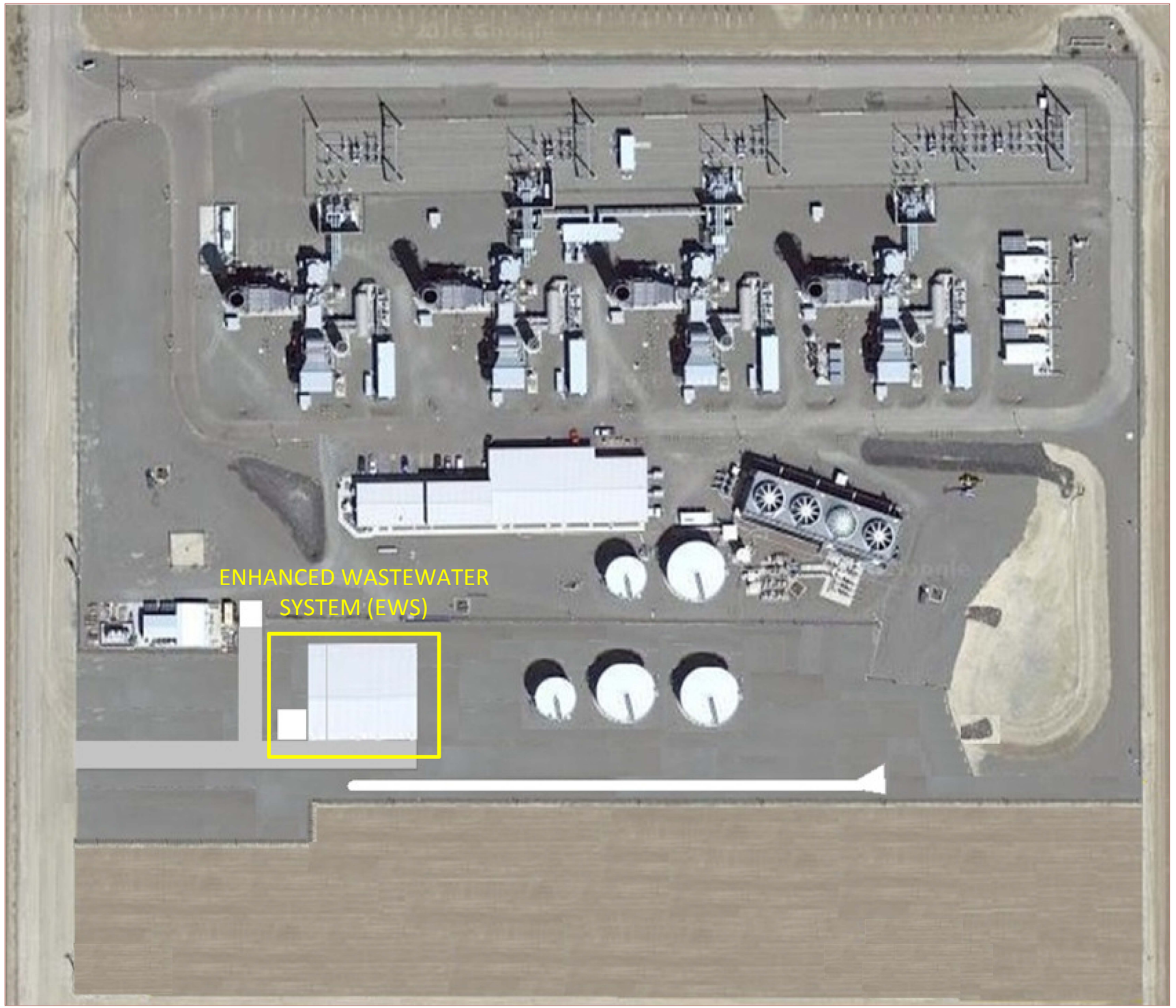
Lead Acid Batteries

Mineral Lubricating Oil (MLO)

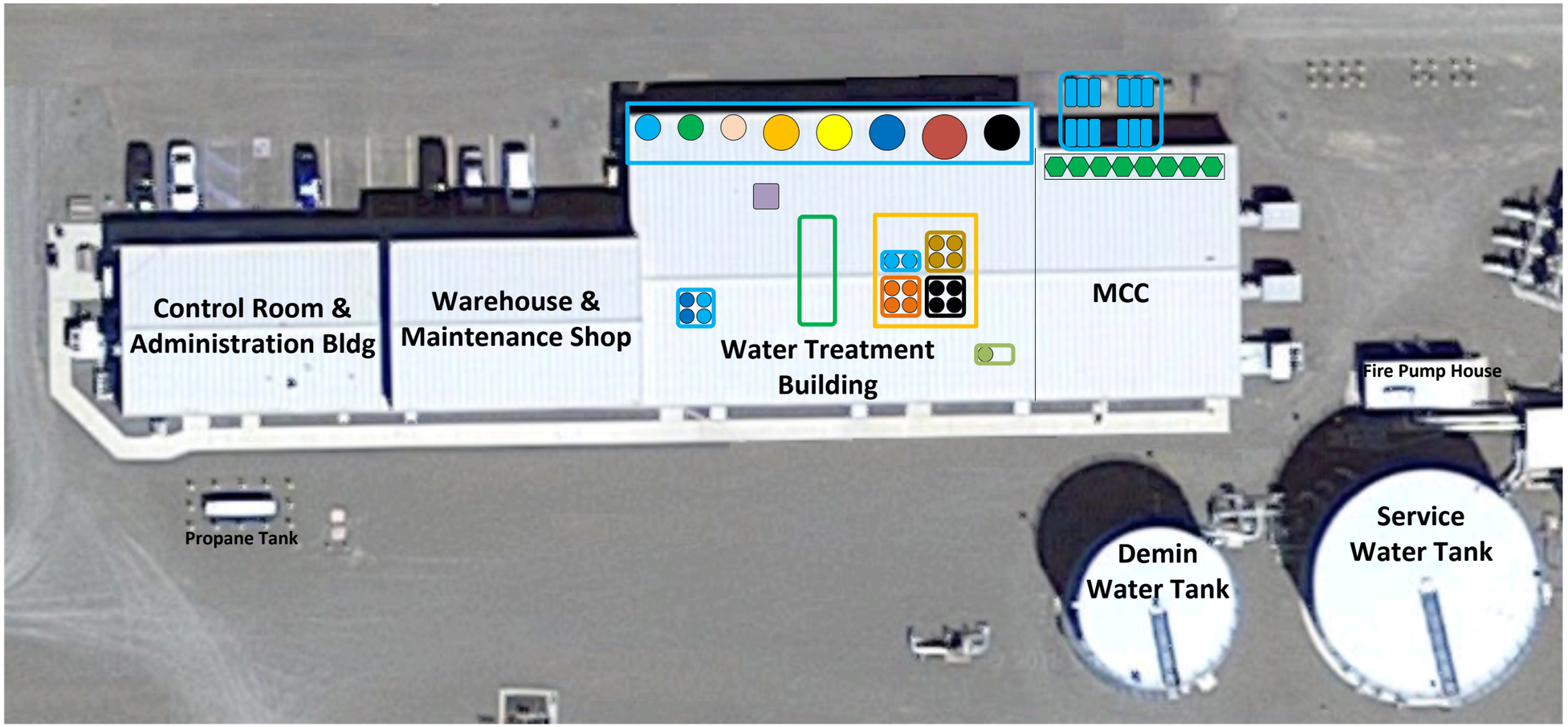
Nytro 11GBX-US Transformer Insulating Oil

Synthetic Lubricating Oil (SLO)

MAP 2B: Combustion Turbine Area

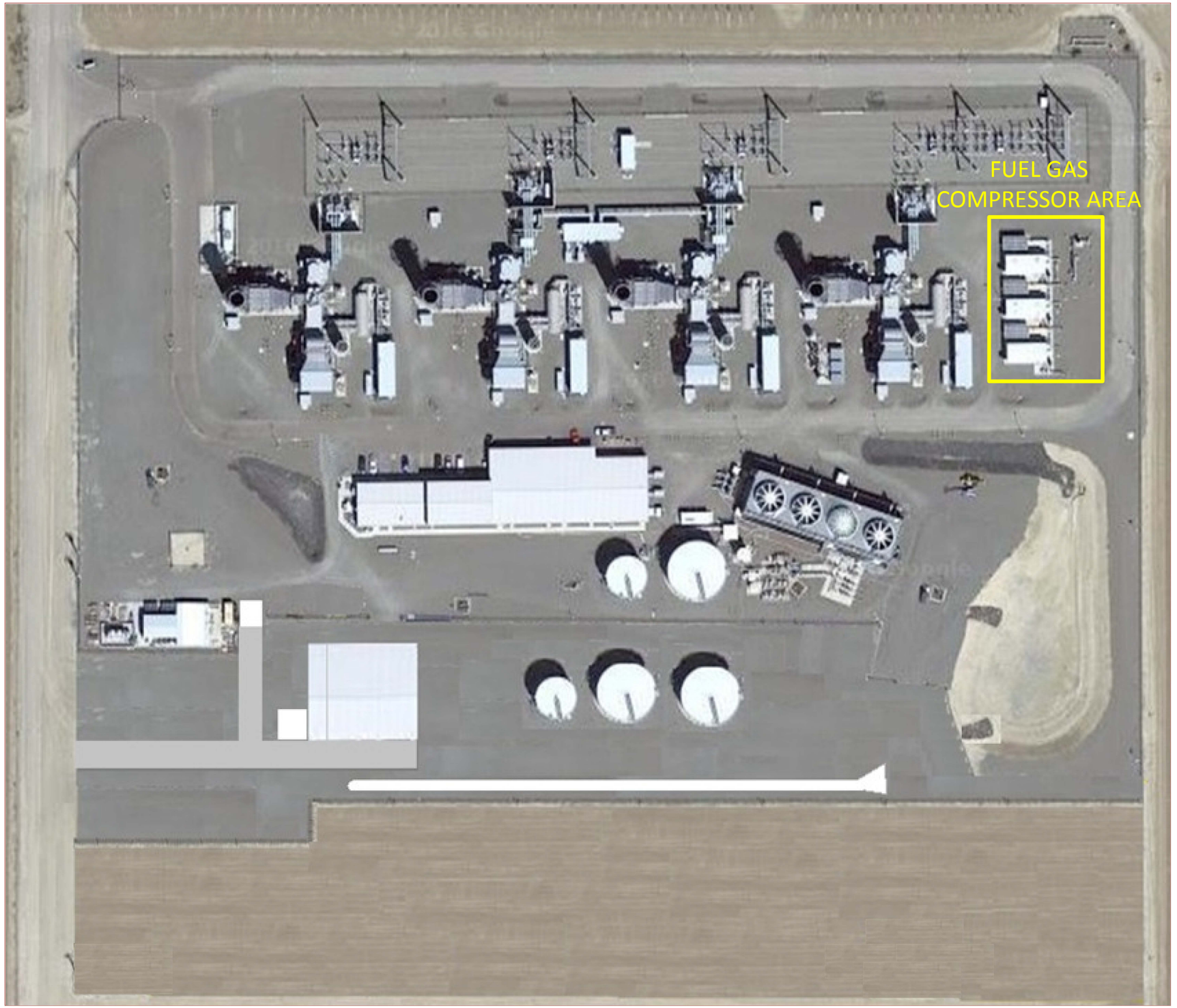


MAP 9A: ENHANCED WASTEWATER SYSTEM (EWS) Area

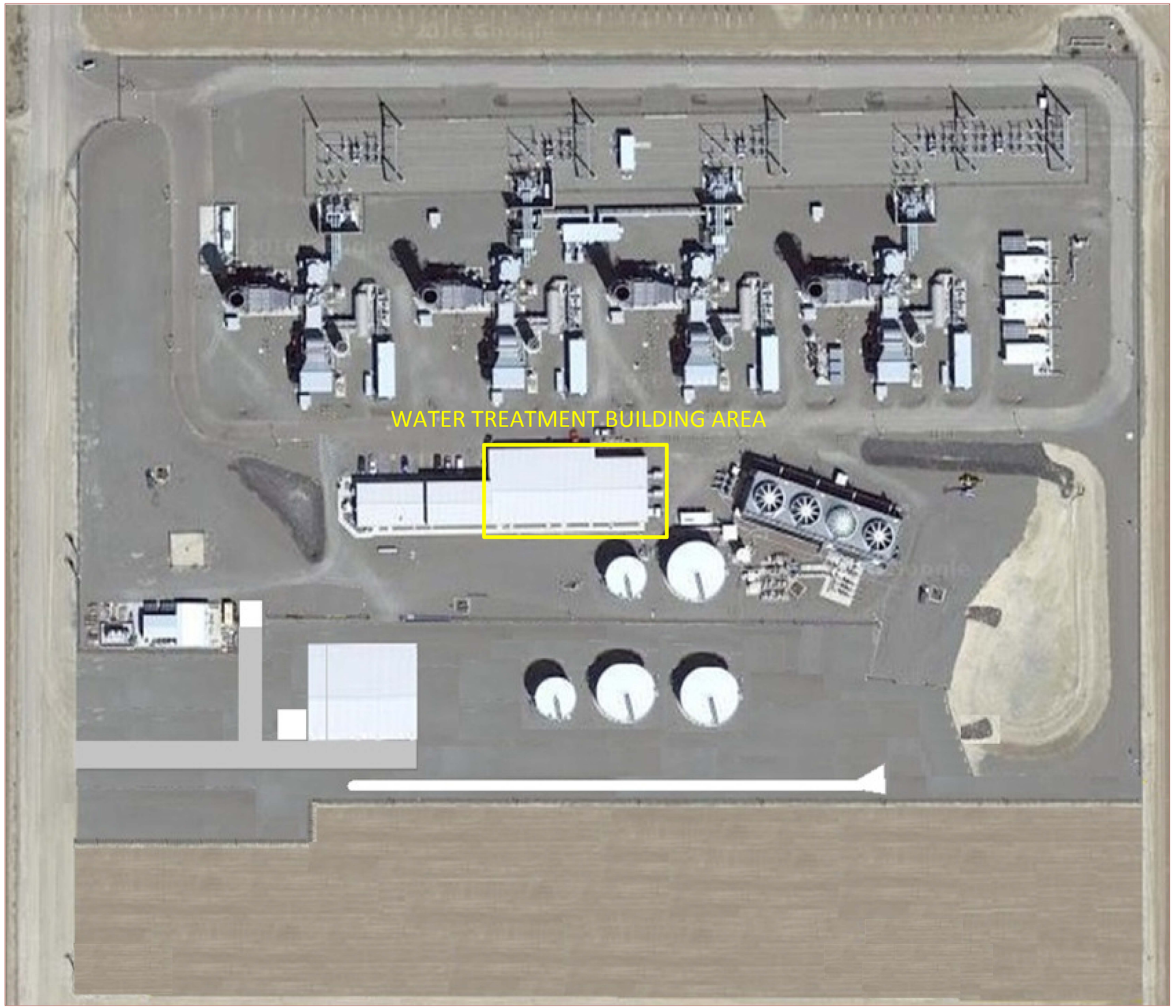


- ChemTreat RL9008 (540 gal)
- ChemTreat BL124 (540 gal)
- Sodium Hydroxide 50% (550 gal)
- Sodium Hypochlorite 12.5% (1100 gal)
- Sulfuric Acid 93% (1100 gal)
- Nalco ControlBrom CB70 (1000 gal)
- ChemTreat CL4657 (3000 gal)
- ChemTreat CL450 (540 gal)
- Nalco PermaClean PC77 (300 gal tote)
- Lead Acid Batteries
- ChemTreat RL1500 & RL2016 (2 x 55 gal drums each)
- Mobil Pegasus 805 Ultra Oil (4 x 55 gal drums)
- Mobil Jet Oil II (4 x 55 gal drums)
- Nytro IIGBX-US Transformer Oil (4 x 55 gal drums)
- Nalco Permatreat PC-191T (2 x 55 gal drum)
- Sodium Hypochlorite 12.5% (1 x 55 gal drum)
- Hazardous & Universal Waste Storage Area (e.g., Used Oil, Oily Solids, Batteries, Lamps, Electronic Devices, etc.)
- Outdoor Chemical Storage Area
- Indoor Chemical Storage Area
- Compressed Gas Cylinder Storage Area

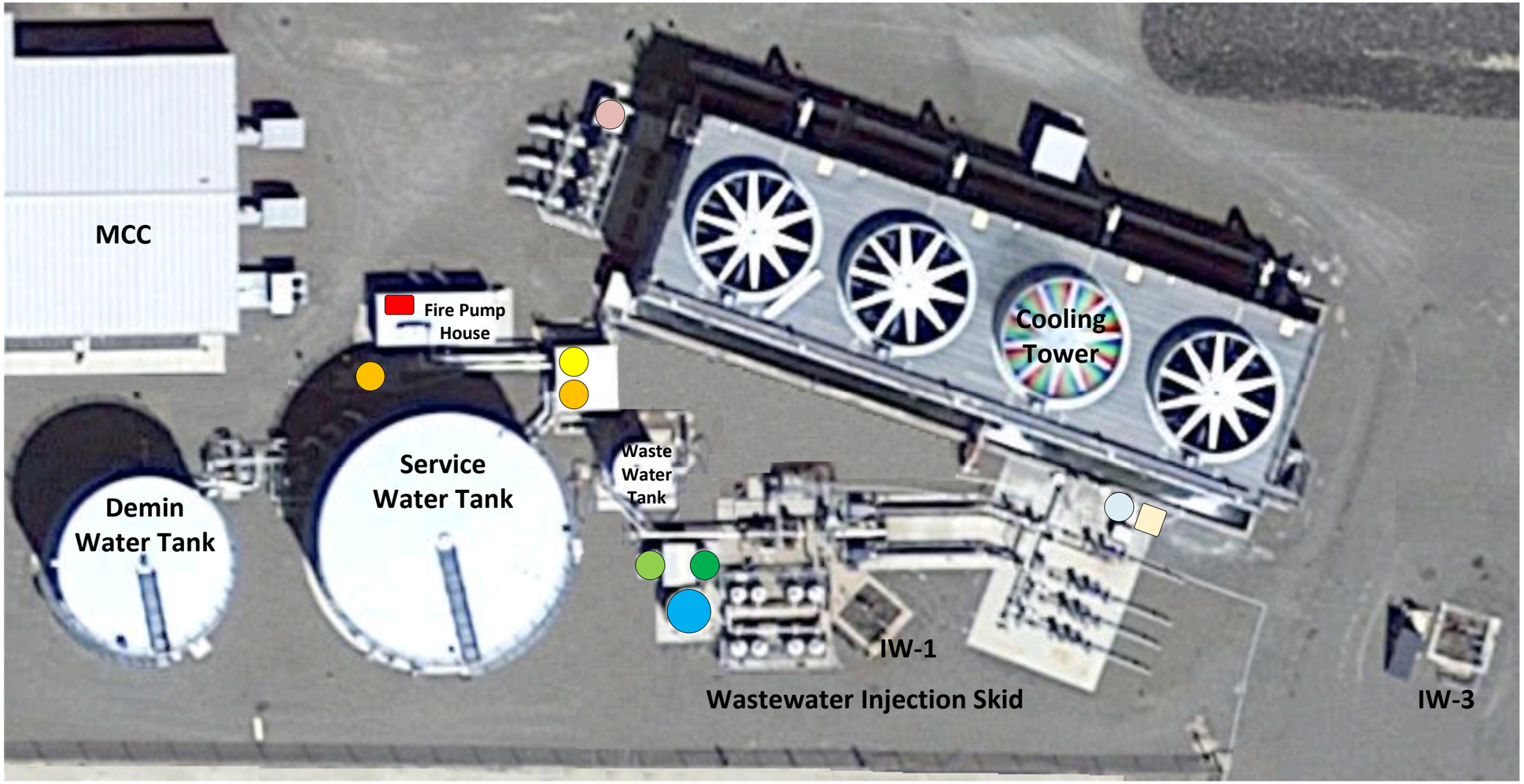
MAP 3B: Water Treatment Buiilding Area



MAP 5A: Fuel Gas Compressor Area

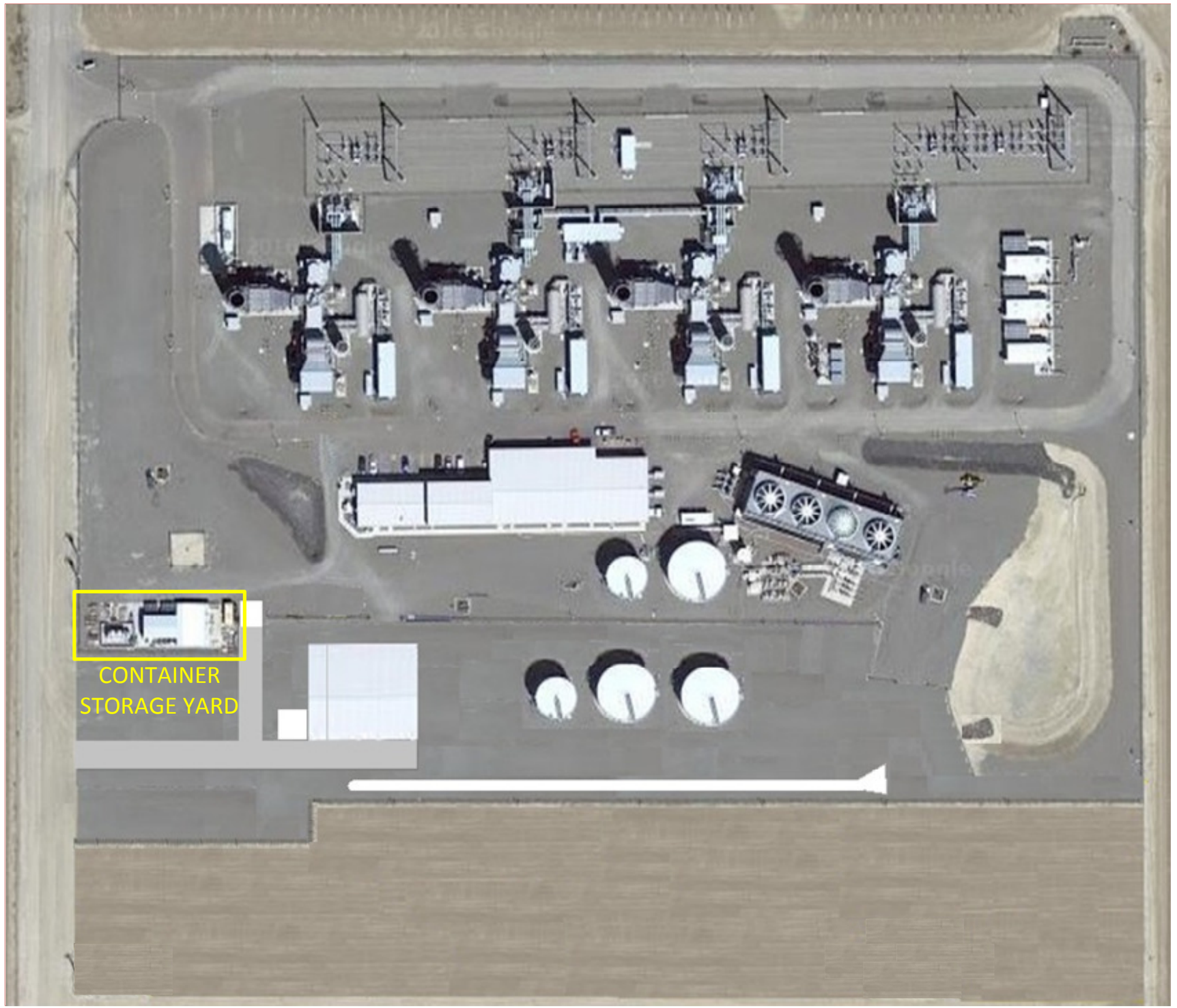


MAP 3A: Water Treatment Building Area



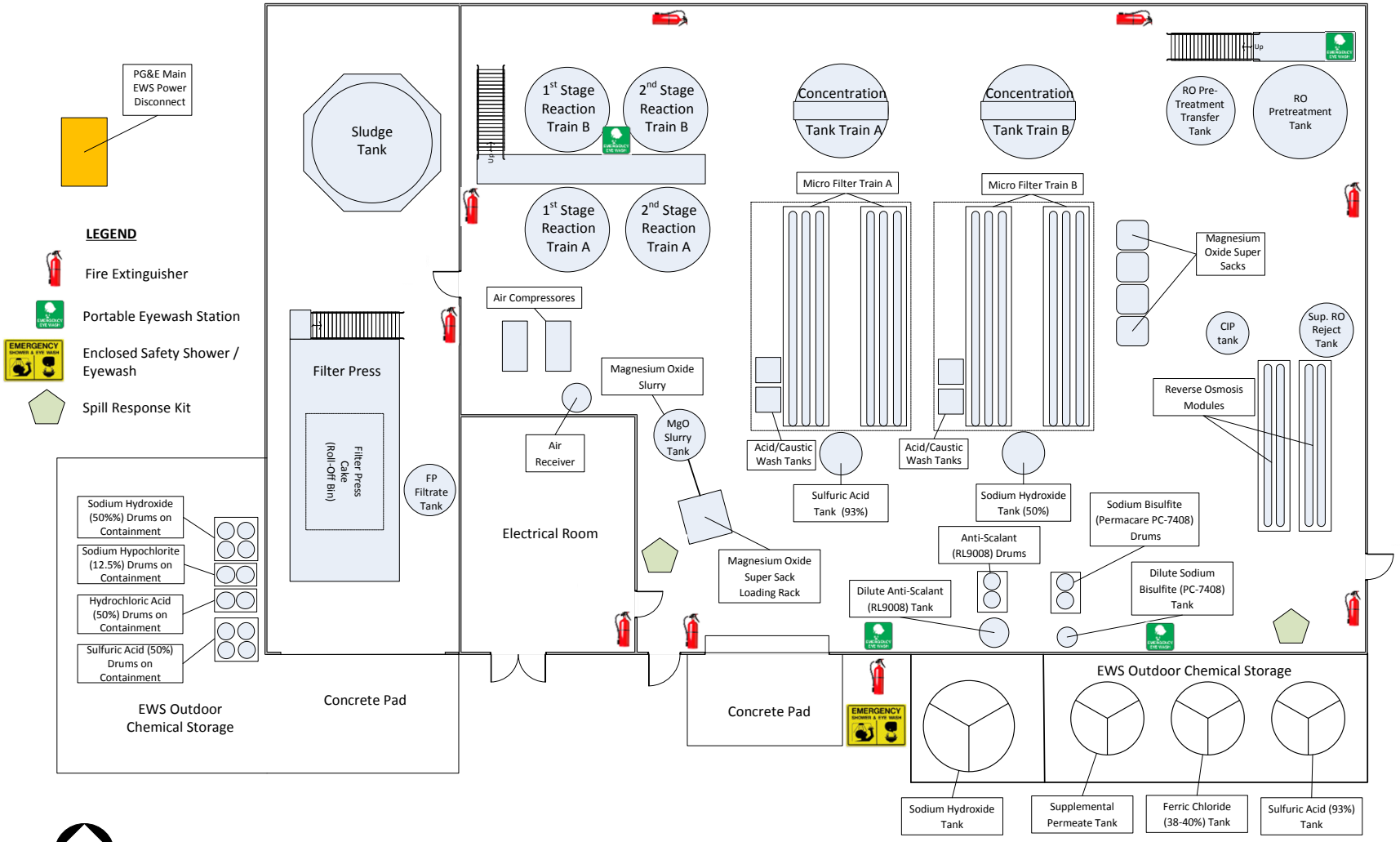
- Diesel Fire Pump Tank (300 gal)
- Sulfuric Acid 93% (1100 gal)
- Sodium Hypochlorite 12.5% (380 gal each)
- NALCO 1720 Oxygen Scavenger (4,400 gal)
- NALCO ELC1304A (405 gal)
- NALCO 3D Trasar 3DT138 (405 gal)
- NALCO 3D Trasar 3DT461 (540 gal)
- ChemTreat CT62 (500 gal)
- ChemTreat CT907 (110 gal)

MAP 4B: Combustion Turbine Area



MAP 7A: Container Storage Yard Area

ENAHANCED WASTEWATER SYSTEM (EWS) FACILITY



MAP 9B: ENHANCED WASTEWATER SYSTEM (EWS) AREA

Lajoie, Barry

From: CERS Automated Messaging - DO NOT REPLY <DoNot.ReplyTo.Cers@calepa.ca.gov>
Sent: Tuesday, March 05, 2019 10:02 AM
To: Lajoie, Barry
Subject: Hazardous Materials Inventory for CERS ID 10153959 Accepted By Regulator

Your **Hazardous Materials Inventory** submittal on *February 22, 2019* for *PANOCHE ENERGY CENTER LLC* (CERS ID 10153959) was **Accepted** by Fresno County Department of Public Health on March 5, 2019. This indicates the regulator has reviewed the submittal element and finds the data/documents meet state and local reporting requirements. The regulator has not necessarily field-verified the submitted data. Any comments from the regulator are shown below.

Thank you for the submittal. Data has not been verified by a facility inspection and may require corrections in the future. No further action is required at this time. Your Hazardous Materials Business Plan shall be reviewed for changes and submitted annually. If you have any questions, please email us at dphcupaportal@fresnocountyca.gov (with your CERS ID or FA number in the subject line) or call CUPA Staff at (559) 600-3271.

Facility Name: PANOCHE ENERGY CENTER LLC
CERS ID: 10153959
Facility Address: 43883 W PANOCHE RD , FIREBAUGH , CA 93622-9720

This is an automated email sent from the CERS System. Please DO NOT REPLY.

Appendix 3E:

(SOIL & WATER-2)

Panoche Energy Center Annual SPCC Inspection Checklist

Date of Inspection: 12/10/18 **Inspector (signature)** DAIZEY LAJOIE, [signature]

Inspection Item	Fire Pump House Diesel Tank (300 gal)	A Unit Fuel Gas Compressor Drains Tank (150 gal)	B Unit Fuel Gas Compressor Drains Tank (150 gal)	C Unit Fuel Gas Compressor Drains Tank (150 gal)
Is containment shell and surrounding equipment in satisfactory condition?	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N
Any evidence of paint failure, extensive corrosion, coating failure, or cracking of tank shell?	☐ Y ☒ N	☐ Y ☒ N	☐ Y ☒ N	☐ Y ☒ N
Any noticeable shell/head distortions, buckling, denting or bulging?	☐ Y ☒ N	☐ Y ☒ N	☐ Y ☒ N	☐ Y ☒ N
Is grounding strap secured and in good condition?	① ☒ Y ☐ N ☐ NA	☒ Y ☐ N ☐ NA	☒ Y ☐ N ☐ NA	☒ Y ☐ N ☐ NA
Any evidence of tank settlement or foundation washout?	☐ Y ☒ N	☐ Y ☒ N	☐ Y ☒ N	☐ Y ☒ N
Are tank supports in satisfactory condition?	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N
Are primary vents free of obstructions?	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N
Are emergency vents operable? Lift as required?	☒ Y ☐ N ☐ NA	☐ Y ☐ N ☒ NA	☐ Y ☐ N ☒ NA	☐ Y ☐ N ☒ NA
Are all valves in good condition, with no leaking, corrosion, or damage?	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N
Are all piping connections tight and fully engaged with no sign of wear or corrosion, and any related piping similarly free of corrosion and wear?	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N
Has the tank liquid level sensing device been tested to ensure proper operation?	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N
Has the interstitial monitor been calibrated or tested for operability annually? For Diesel Tank, is the window clear and clean? For the Fuel Gas Compressor Drains Tanks, are wire connections for level sensors tight and free of corrosion?	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N
Is electrical wiring for control boxes/lights in working order?	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N
Is equipment suitable for continued service?	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N
Are all labels and tags intact and readable?	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N	☒ Y ☐ N
Any other conditions that should be addressed for continued safe operation or that affect the site SPCC Plan?				

Work Orders, Notes, or Comments ① TANK GROUNDED BY COPPER DRAIN LINE

Forward completed checklist to appropriate supervisor

Appendix IV
Annual SPCC Inspection Checklist-Bulk Storage Containers
(Adapted from STI SP001)

Bulk storage containers at the Facility are required to be inspected annually in accordance with the SPCC Plan. This checklist is used to document the results of the inspection. For Bulk Storage Containers, the annual inspection is performed in addition to of one of the monthly inspections. There are no annual inspections required for oil filled operating or electrical equipment, only monthly inspections.

Using the Inspection Checklist
The attached checklist is used for documenting the annual inspections required for Bulk Storage Containers (i.e., fixed tanks) at the facility. Only the following tanks are required to perform an annual inspection:

Tanks Requiring Annual Inspection

- Fire Pump House Diesel Tank (300 gal)
- Fuel Gas Compressor Drains Tanks (3 @150 gal.)

An annual inspection is **not** required for portable containers (such as 55 gallon drums), operating equipment (such as hydraulic oil reservoirs, steam turbine lube oil reservoirs, etc.), nor any electrical equipment (such as transformers).

The annual inspection is performed following the Steel Tank Institute Standard SP001. The facility uses this standard to meet the integrity testing requirements for bulk storage containers.

Who Can Inspect
This visual inspection does not require a certified inspector. It shall be performed by an owner's inspector who is familiar with the site and can identify changes and developing problems.

Remove promptly upon discovery standing water or liquid in the primary tank, secondary containment area, interstice, or spill container. Before discharge to the environment, inspect the liquid for regulated products or other contaminants and disposed of it properly.

In order to comply with EPA SPCC (Spill Prevention, Control and Countermeasure) rules, a facility must regularly test liquid level sensing devices to ensure proper operation (40 CFR 112.8(8)(v).

Non-conforming items important to tank or containment integrity require evaluation by an engineer experienced in AST design, a certified inspector, or a tank manufacturer who will determine the corrective action. Note the non-conformance and corresponding corrective action in the comment section.

Note: If a change has occurred to the tank system or containment that may affect the SPCC plan, the condition should be evaluated against the current plan requirement by a Professional Engineer knowledgeable in SPCC development and implementation.

Inspection Guidance
The following section provides additional details about the questions and responses needed for completing the inspection forms.

Is containment shell and surrounding equipment in satisfactory condition?
Inspect the tank and surrounding containment area. If leaks are evident, take appropriate action consistent with facility practices. Note any damaged, leaking, failing or otherwise suspect areas.

Any evidence of paint failure, extensive corrosion, coating failure, or cracking of tank shell? Check the exterior of the ends and shell of the tank and note any significant corrosion, paint failure or cracking that is observed. If noticeable cracking has occurred, a more detailed inspection may be required to ensure safe continued operation.

Any noticeable shell/head distortions, buckling, denting or bulging?
Observe the tank to check for damage of these types. If observed, take prompt actions consistent with facility practices to address these issues. If noticeable distortions have occurred, a more detailed inspection may be required to ensure safe continued operation.

Is grounding strap secured and in good condition?
Check the grounding strap to make sure remains securely connected to the tank and is not frayed or damaged.

Any evidence of tank settlement or foundation washout?
Check carefully the saddles and supports for the tanks. Note if the tank appears to be leaning, listing, or otherwise not straight and plumb. If so, record on form and notify supervisor.

Are tank supports in satisfactory condition?
Check these supports carefully for corrosion, buckling, or other signs of degradation.

Are primary vents free of obstructions?
Check the primary vent for the presence of any obstructions that could limit the ability of the tank to properly vent during routine operation. Remove any obstructions if observed.

Are emergency vents operable? Lift as required?
Emergency vents are typically 4 inch diameter vents that exit from the top of the Diesel Fire Pump House Tank that have weighted lids as part of their design. There should be two of these on this system, one for the primary tank and one for the secondary tank shell. The weighted lids should be able to be lifted with difficulty. If these are frozen shut, take actions to repair. The Fuel Gas Compressor Drains Tanks do not have easily accessible emergency vents.

Are all valves in good condition, with no leaking, corrosion, or damage?
Check all valves and related equipment in connection with the tank for evidence of leaks, corrosion, or damage. If not in good condition, record on form and submit work order for repair.

Are all piping connections tight and fully engaged with no sign of wear or corrosion, and any related piping similarly free of corrosion and wear?
Check connections, including threaded and flanged connections, for signs of corrosion and leakage. Take actions if these conditions are observed. Ensuring that piping remains in good condition, and free of leaks, corrosion, and wear.

Does the tank liquid level sensing device (gauge) operate as required?
Annually, confirm that the float gauge on the Diesel Fire Pump House Tank reads accurately. This can be accomplished by measuring the level of fuel in the tank and comparing this to the gauge level. Record the results on the form. The Fuel Gas Compressor Drain tanks are manually gauged, so this is NA.

Has the interstitial monitor been calibrated or tested for operability annually?
Level sensing devices, including interstitial monitors that check for the presence of leakage from tanks, are required to be annually checked and verified that they operate correctly.
For the Diesel Fire Pump Tank, is the sight leak gauge window clear and clean?

For the Fuel Gas Compressor Drains Tanks, are wire connections for level sensors tight and free of corrosion? Have these been calibrated/checked consistent with manufacturer's instructions?

Is electrical wiring for control boxes/lights in working order?
If so equipped, check to ensure that electrical control boxes and equipment is in proper working order, and that all wiring is enclosed within conduit and not exposed. Check to make sure controls and lights associated with the tank system are in good working order by observation and operating switches as necessary. Ensure that no bare wires of any kind are present near the tank or equipment. Most areas in and around petroleum tanks are considered Class I or II spaces, and require proper electrical protection. If bare wires or other damage of equipment is noted, take action immediately to ensure safety.

Is equipment suitable for continued service?
Check that all equipment inside containment, and ensure this equipment is in good working order and not leaking. Note any deficiencies, and take appropriate action to ensure the equipment is safe for continued use.

Are all labels and tags intact and readable?
Ensure that all labels and tags identifying equipment are intact and readable. If not, note on form and take action to make sure all are accurate, intact, and readable.

Appendix 3F

(SOIL & WATER-6)

Appendix 3G

(SOIL & WATER-8)

Annual Water Use Summary & Compliance Status

July 1, 2018 - June 30, 2019

Panoche Energy Center

Month-Year	Monthly Groundwater Withdrawl[1] (kgal / mnth)	(Acre Ft / Mnth)
Jul-18	27,185	83.4
Aug-18	26,761	82.1
Sep-18	11,370	34.9
Oct-18	13,194	40.5
Nov-18	13,522	41.5
Dec-18	9,704	29.8
Jan-19	12,895	39.6
Feb-19	6,320	19.4
Mar-19	930	2.9
Apr-19	675	2.1
May-19	2,259	6.9
Jun-19	11,417	35.0
Annual Total (kgal/yr)	136,231	418.1
Annual Limit (acre ft/yr)		1,154
Annual Limit Compliance		**YES**

Note: (1) Data from PEC Daily Report (last day of month)

Calibration Certificate

Telstar Instruments Inc
1717 Solano Way, Suite #34, Concord CA
Tel 925-671-2888 - Fax 925-671-9507

Certificate	**33911-05**
Calibration date	**11/1/2018**
Calibration due date	**11/1/2019**

Customer information

Company name	**Panoche Energy Center**
Address	**43833 W. Panoche RD, Firebaugh**
Contact	**Mario Francisco**

Location of calibration

Company name	**Panoche Energy Center**
Address	**43833 W. Panoche RD, Firebaugh**

Instrument information

Manufacturer	**Siemens 10"**
Model	**1010NR-T2KGS-S2**
S/N	**U23724**
Tag	**FT-39062**
Description	**Service Water #1**

Received	In Tolerance
Returned	In Tolerance

Calibrated range	0	2,400	Gpm
User Specified Tolerance		1.00	**%**
Instrument Output	4	20	Madc

Standards used

This calibration certificate documents the traceability to national standards, which states the units of measurement according to the International System of Units (SI)

ID	Description	Serial number	Certificate	Due date
Fluke	**Fluke 789**	**30360038**		**04/11/19**

Procedure Used **Strap On Flow Comparison**

Environmental conditions \

Ambient temperature	**n/a**	**°F**
Ambient Humidity	**n/a**	**%**

☑ As Found = As Left

As Found

Test	Test Meter	Unit Under Test GPM	Test Meter mA	Unit under test ma	Display Error	Output Error
1		**0.00**	**4.00**	**4.00**		**<0.5**
2.0		**1212**	**12.11**	**12.08**		**<0.5**
3.0		**1225.00**	**12.17**	**12.16**		**<0.5**
4.0		**1237**	**12.21**	**12.24**		**<0.5**
Units*	**Gpm**	**Madc**	**Gpm**	**Madc**	**%**	

As Left

Standard GPM	Expected Output Madc	Flow Display	Measured Output	Display Error	Output Error
Gpm	**Madc**	**Gpm**	**Madc**	**%**	

Error calculated as percent of span

Conformity

☑ **UUT conforms** ☐ **UUT does not conform**

Remarks

Performed electronics calibration. Unit passed calibration, no adjustments required.

Service Engineer **Cory Bettencourt** Date 11/1/2018

Signature *Cory Bettencourt*

Calibration Certificate

Telstar Instruments Inc
1717 Solano Way, Suite #34, Concord CA
Tel 925-671-2888 - Fax 925-671-9507

Certificate	**33911-06**
Calibration date	**11/1/2018**
Calibration due date	**11/1/2019**

Customer information

Company name	**Panoche Energy Center**
Address	**43833 W. Panoche RD, Firebaugh**
Contact	**Mario Francisco**

Location of calibration

Company name	**Panoche Energy Center**
Address	**43833 W. Panoche RD, Firebaugh**

Instrument information

Manufacturer	**Siemens 10"**
Model	**1010NR-T2KGS-S2**
S/N	**U23723**
Tag	**FT-39072**
Description	**Service Water #2**

Received	In Tolerance
Returned	In Tolerance

Calibrated range	0	2,400	Gpm
User Specified Tolerance		1.00	**%**
Instrument Output	4	20	Madc

Standards used

This calibration certificate documents the traceability to national standards, which states the units of measurement according to the International System of Units (SI)

ID	Description	Serial number	Certificate	Due date
Fluke	**Fluke 789**	**30360038**		**04/11/19**

Procedure Used **Strap On Flow Comparison**

Environmental conditions \

Ambient temperature	**n/a**	**°F**
Ambient Humidity	**n/a**	**%**

☑ As Found = As Left

As Found

Test	Test Meter GPM	Unit Under Test GPM	Test meter mA	Unit under test mA	Display Error	Output Error
1		**0.00**	**4.00**	**4.00**		**<0.5**
2.0		**1718**	**15.43**	**15.45**		**<0.5**
3.0		**1730**	**15.50**	**15.53**		**<0.5**
4.0		**1752**	**15.68**	**15.68**		**<0.5**
Units*	**Gpm**	**Madc**	**Gpm**	**Madc**	**%**	

As Left

Standard GPM	Expected Output Madc	Flow Display	Measured Output	Display Error	Output Error
Gpm	**Madc**	**Gpm**	**Madc**	**%**	

Error calculated as percent of span

Conformity

☑ **UUT conforms** ☐ **UUT does not conform**

Remarks

Performed electronics verification. Unit passed calibration, no adjustments required.

Service Enginee **Cory Bettencourt** Date 11/1/2018

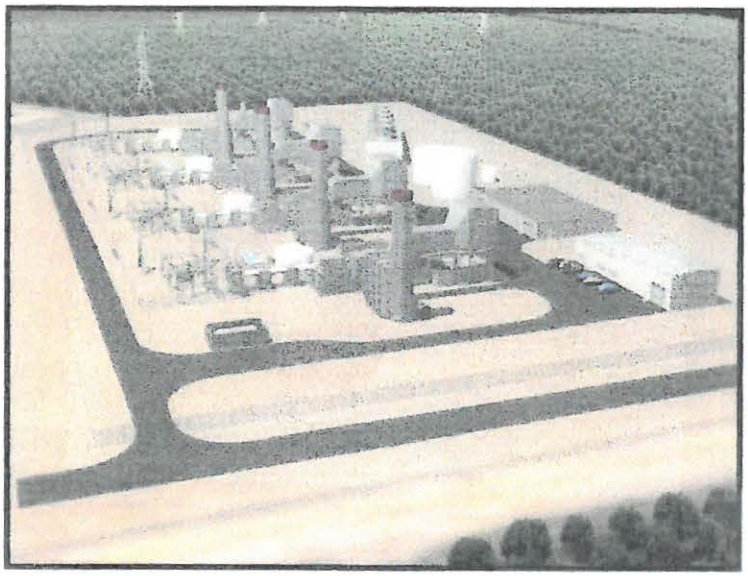
Signature *Cory Bettencourt*

Appendix 3H

(SOIL & WATER-9)

Application for Certification (06-AFC-5)
Fresno County
December 2007 CEC-800-2007-004-CMF

Panoche Energy Center, LLC.



CALIFORNIA
ENERGY
COMMISSION

FINAL COMMISSION DECISION

DECEMBER 2007
(06-AFC-5)
CEC-800-2007-004-CMF

and combustion turbine inlet air evaporative cooler makeup. Prior to the use of groundwater during commercial operation for cooling and process water, the project owner shall install and maintain metering devices as part of the water supply and distribution system to monitor and record in gallons per day the total volume(s) of water supplied to the Panoche Energy Center from groundwater. Those metering devices shall be operational for the life of the project. The project's water use shall not exceed 2,500,000 gallons a day or 1,154 acre-feet per year. The project owner shall prepare an annual Water Use Summary, which will include the monthly range and monthly average of daily non-potable water usage in gallons per day, and total water used by the project on a monthly and annual basis in acre-feet. The project owner shall record on-site potable water use on a monthly basis. For subsequent years, the annual Water Use Summary shall also include the yearly range and yearly average water use by the project. The project owner shall submit the annual Water Use Summary to the CPM as part of the annual compliance report. If the amount of water that is to be used by PEC will exceed 2,500,000 gallons a day or 1,154 Acre-feet per year during any annual reporting period, the project owner shall provide a written request and explanation for the anticipated water-use increase to the CPM sixty (60) days prior to the date when the water-use limit is expected to be exceeded. If the project owner can demonstrate that the requested increase is necessary and is not caused by wasteful practices or malfunctions in the water processing systems, the CPM shall approve an up to one-year increase in the water-use limit for the period requested.

Verification: At least sixty (60) days prior to commercial operation of Panoche Energy Center, the project owner shall submit to the CPM evidence that metering devices have been installed and are operational on the groundwater supply and distribution system.

The project owner shall submit a Water Use Summary to the CPM in the annual compliance report. The project owner shall provide a report on the servicing, testing and calibration of the metering devices in the annual compliance report.

SOIL & WATER-9 Prior to site mobilization, the project owner shall provide a copy of an executed agreement with Westlands Water District (Westlands) and evidence of its one-time payment of $1.5 million to Westlands for the purpose of conserving fresh water at an average of, or greater than, 1154 ac-ft of water per year over the life of the project through the Expanded Irrigation System Improvement Program (EISIP). The executed agreement shall include provisions for the following:

1. A term of the agreement equal to the life of the PEC project;

2. An annual report for the life of the PEC indicating the number and acreage of parcels involved in the EISIP for the current and previous years since EISIP inception in 2000, the total funding provided to the EISIP program and an estimate of fresh water conserved.
3. The annual account balance in the PEC's funded EISIP account;
4. The Project Owner shall be responsible for obtaining from Westlands Water District all data or other information necessary to conduct the annual water savings review; and
5. In the event Westlands Water District discontinues the EISIP, the funds represented by Applicant's contribution shall be allocated to other conservation or similar programs. Any such re-allocation shall first be submitted to the Energy Commission for approval.

Verification: Prior to site mobilization for construction of Panoche Energy Center, the project owner shall submit to the CPM a copy of an executed agreement with Westlands and evidence of its one-time payment of $1.5 million to Westlands for the purpose of conserving fresh water through the EISIP. The project owner shall include in its Annual Compliance Report the following information regarding the use of the PEC contributed funds:

1. The number and acreage of parcels involved in the EISIP for the current and previous years since EISIP inception in 2000, and an estimate of fresh water conserved.

2. The end-of-year account balance in the PEC's funded EISIP account;

3. For the current and previous years since the inception of the EISIP; the total number and acreage of parcels involved in the EISIP, the funding provided through the EISIP program, and an estimate of annual fresh water conserved;

4. A general description for each loan funded by the Westlands Water District's EISIP during the previous calendar year including the following:

    i. The date and amount of the loan;

    ii. The change in the irrigation practice from before to after implementation of the irrigation conservation measure (as would apply for new conservation measures compared to replacements-in-kind); and

    iii. The type of new equipment installed or modifications to existing equipment.

November 1, 2007, and USEPA indicates that the permit requirements are unlikely to change from those in the draft permit. (Ex. 107.) Sanitary wastes from the administration and control building and other restrooms located on site would be disposed of in a septic system and leach field located directly south of the administration and control building. (Ex. 100, pp. 4.9-14 – 4.9-15.)

Staff found no potential water quality impacts from the proposed use of groundwater from the confined aquifer. Its analysis explains why, due to historical use patterns and modern agricultural economics, extensive groundwater pumping is unlikely even if surface water deliveries via the Central Valley Project (CVP) were curtailed. (Ex. 100, p. 4.9-7 – 4.9-8.)

In its Final Staff Assessment, Staff found the Applicant's proposed use of water from the confined aquifer inconsistent with state water policies[14] which allow the use of fresh inland waters for power plant cooling only where alternative water supply sources or cooling technologies are environmentally undesirable or economically unsound. The policies prefer the use of lower quality waters over those of higher qualities. Staff believed that the Applicant should instead draw its water from the semi-confined aquifer, which was of a lower quality than the water in the confined aquifer. (Ex. 100, p. 4.9-26.) In its pre-hearing brief, the Applicant argued to the contrary.

The difference of opinion between Staff and the Applicant was settled, however, prior to the evidentiary hearing. Earlier in the proceeding, the Applicant offered to contribute funds to an agricultural water conservation program operated by the Westlands Water District. Staff initially found the benefits of that program to be insufficient and uncertain. (Ex. 100, p. 4.9-28 – 4.9-29.) In its prehearing testimony the Applicant increased the amount of its contribution from $500,000 to $1,500,000. (Ex. 40, Answer 15.)

---

[14] State Water Resources Control Board Policy 75-58 and the Energy Commission's *2003 Integrated Energy Policy Report.*

Westlands Water District's Expanded Irrigation System Improvement Program (EISIP) offers low interest loans to water users and land owners for the design, lease-purchase, and installation of water conserving micro-irrigation systems. The program began in 2000 and has steadily increased its effectiveness since then. Currently, the program is supported with a revolving fund on the order of about $10 million which allows for about 25% or $2.5 million per year to be made available for funding new or ongoing conservation efforts using funds returned to the account from farmer's loan payments over a 4-year term.

The micro-irrigation systems tend to have a service life of about 8 years before needing replacement. At that time, farmers may apply for a new low interest loan (at 3.1% annually) to replace their system. Many of the new installations of micro-irrigation, such as using buried drip tape, are replacing furrow irrigation practices of row crops with potential for significant water conservation benefits. The EISIP lease may be executed for up to $130,000, and after requiring a 20% deposit from the farmer, $104,000 may be financed with the low-interest loan. The irrigation improvements for each loan are normally applied to a 160-acre parcel (1/4 of a square mile).

If the Applicant contributed $1,500,000 to the EISIP, about 15 additional leases could be created, applying more efficient irrigation to about 2,400 acres (3.75 square miles). Based on Westland Irrigation District's experience and studies in the agricultural industry, the annual water savings over the first 4 years after implementation would be about 628 acre-feet/year (AFY). With the loans being repaid in 4 years, the funds could be reallocated and applied during Year 5 to an additional 15 parcels resulting in an additional 628 AFY for a total water conservation of 1,256 AFY during years 5 – 8 of PEC's project operation. Assuming after 8 years the micro irrigation equipment needed replacement for the parcels initially funded, the cycle could be repeated to maintain micro irrigation indefinitely for about 30 parcels (4,800 acres) and water conservation of about 1,256 AFY. The Applicant would draw up to 1,154 AFY from the confined

aquifer; thus the Applicant's EISIP contribution would result in net conservation of about 9% more water than the PEC would use annually starting in year 5 and thereafter. This estimate assumes maximum water use possible by PEC based on an annual operation of 5,000 hours per year. **Soil and Water Resources – Table 1**, below, provides a cumulative accounting of the Applicant's water use and the expected conservation from the Applicant's contribution to the EISIP.

SOIL AND WATER RESOURCES –Table 1
Cumulative Accounting of PEC's Proposed Water Use of the Confined Aquifer Compared to Conservation of CVP Water

End of Year	PEC's Avg. Annual Water Use (AFY)	PEC's Cumulative Water Use (AF)	Annual CVP Water Savings from Applicant's Contribution to EISIP (AFY)	Cumulative CVP Water Savings from Applicant's Contribution to EISIP (AF)
Construction			628	628
1	1,154	1,154	628	1,256
2	1,154	2,308	628	1,884
3	1,154	3,462	628	2,512
4	1,154	4,616	1,256	3,768
5	1,154	5,770	1,256	5,024
6	1,154	6,924	1,256	6,280
7	1,154	8,078	1,256	7,536
8	1,154	9,232	1,256	8,792
9	1,154	10,386	1,256	10,048
10	1,154	11,540	1,256	11,304
11	1,154	12,694	1,256	12,560
12	1,154	13,848	1,256	13,816
13	1,154	15,002	1,256	15,072
14	1,154	16,156	1,256	16,328
15	1,154	17,310	1,256	17,584
16	1,154	18,464	1,256	18,840
17	1,154	19,618	1,256	20,096
18	1,154	20,772	1,256	21,352
19	1,154	21,926	1,256	22,608
20	1,154	23,080	1,256	23,864

The cumulative volume of CVP water conserved begins exceeding the cumulative water used by PEC during the 13th year of PEC operation. By Year 20, the cumulative volume of CVP water conserved exceeds the cumulative

AGREEMENT

This AGREEMENT (the "***Agreement***") is entered into as of January 10, 2008 by and between Westlands Water District, a California Water District ("***Westlands***") and Panoche Energy Center, LLC, a Delaware limited liability company ("***PEC***"). Westlands and PEC are collectively referred to herein as the "Parties."

RECITALS

A. Westlands purveys Central Valley Project water to landowners and water users within its service area.

B. Westlands administers the Expanded Irrigation System Improvement Program ("***EISIP***"). The EISIP provides low interest loans to water users and landowners for the lease-purchase of irrigation system equipment for the purpose of promoting water conservation. The EISIP allows for the design of irrigation systems and purchase of portable aluminum irrigation pipe, micro-irrigation, linear move, center pivots, and tail-water reuse systems ("Conservation Project").

C. PEC has entered into a power purchase agreement with Pacific Gas & Electric Company for delivery of capacity and energy of up to 400MW up to 5000 hours per year for a 20 year period beginning in August 2009.

D. PEC is in the process of permitting the 400MW peaking facility through the California Energy Commission. PEC has received final approvals and expects financial closing to occur in January 2008.

E. The PEC project will be constructed on 12.8 acres of land adjacent to the PG&E Panoche substation located in west Fresno County approximately 2 miles east of I-5 on West Panoche Road.

F. As an enhancement to its proposed water usage and discharge plan, PEC proposes to make a contribution to Westlands' EISIP.

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. Contribution to Westlands. Subject to the conditions described in Section 2 below, PEC will make a one-time contribution to Westlands in the amount of $1,500,000 ("***Contribution***") to be used at Westlands' sole and absolute discretion for the EISIP. The Contribution shall be used by Westlands for the EISIP during the construction period and life of the PEC project, through August 2029. The Contribution will be made by check or wire transfer within thirty (30) days after satisfaction of the conditions described in Section 2 below.

2. Conditions to Contribution. PEC's making of the Contribution is subject to satisfaction of the following conditions:

(a) Issuance by the California Energy Commission of a final order approving the PEC project, and expiration of all applicable appeal period without the filing of an appeal, or if an appeal is filed, resolution of the appeal in a manner satisfactory to PEC;

(b) Closing of the financing for construction of the PEC project.

3. Reporting Requirements. Westlands will, on an annual basis:

(a) Make available to PEC at Westland's home office in Fresno, California such records as are publicly available pursuant to the California Public Records Act (Govt. Code § 6250 *et seq.*) PEC seeks such records to assist with its CEC reporting requirements as shown on Attachment A. Nothing in this Agreement shall require Westlands to (i) disclose records that are not otherwise disclosable under the California Public Records Act, or (ii) prepare and/or disclose records, lists, or compilations of information that does not exist.

(b) Provide to PEC the end-of-year balance of the Contribution.

4. Other Conditions.

(a) The Contribution will not be refunded or returned to PEC.

(b) In the event Westlands discontinues the EISIP, any and all money remaining from the Contribution shall be allocated by Westlands at its sole and absolute discretion to other conservation or similar programs; provided that any such reallocation shall first be submitted by PEC to the California Energy Commission for approval.

(c) This Agreement does not establish for PEC a right to any water from Westlands.

(d) This Agreement does not, in any way, require Westlands to provide water to PEC or to any other person or entity.

(e) Any and all money remaining from the Contribution after August 30, 2029 shall become the property of Westlands to be used by Westlands at its sole and absolute discretion for any purpose.

5. Term. This Agreement shall become effective upon execution by the Parties and shall terminate on August 30, 2029.

Westlands Water District

By: _____

Name: Dave Ciapponi

Title: Assistant General Manager

Panoche Energy Center, LLC, a Delaware limited liability company

By: _____

Name: Gary R. Chandler

Title: President

(1) Number and acreage of parcels involved in the EISIP program for the current and prior years since EISIP inception in 2000.

(2) Annual end-of-year account balance in the PEC's funded EISIP account.

(3) For loans funded from PEC's funded EISIP account, a general description for each loan:

(a) The date and amount of the loan;

(b) The change in the irrigation practice from before to after implementation of the irrigation conservation measure; and

(c) The type of new equipment installed or modifications to existing equipment.

Assmumptions

1) Water Saved per loan:

Grants	AFY Saved	Water Saved per Loan
15	628	41.9

1) From CEC Final Commission Decision (page 183-184)

2) Duration of each EISIP Funded Irrigation Project: 8 years

1) From CEC Final Commission Decision (page 183)

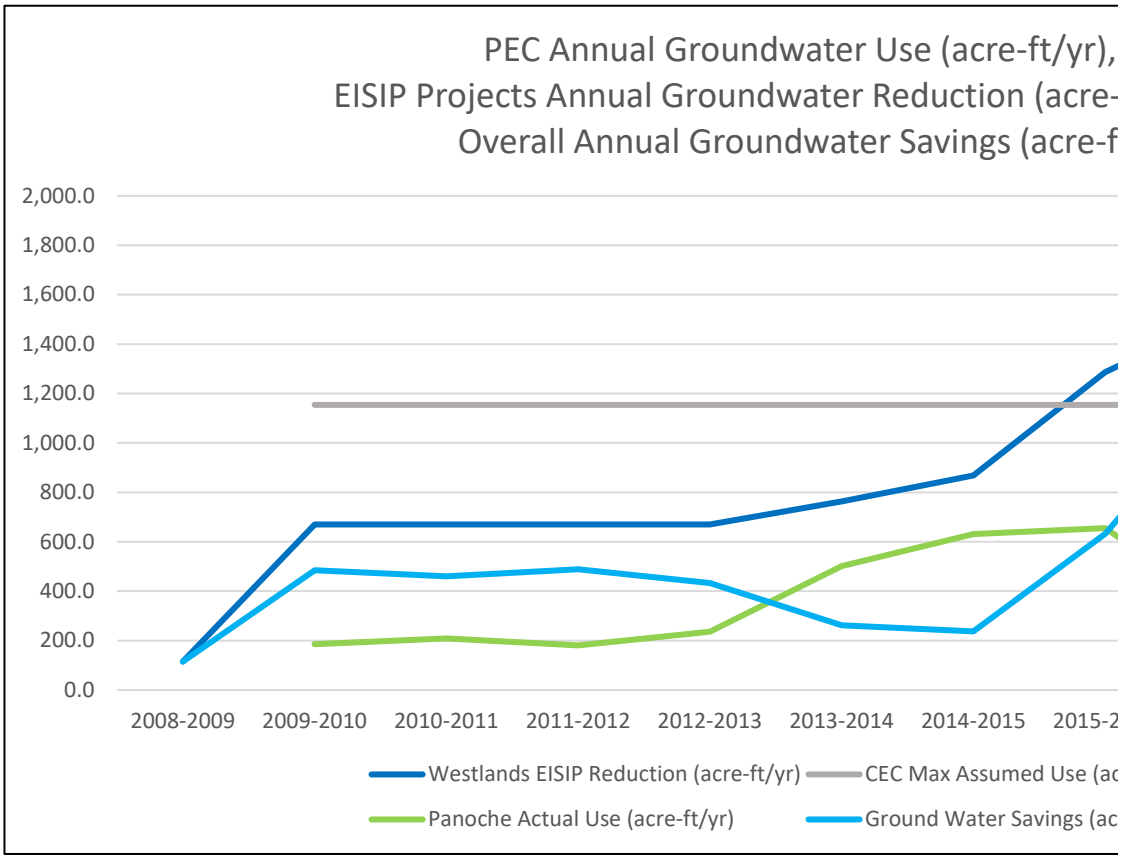
EISIP III Loans

Date	Lease No	Grant	From	To	Acres	2008 Year 1 (acre-ft)
1/17/2008	343	$82,280.88	Furrow	Drip Irrigation	160	10.5
1/17/2008	344	$83,049.19	Furrow	Drip Irrigation	160	10.5
1/29/2008	345	$79,003.87	Furrow	Drip Irrigation	160	10.5
2/7/2008	346	$130,000.00	Furrow	Drip Irrigation	160	10.5
2/7/2008	347	$27,796.71	Furrow	Drip Irrigation	160	10.5
2/5/2008	348	$130,000.00	Furrow	Drip Irrigation	160	10.5
2/5/2008	349	$67,589.72	Furrow	Drip Irrigation	160	10.5
4/22/2008	350	$130,000.00	Furrow	Drip Irrigation	160	20.9
4/22/2008	351	$123,894.32	Furrow	Drip Irrigation	160	20.9
9/22/2008	352	$44,111.49	Furrow	Drip Irrigation	160	
9/22/2008	353	$61,164.54	Furrow	Drip Irrigation	160	
9/23/2008	354	$49,779.74	Furrow	Drip Irrigation	160	
11/6/2008	355	$120,234.26	Furrow	Drip Irrigation	160	
10/20/2008	356	$87,968.37	Furrow	Drip Irrigation	160	
10/24/2008	357	$125,251.46	Furrow	Drip Irrigation	160	
10/28/2008	358	$128,868.90	Furrow	Drip Irrigation	160	
12/3/2012	381	$130,000.00	Furrow	Drip Irrigation	160	
12/7/2012	382	$79,654.86	Furrow	Drip Irrigation	160	
3/1/2013	388	$130,000.00	Furrow	Drip Irrigation	160	
3/27/2014	401	$85,833.42	Furrow	Drip Irrigation	160	
6/11/2014	P21	$67,600.00	Furrow	Drip Irrigation	160	
6/11/2014	P22	$67,600.00	Furrow	Drip Irrigation	160	
6/11/2014	P23	$67,600.00	Furrow	Drip Irrigation	160	
6/11/2014	P24	$67,600.00	Furrow	Drip Irrigation	160	
6/16/2014	P25	$67,600.00	Furrow	Drip Irrigation	160	
10/30/2014	P28	$50,261.50	Furrow	Drip Irrigation	160	
10/30/2014	P29	$66,767.99	Furrow	Drip Irrigation	160	
1/22/2015	P30	$67,000.00	Furrow	Drip Irrigation	160	
12/22/2014	402	$130,000.00	Furrow	Drip Irrigation	160	
4/29/2015	403	$130,000.00	Furrow	Drip Irrigation	160	
4/29/2015	404	$130,000.00	Furrow	Drip Irrigation	160	

4/26/2015	405	$129,360.04	Furrow	Drip Irrigation	160
5/28/2015	406	$130,000.00	Furrow	Drip Irrigation	160
9/11/2015	407	$30,026.12	Furrow	Drip Irrigation	160
11/6/2015	408	$130,000.00	Furrow	Drip Irrigation	160
1/4/2016	409	$112,474.63	Furrow	Drip Irrigation	160
2/11/2016	410	$84,049.99	Furrow	Drip Irrigation	160
2/19/2016	411	$82,017.00	Furrow	Drip Irrigation	160
4/19/2016	412	$91,946.60	Furrow	Drip Irrigation	160
4/18/2016	413	$92,567.18	Furrow	Drip Irrigation	160
4/18/2016	414	$84,965.58	Furrow	Drip Irrigation	160
4/18/2016	415	$75,958.17	Furrow	Drip Irrigation	160
5/19/2016	416	$71,728.66	Furrow	Drip Irrigation	160
6/10/2016	417	$36,519.05	Furrow	Drip Irrigation	160
8/16/2016	418	$130,000.00	Furrow	Drip Irrigation	160
10/14/2016	419	$94,303.80	Furrow	Drip Irrigation	160
10/14/2016	420	$89,796.20	Furrow	Drip Irrigation	160
11/10/2016	421	$58,119.25	Furrow	Drip Irrigation	160
11/10/2016	422	$117,163.16	Furrow	Drip Irrigation	160
11/10/2016	423	$130,000.00	Furrow	Drip Irrigation	160
9/28/2017	P34	$67,000.00	Furrow	Drip Irrigation	160
11/15/2017	427	$130,000.00	Furrow	Drip Irrigation	160
11/30/2017	P35	$67,000.00	Furrow	Drip Irrigation	160
11/16/2017	P36	$57,405.88	Furrow	Drip Irrigation	160
11/27/2017	P37	$24,947.67	Furrow	Drip Irrigation	160
4/19/2018	435	$58,050.54	Furrow	Drip Irrigation	160
5/24/2018	P45	$20,702.77	Furrow	Drip Irrigation	160
5/24/2018	P46	$20,702.77	Furrow	Drip Irrigation	160
5/24/2018	P47	$20,702.77	Furrow	Drip Irrigation	160
7/12/2018	P49	$136,739.01	Furrow	Drip Irrigation	160
12/13/2018	P51	$159,054.08	Furrow	Drip Irrigation	160
12/17/2018	P50	$124,960.05	Furrow	Drip Irrigation	160
2/5/2019	P52	$159,448.00	Furrow	Drip Irrigation	160
2/21/2019	P53	$135,709.05	Furrow	Drip Irrigation	160
3/4/2019	436	$70,286.03	Furrow	Drip Irrigation	160
4/5/2019	P54	$132,798.21	Furrow	Drip Irrigation	160
4/5/2019	P55	$131,377.96	Furrow	Drip Irrigation	160
5/7/2019	P56	$119,565.93	Furrow	Drip Irrigation	160
5/13/2019	437	$63,334.98	Furrow	Drip Irrigation	160
				Total Acres:	10400

Reporting Year:	**2008-2009**
EISIP Year:	**Year 1**
CEC Final Commission Decision Estimated EISIP Savings (acre-ft/yr)	628
Westlands EISIP Reduction (acre-ft/yr)	115.1
Westlands EISIP Cumulative Reduction (acre-ft)	115.1
CEC Max Assumed Use (acre-ft/yr)	
CEC Max Assumed Cumulative (acre-ft)	
Panohce Actual Use (kgal/yr)	0

Panoche Actual Use (acre-ft/yr)	
Panoche Actual Cumulative Use (acre-ft)	
Ground Water Savings (acre-ft/yr)	115.1
Cumulative Groundwater Savings (acre-ft)	115.1



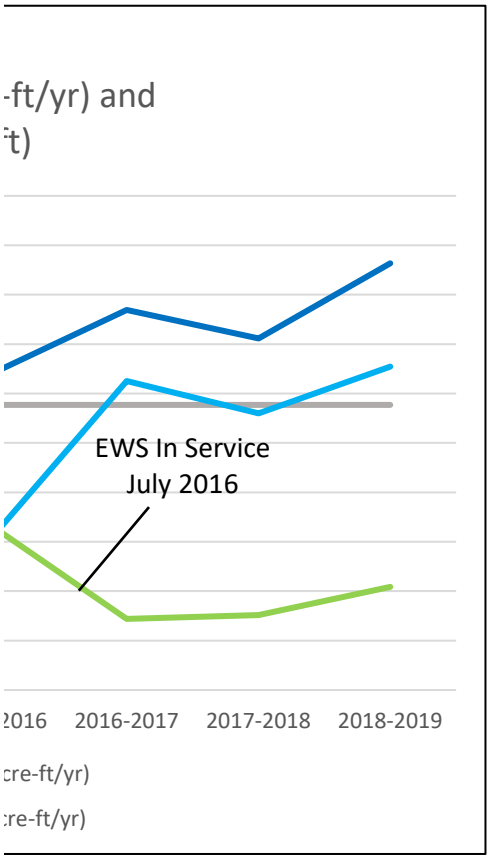
Westlands Water District Annu

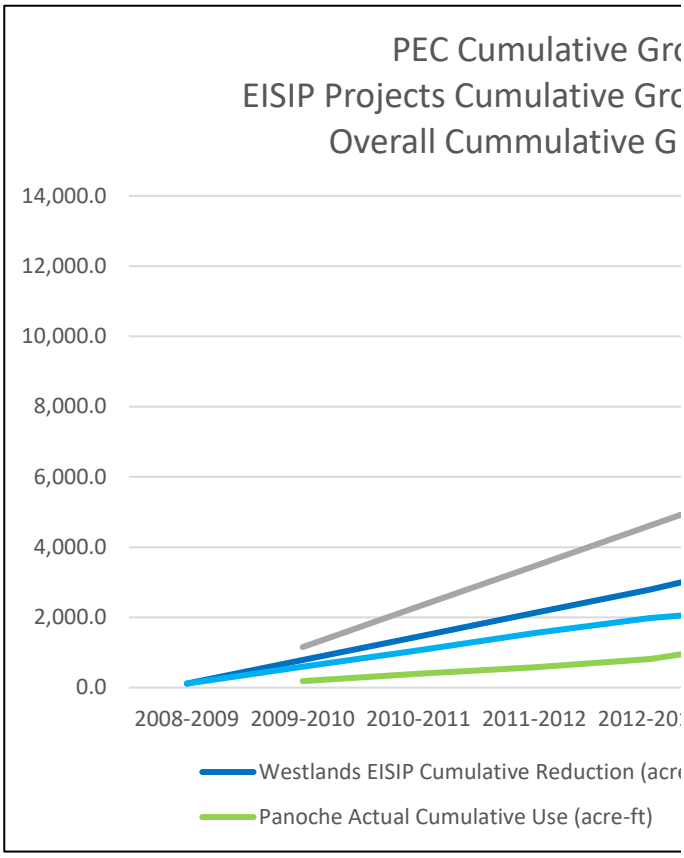
2009 Year 2 (acre-ft)	2010 Year 3 (acre-ft)	2011 Year 4 (acre-ft)	2012 Year 5 (acre-ft)	2013 Year 6 (acre-ft)	2014 Year 7 (acre-ft)	2015 Year 8 (acre-ft)	2016 Year 9 (acre-ft)	2017 Year 10 (acre-ft)	2018 Year 11 (acre-ft)
41.9	41.9	41.9	41.9	41.9	41.9	41.9	31.4		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	31.4		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	31.4		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	31.4		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	31.4		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	31.4		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	31.4		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	20.9		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	20.9		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9		
				41.9	41.9	41.9	41.9	41.9	41.9
				41.9	41.9	41.9	41.9	41.9	41.9
				10.5	41.9	41.9	41.9	41.9	41.9
					20.9	41.9	41.9	41.9	41.9
					10.5	41.9	41.9	41.9	41.9
					10.5	41.9	41.9	41.9	41.9
					10.5	41.9	41.9	41.9	41.9
					10.5	41.9	41.9	41.9	41.9
					10.5	41.9	41.9	41.9	41.9
						41.9	41.9	41.9	41.9
						41.9	41.9	41.9	41.9
						41.9	41.9	41.9	41.9
						41.9	41.9	41.9	41.9
						20.9	41.9	41.9	41.9
						20.9	41.9	41.9	41.9

20.9	41.9	41.9	41.9
10.5	41.9	41.9	41.9
	41.9	41.9	41.9
	41.9	41.9	41.9
	41.9	41.9	41.9
	10.5	41.9	41.9
	10.5	41.9	41.9
	20.9	41.9	41.9
	20.9	41.9	41.9
	20.9	41.9	41.9
	20.9	41.9	41.9
	20.9	41.9	41.9
	10.5	41.9	41.9
	10.5	41.9	41.9
		41.9	41.9
		41.9	41.9
		41.9	41.9
		41.9	41.9
		41.9	41.9
			41.9
			41.9
			41.9
			41.9
			41.9
			20.9
			20.9
			20.9
			20.9
			10.5

2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019
Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
628	628	628	1,256	1,256	1,256	1,256	1,256	1,256	1,256
669.9	669.9	669.9	669.9	764.1	868.7	1,287.4	1,538.6	1,423.5	1,727.0
785.0	1,454.9	2,124.7	2,794.6	3,558.7	4,427.4	5,714.8	7,253.4	8,676.9	10,403.9
1,154	1,154	1,154	1,154	1,154	1,154	1,154	1,154	1,154	1,154
1,154	2,308	3,462	4,616	5,770	6,924	8,078	9,232	10,386	11,540
60,446.9	68,138.7	58,876.9	77,019.5	163,478.4	205,881.3	213,533.8	93,943.6	98,988.8	

185.5	209.1	180.7	236.4	501.7	631.8	655.3	288.3	303.8	418.1
185.5	394.6	575.3	811.7	1,313.4	1,945.2	2,600.5	2,888.8	3,192.6	3,610.7
484.4	460.8	489.2	433.5	262.4	236.9	632.1	1,250.3	1,119.7	1,308.9
599.5	1,060.3	1,549.4	1,982.9	2,245.3	2,482.2	3,114.3	4,364.6	5,484.3	6,793.2



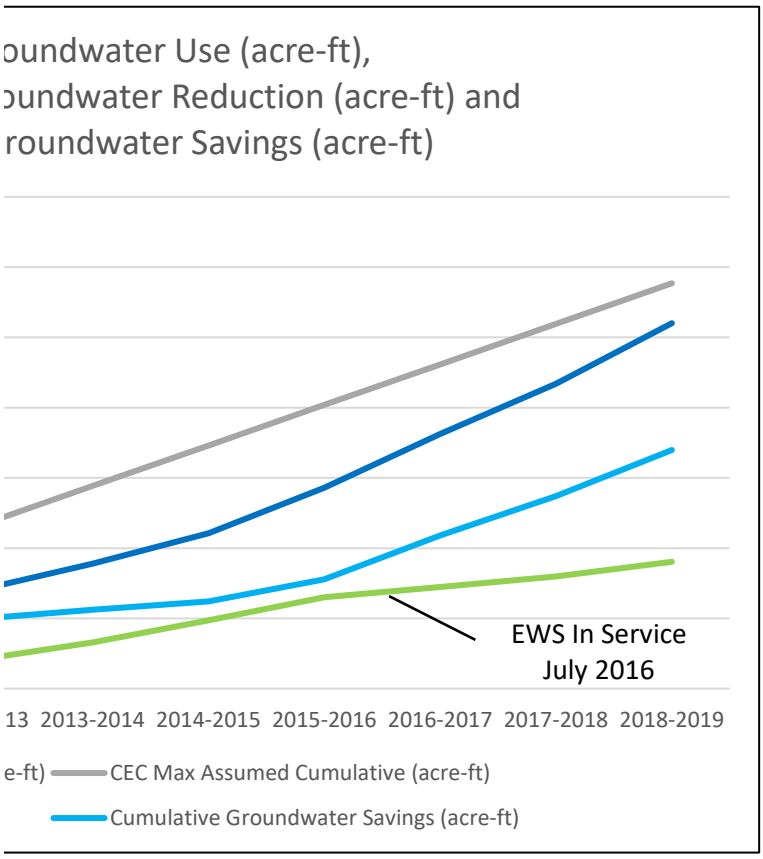


ıal EISIP Water Savings by Loan

2019 Year 12 (acre-ft)	2020 Year 13 (acre-ft)	2021 Year 14 (acre-ft)	2022 Year 15 (acre-ft)	2023 Year 16 (acre-ft)	2024 Year 17 (acre-ft)	2025 Year 18 (acre-ft)	2026 Year 19 (acre-ft)	2027 Year 20 (acre-ft)	2028 Year 21 (acre-ft)
41.9	41.9								
41.9	41.9								
41.9	41.9	31.4							
41.9	41.9	41.9	20.9						
41.9	41.9	41.9	31.4						
41.9	41.9	41.9	31.4						
41.9	41.9	41.9	31.4						
41.9	41.9	41.9	31.4						
41.9	41.9	41.9	31.4						
41.9	41.9	41.9	41.9						
41.9	41.9	41.9	41.9						
41.9	41.9	41.9	41.9						
41.9	41.9	41.9	41.9						
41.9	41.9	41.9	41.9	20.9					
41.9	41.9	41.9	41.9	20.9					

41.9	41.9	41.9	41.9	20.9					
41.9	41.9	41.9	41.9	31.4					
41.9	41.9	41.9	41.9	41.9					
41.9	41.9	41.9	41.9	41.9					
41.9	41.9	41.9	41.9	41.9					
41.9	41.9	41.9	41.9	41.9	31.4				
41.9	41.9	41.9	41.9	41.9	31.4				
41.9	41.9	41.9	41.9	41.9	20.9				
41.9	41.9	41.9	41.9	41.9	20.9				
41.9	41.9	41.9	41.9	41.9	20.9				
41.9	41.9	41.9	41.9	41.9	20.9				
41.9	41.9	41.9	41.9	41.9	20.9				
41.9	41.9	41.9	41.9	41.9	31.4				
41.9	41.9	41.9	41.9	41.9	31.4				
41.9	41.9	41.9	41.9	41.9	41.9				
41.9	41.9	41.9	41.9	41.9	41.9				
41.9	41.9	41.9	41.9	41.9	41.9				
41.9	41.9	41.9	41.9	41.9	41.9				
41.9	41.9	41.9	41.9	41.9	41.9				
41.9	41.9	41.9	41.9	41.9	41.9	41.9			
41.9	41.9	41.9	41.9	41.9	41.9	41.9			
41.9	41.9	41.9	41.9	41.9	41.9	41.9			
41.9	41.9	41.9	41.9	41.9	41.9	41.9			
41.9	41.9	41.9	41.9	41.9	41.9	41.9			
41.9	41.9	41.9	41.9	41.9	41.9	41.9	20.9		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	20.9		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	20.9		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	20.9		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	31.4		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9		
41.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9		
31.4	41.9	41.9	41.9	41.9	41.9	41.9	41.9	10.5	
31.4	41.9	41.9	41.9	41.9	41.9	41.9	41.9	10.5	
20.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	20.9	
20.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	20.9	
20.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	20.9	
20.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	20.9	
20.9	41.9	41.9	41.9	41.9	41.9	41.9	41.9	20.9	

2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029
Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21
1,256	1,256	1,256	1,256	1,256	1,256	1,256	1,256	1,256	1,256
2,093.3	2,218.9	2,124.7	2,020.1	1,601.4	1,235.1	795.5			
12,497.2	14,716.1	16,840.9	18,860.9	20,462.3	21,697.4	22,492.9	22,492.9	22,492.9	22,492.9
1,154	1,154	1,154	1,154	1,154	1,154	1,154	1,154	1,154	1,154
12,694	13,848	15,002	16,156	17,310	18,464	19,618	20,772	21,926	23,080


oundwater Use (acre-ft),
oundwater Reduction (acre-ft) and
roundwater Savings (acre-ft)
EWS In Service
July 2016
13 2013-2014 2014-2015 2015-2016 2016-2017 2017-2018 2018-2019
e-ft) CEC Max Assumed Cumulative (acre-ft)
Cumulative Groundwater Savings (acre-ft)

2029	2030	2031	2032
Year 22	Year 23	Year 24	Year 25
(acre-ft)	(acre-ft)	(acre-ft)	(acre-ft)

2029-2030	2030-2031	2031-2032	2032-2033
Year 22	Year 23	Year 24	Year 25
1,256	1,256	1,256	1,256
22,492.9	22,492.9		
1,154	1,154	1,154	1,154
24,234	25,388	26,542	27,696

Appendix 3I

(VIS-1)

January 6, 2016

County of Fresno: Department of Public Works and Planning
2220 Tulare Street, Sixth Floor
Fresno, California 93721

Dear Albert Aguilar:

Subject: Panoche Energy Center-43833 W. Panoche, Firebaugh California
Paint Color-Wastewater Tank
-Water Treatment Building

Amec Foster Wheeler is requesting review and comments of the wastewater system tanks and water treatment building construction paint color by the County of Fresno in ordinance of the California Energy Commission. Included in our submission package is a color chart for the building paint color (**Fox Grey**) and the second is a color chart for the tanks (**Standard Topcoat Color Grey**). These colors were chosen to match as closely as possible the existing tanks and existing building colors.

- American Buildings, SP-Cool Coatings Paint Color Chart.pdf
- Coating Colors.pdf.

We ask that Fresno County please complete the review and provide any comments you may have by January 15, 2016.

Please don't hesitate to contact either of the undersigned should you have any questions.

Sincerely yours,
Amec Foster Wheeler
Environment & Infrastructure, Inc.

Brad Florentin, PE
Associate Engineer
Direct Tel.: (970) 403-0714
E-mail: bradley.florentin@amec.com

Spencer Thomas Archer, PE
Senior Engineer
Direct Tel.: (916) 853-8926
E-mail: spencer.archer@amecfw.com

SP-COOL™ COATINGS

Silicone-Polyester COOL Paint System

This Silicone-Polyester-COOL Paint System is a two-coat system that offers superior quality and durability.

AMERICAN BUILDINGS
A NUCOR COMPANY

Polar White † IR .66 SRI 79

Sandstone † IR .59 SRI 70

Sagebrush Tan † IR .47 SRI 53

Fox Gray † IR .43 SRI 47 ✓

Burnished Slate † IR .31 SRI 32

Brick Red † IR .32 SRI 32

Hunter Green † IR .26 SRI 25

Aztec Blue † IR .25 SRI 24

All standard Silicone- Polyester colors shown on this chart feature a 25 year finish warrantee.
Warrantees apply only to the finish coat of exterior mounted panels. Contact us for information.

Colors shown closely approximate actual coating colors.
These colors utilize Cool Coating Technology.

†ENERGY STAR® Qualified Color

ENERGY STAR

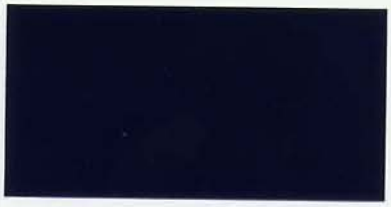
SP-COOL STANDARD COLOR AVAILABILITY

Panel Type	Standard Gauges	Polar White	Sandstone	Sagebrush Tan	Fox Gray	Hunter Green	Aztec Blue	Burnished Slate	Brick Red	Bare Aluminum Zinc Coated	Aluminum Zinc Coated + Acrylic
Long Span III Wall	26 Ga.	X	X	X	X	X	X	X	X		X
Long Span III Roof	26 Ga.	X	X	X	X	X	X	X	X	X	
Architectural III	26 Ga.	X	X	X	X	X	X	X	X		X
Architectural "V" Rib	26 Ga.	X	X	X	X	X	X	X	X		X
Standing Seam II	24 Ga.	X								X	
Standing Seam 360	24 Ga.									X	

TOPCOAT COLOR

Light Blue

COLUMBIAN TecTank



STANDARD TOPCOAT COLOR

Cobalt AS Blue

COLUMBIAN TecTank

TOPCOAT COLOR

Forest Green

COLUMBIAN TecTank

STANDARD TOPCOAT COLOR

Tan

COLUMBIAN TecTank

TOPCOAT COLOR

White

COLUMBIAN TecTank

STANDARD TOPCOAT COLOR

Gray

COLUMBIAN TecTank

TOPCOAT COLOR

Light Green

COLUMBIAN TecTank

Hunter, Kala

Subject: FW: Panoche Energy Center paint color review and comments
Attachments: PEC_paintcolor_package_countyoffresno.pdf

From: VonBerg, Eric [mailto:evonberg@co.fresno.ca.us]
Sent: Friday, January 08, 2016 2:46 PM
To: 'kala.hunter@amecfw.com'
Cc: Aguilar, Albert; 'rshropshire@ppmsllc.com'; Amanda Johnson
Subject: FW: Panoche Energy Center paint color review and comments

Kala, the County of Fresno concurs with selecting paint colors to closely match the colors of the existing buildings and tanks and accepting of the color charts provided.

Feel free to contact me if you have any further questions.

Sincerely,

Eric VonBerg, MRP
Senior Planner Enviornmental/Current Planning
Department of Public Works and Planning
Development Services Division,
559.600.4569
evonberg@co.fresno.ca.us

"Perfection is not attainable, but if we chase perfection we can catch excellence." Vince Lombardi

---

From: Hunter, Kala [mailto:kala.hunter@amecfw.com]
Sent: Friday, January 08, 2016 12:21 PM
To: Aguilar, Albert
Cc: Florentin, Bradley; rshropshire@ppmsllc.com; amanda.johnson@sageenvironmental.com
Subject: Panoche Energy Center paint color review and comments

Hello Mr. Aguilar,
Happy Friday!

To remind you, earlier this week I spoke with you regarding the California Energy Commission (CEC) requirements for Fresno County to review the selected paint colors of the building and the tanks for Panoche Energy Center located near Firebaugh, CA. As we discussed the selected paint colors closely match the colors of the existing buildings and tanks. Please find attached file which contains a cover letter describing our request and two documents showing the chosen paint chip colors for your review and comment.

At your earliest convenience please review and provide comment that we can forward to CEC for their review and approval.

I will contact on Monday to see if you have any questions that I can address.
Have a great weekend.

Thank you,

Kala Hunter
Environmental Scientist, Amec Foster Wheeler
1239 ½ Main Avenue, Durango, CO 81301
T (970) 403-0711 M (505) 715-8987
kala.hunter@amecfw.com amecfw.com

Appendix 3J

(WASTE-5)

Panoche Energy Center
2019 Waste Disposal Summary

Hazardous Wastes

Date	Manifests	Waste Name
9/4/2018	017253108JJK	Oily Debris
9/4/2018	017253108JJK	Spent Oil Filters (non-recycleable)
9/4/2018	017253109JJK	Waste Oil with Trace Benzene
9/4/2018	017253109JJK	Used Oil
9/4/2018	017253109JJK	Spent Antifreeze (Ethylene Glycol)
11/5/2018	019423402JJK	Oily Debris
11/5/2018	019423402JJK	Spent Oil Filters (non-recycleable)
11/5/2018	0194423403JJK	Waste Oil with Trace Benzene
11/5/2018	0194423403JJK	Used Oil
1/17/2019	020150400JJK	Waste Oil with Trace Benzene
1/17/2019	020150400JJK	Used Oil
1/17/2019	020150399JJK	Oily Debris
1/17/2019	020150399JJK	Spent Oil Filters (non-recycleable)
1/17/2019	020150399JJK	Waste Sulfuric Acid
4/2/2019	017254168JJK	Spent Oil Filters (non-recycleable)
4/2/2019	017254168JJK	Oily Debris
4/2/2019	017254169JJK	Waste Oil with Trace Benzene
4/2/2019	017254169JJK	Used Oil
6/28/2019	017254132JJK	Oily Debris
6/28/2019	017254132JJK	Spent Oil Filters (non-recycleable)
6/28/2019	017254133JJK	Waste Oil with Trace Benzene
6/28/2019	017254133JJK	Used Oil

Universal & Special Wastes

Date	Manifests	Waste Name
9/4/2018	0824187362UNI	Batteries (Lithim Ion & Lithium Metal)
11/5/2018	10311812231UNI	Batteries (Lead Acid, Wet Non-spillable)
1/17/2019	01101913408UNI	Electronic Devices
4/2/2019	03281918747UNI	Batteries (Alkaline)
4/2/2019	03261918746UNI	Electronic Devices
4/2/2019	03261918746UNI	Batteries (Lead Acid, Wet, Filled with Acid)
4/2/2019	03261918746UNI	Batteries (Lead Acid, Wet, Filled with Acid)
4/2/2019	03261918746UNI	Batteris (Nickel Cadmium & Nickel Metal Hydride)
6/28/2019	06281920742NON	Electronic Devices
6/28/2019	06281920742NON	Lamps (High Intensity Discharge)
6/28/2019	06281920742NON	Lamps (Fluorescent)
6/28/2019	06281920742NON	Lamps (Fluorescent - Broken)
6/28/2019	062811920744UNI	Batteries (Lead Acid, Wet Non-spillable)

Non-Hazardous Waste

Date	Manifests	Waste Name
7/24/2018	17-35026-010	Filter Press Cake
7/31/2018	17-35026-011	Filter Press Cake
8/13/2018	17-35026-012	Filter Press Cake
8/21/2018	17-35026-013	Filter Press Cake
9/10/2018	17-35026-013	Filter Press Cake
9/21/2018	17-35026-014	Filter Press Cake
10/3/2018	17-35026-015	Filter Press Cake
10/18/2018	17-35026-016	Filter Press Cake
11/7/2018	17-35026-017	Filter Press Cake
11/16/2018	17-35026-018	Filter Press Cake
11/28/2018	17-35026-019	Filter Press Cake
12/4/2018	17-35026-020	Filter Press Cake
12/14/2018	17-35026-021	Filter Press Cake
1/10/2019	17-35026-022	Filter Press Cake
1/15/2019	17-35026-023	Filter Press Cake
1/28/2019	17-35026-024	Filter Press Cake
2/5/2019	17-35026-25	Filter Press Cake
2/27/2019	17-35026-026	Filter Press Cake
5/3/2019	17-35026-027	Filter Press Cake
6/17/2019	17-35026-028	Filter Press Cake
7/9/2019	17-35026-29	Filter Press Cake
12/27/2019	12181813076NON	Turbine Washwater
6/24/2019	06111919531NON	Turbine Washwater

Code	Quantity	Units	Density	Convert LB
CA352	500	lb	NA	500
CA352	75	lb	NA	75
D018, CA223	30	gal	0.95	238
CA221	165	gal	0.95	1,307
CA 331	8	gal	1.11	74
CA352	300	lb	NA	300
CA352	20	lb	NA	20
D018,223	35	gal	0.95	277
CA221	200	gal	0.95	1,585
D018,223	30	gal	0.95	238
CA221	80	gal	0.95	634
CA352	300	lb	NA	300
CA352	100	lb	NA	100
CA 181	10	lb	NA	10
CA352	60	lb	NA	60
CA352	400	lb	NA	400
D018,223	30	gal	0.95	238
CA221	220	gal	0.95	1,743
CA352	160	lb	NA	160
CA 352	80	lb	NA	80
D018,223	25	gal	0.95	198
CA221	165	gal	0.95	1,307
			Total	9,844

Code	Quantity	Units	Convert LB
NA	9	lb	9
NA	50	lb	50
NA	35	lb	35
NA	20	lb	20
NA	30	lb	30
NA	60	lb	60
NA	500	lb	500
NA	20	lb	20
NA	100	lb	100
NA	15	lb	15
NA	13	lb	13
NA	5	lb	5
NA	25	lb	25

Total	882	

Code	Quantity	Units	Density	Convert LB		lb/cyd	
NA	20	cyd	NA	16,420	Avenal Net Wt	809	
NA	20	cyd	NA	16,420	Avenal Net Wt	833	
NA	20	cyd	NA	16,420		821	Average
NA	20	cyd	NA	16,420			
NA	20	cyd	NA	16,420			
NA	20	cyd	NA	16,420			
NA	15	cyd	NA	12,315			
NA	15	cyd	NA	12,315			
NA	10	cyd	NA	8,210			
NA	20	cyd	NA	16,420			
NA	15	cyd	NA	12,315			
NA	20	cyd	NA	16,420			
NA	20	cyd	NA	16,420			
NA	20	cyd	NA	16,420			
NA	20	cyd	NA	16,420			
NA	15	cyd	NA	12,315			
NA	20	cyd	NA	16,420			
NA	20	cyd	NA	16,420			
NA	20	cyd	NA	16,420			
NA	20	cyd	NA	16,420			
NA	20	cyd	NA	16,420			
NA	1250	gal	8.34	10,425			
NA	1345	gal	8.34	11,217			
			Total	341,832			