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AltaGas | Sonoran Energy Inc.

August 6, 2015

Ms. Mary Dyas, Compliance Project Manager
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Re: Blythe Energy Project Phase II (02-AFC-1C) (aka Sonoran Energy Project)
Petition to Amend the Final Decision

Dear Ms. Dyas:

On behalf of AltaGas Sonoran Energy Inc. ("AltaGas Sonoran"), I am pleased to present herewith a Petition to Amend ("Petition") the Final Decision, as previously amended, for the Blythe Energy Project Phase II (also known as Sonoran Energy Project; herein referred to as the "Project"). Since acquiring the Project in May 2014, AltaGas Sonoran has worked diligently with its consultants and engineers to develop modifications to the Project's design in an effort to construct a least cost, best fit project while taking into account the current energy market and environmental conditions. As a result, AltaGas Sonoran has determined that changes to the Project design are needed to best support integration of renewables to the grid and provide fast-starting, combined cycle generation that will increase electrical efficiency of the Project.

In that regard, and as you will find in the Petition documents, AltaGas Sonoran seeks the following modifications to the Blythe Energy Project Phase II license. The first proposed modification is to change the name of the Project from Blythe Energy Project Phase II to the Sonoran Energy Project. The proposed name change is to reduce potential confusion associated with the number of generating projects in the area using the name "Blythe."[1]

The other proposed modification involves the following amendments to the license:

- Define a new point of electrical interconnection via a 1,320-foot, 161-kV transmission line to the Western Area Power Administration's Blythe substation located southeast of the project site via an existing transmission line located in the Southern California Edison (SCE) Buck Boulevard substation.
- Replace the two Siemens SGT6-5000F combustion turbines with a single, more efficient General Electric (GE) Frame 7HA.02 combustion turbine.

[1] The project owner realizes that the Energy Commission must approve the proposed name change. However, to avoid confusion among the many projects named "Blythe" in the region, the Petition documents and all future correspondence will identify the project as the Sonoran Energy Project or "SEP."

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- Replace the Siemens STG with a more efficient single-shaft GE D652 STG.
- Increase the size of the auxiliary boiler to support GE's rapid response fast start capability.
- Decrease the size of cooling tower from an 11-cell to a 10-cell tower in response to the reduced heat rejection requirements.
- Decrease the size of the emergency diesel fire pump engine.

As is demonstrated in the Petition, none of these project modifications will result in an increase in environmental impacts beyond those previously analyzed during the licensing of the Project. AltaGas Sonoran looks forward to working with the Energy Commission and its Staff, interested agencies, and the public to evaluate the Project and move through the Petition approval process as expeditiously as possible so that the Project may commence construction.

Sincerely,

Christopher J. Doyle
Vice President
AltaGas Sonoran Energy Inc.

cc: Mr. Kyle Banbury, AltaGas Power Holdings (U.S.) Inc.
Ms. Melissa A. Foster, Stoel Rives LLP
Mr. Jerry Salamy, CH2M Hill, Inc.

Sonoran Energy Project

(02-AFC-01C)

Petition to Amend
Change in Generation Technology

Submitted to the

California Energy Commission

Submitted by

AltaGas Sonoran Energy Inc.

August 2015

With Assistance from

CH2M HILL Engineers, Inc.
2485 Natomas Park Drive
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Acronyms and Abbreviations

ALUCP	(Riverside County) Airport Land Use Compatibility Plan
APHUS	AltaGas Power Holdings (U.S.) Inc.
ARB	California Air Resources Board
BACT	best available control technology
BEP	(existing) Blythe Energy Project
BEP II	Blythe Energy Project Phase II
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CAISO	California Independent System Operator
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CO	carbon monoxide
CTG	combustion turbine generator
DPM	diesel particulate matter
FSA	Final Staff Assessment
GE	General Electric
GSU	generator step-up unit
HRSG	heat recovery steam generator
I-10	Interstate 10
kV	kilovolt
LORS	laws, ordinances, regulations, and standards
$\mu g/m^3$	microgram(s) per cubic meter
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
MW	megawatt
NOx	nitrogen oxide
NO_2	nitrogen dioxide
$PM_{2.5}$	particulate matter with aerodynamic diameter less than or equal to 2.5 microns
PM_{10}	particulate matter with aerodynamic diameter less than or equal to 10 microns
Ppm	part(s) per million
PTA	Petition to Amend

RO	reverse osmosis
ROW	right-of-way
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCR	selective catalytic reduction
SEP	Sonoran Energy Project
SO_2	sulfur dioxide
STG	steam turbine generator
TAC	toxic air contaminant
T-BACT	toxics best available control technology
TDS	total dissolved solids
VOC	volatile organic compound

SECTION 1

Introduction

This introductory section contains background information, a description of the proposed modification and its necessity, a summary of potential environmental impacts, and a discussion of the consistency of the proposed modification with the current license.

1.1 Background

On December 14, 2005, the California Energy Commission (CEC) granted a license to Caithness Blythe II, LLC, to construct and operate the Blythe Energy Project Phase II (BEP II), Docket Number 02-AFC-01C. As licensed, BEP II is a 569-megawatt (MW), combined-cycle power plant consisting of two combustion turbines with fired heat recovery steam generators (HRSGs), a single steam turbine generator (STG), an 8-cell wet cooling tower, and ancillary equipment. The project site is located in eastern Riversides County, approximately 5 miles west of Blythe, California.

On October 23, 2009, Caithness Blythe II, LLC, submitted a Petition to Amend (PTA or Petition) the Commission Decision. The petition requested the following project modifications:

- Define a new point of electrical interconnection via a 2,100-foot-long, 500-kilovolt (kV) transmission line into the proposed Keim substation.
- Replace the Siemens Westinghouse V84.3a turbines, which are no longer available, with fast-start Siemens SGT6-5000F turbines.
- Modify the combustion turbine and steam turbine (ST) enclosure.
- Incorporate an auxiliary boiler to allow fast start technology.
- Increase the cooling tower size by 1,020 square feet to improve the efficiency and performance of the plant at higher temperatures.
- Optimize the General Arrangement.

Optimization of the General Arrangement encompasses these following changes:

- Relocation of the demineralized water storage tank
- Creation of two additional parking lots
- Relocation of the structure for the power control center
- Relocation of the workshop/ storage area
- Slight relocation of the general layout of the facility to the east
- Relocation of the control room building
- Relocation of the raw water storage tank

The Commission approved the amendment request on April 27, 2012 (TN 64945) with new or revised Conditions of Certification for Air Quality, Hazardous Materials Handling, Transmission System Engineering, Soil & Water Resources, and Worker Safety and Fire Protection.

On October 12, 2011, Caithness Blythe II, LLC, submitted a PTA to extend the BEP II license. The Commission approved this amendment request on December 16, 2011, extending the license to December 14, 2016 (TN 63164).[1] To date, construction of the project has not commenced.

[1] The Commission also approved a 5-month extension from December 14, 2011, to May 12, 2012, on December 14, 2011 (TN 63153).

On May 9, 2014, the current owner of BEP II, AltaGas Sonoran Energy Inc., submitted a Notice of Name Change/Petition to Change Ownership to the Commission. The Commission approved the ownership change on June 18, 2014. Upon acquisition of the project, AltaGas Sonoran Energy Inc. evaluated the project as licensed and determined that in light of current turbine technology, changes to the project design were needed to better support integration of renewables to the grid by providing fast-starting, faster-ramping, lower-minimum-load, higher-efficiency combined-cycle generation.

1.2 Description of Proposed Project Modification

AltaGas Sonoran Energy Inc. proposes two changes to the BEP II license. The first proposed change is to change the name of the project from Blythe Energy Project Phase II to the Sonoran Energy Project (SEP). The purpose of the proposed name change is to reduce potential confusion associated with the number of generating projects in the area using the name "Blythe."

The second proposed change involves the following amendments to the license:

- Define a new point of electrical interconnection via an approximately 1,320-foot, 161-kV transmission line to the Western Area Power Administration's Blythe substation located southeast of the project site via an existing transmission line located in the Southern California Edison (SCE) Buck Boulevard substation.
- Replace the two Siemens SGT6-5000F combustion turbines with a single, more efficient General Electric (GE) Frame 7HA.02 combustion turbine.
- Replace the Siemens STG with a more efficient single-shaft GE D652 STG.
- Increase the size of the auxiliary boiler to support GE's rapid response fast start capability.
- Decrease the size of cooling tower from an 11-cell to a 10-cell tower in response to the reduced heat rejection requirements.
- Decrease the size of the emergency diesel fire pump engine.

A comprehensive project description is provided in Section 2.

1.3 Necessity of Proposed Modification

Sections 1769 (a)(1)(A), (B), and (C) of the CEC Siting Regulations require a discussion of the necessity for the proposed modification to the SEP and whether the modification is based on information known by the petitioner during the certification proceeding. The combustion turbine/steam turbine technologies being proposed were unavailable during the licensing of the project. Further, AltaGas Sonoran Energy Inc. acquired the SEP site license in May 2014 and has been working since that time on developing a project that will support the integration of renewables by providing efficient, fast-starting, fast-ramping, lower-minimum-operating-load, highly-efficient combined-cycle gas-fired generation that will utilize dry combustors and water treatment of cooling tower influent and share certain infrastructure with the existing, operational Blythe Energy Project (referred to herein as the existing BEP).

Section 2.2 (Transmission Interconnection Studies) provides additional information regarding the necessity of the proposed modification.

1.4 Summary of Environmental Impacts

Section 1769 (a)(1)(E) of the CEC Siting Regulations requires that an analysis be conducted to address impacts the proposed modification may have on the environment and proposed measures to mitigate any significant adverse impacts. Section 1769 (a)(1)(F) requires a discussion on whether the proposed modification affects the facility's ability to comply with applicable laws, ordinances, regulations, and standards (LORS). The proposed project modification will not result in an increase in environmental

impacts beyond those previously analyzed during the licensing of the project. Furthermore, the proposed project modification is consistent with LORS. Section 3 of this Petition provides an environmental analysis of the proposed project modification and its consistency with LORS.

1.5 Consistency of Modification with License

Section 1769 (a)(1)(D) of the CEC Siting Regulations requires a discussion of the consistency of the proposed project modification with the assumptions, rationale, findings, or other basis of the Final Decision and whether the modification is based on new information that changes or undermines the basis of the final decision. Also required is an explanation of why the modification should be permitted. The proposed modification does not undermine the assumptions, rationale, findings, or other basis of the Final Decision (or other approved amendments) for the project. Additionally, the proposed modification is in keeping with the original intent of the project as a fully dispatchable, high-efficiency, quick-start facility able to meet the current and projected market demands of Southern California.[2] In addition, the proposed project modification should be licensed as it reflects the latest available combined-cycle technologies which will increase the overall electrical generation efficiency of the grid. This plant is expected to have a heat rate at minimum load which is similar to, or better than, most plants' heat rates at base load. Further, the proposed project modification is consistent with recent California Independent System Operator (CAISO) publications on the need for fast response Flexible Ramping Capability to support the growth of usually inflexible renewable energy resources.

[2] Transaction Number 64099, Blythe Energy Project Phase II (02-AFC-1C) Staff Analysis of Proposed Modifications, page 2.

SECTION 2

Project Description

Consistent with the CEC Siting Regulations Section 1769(a)(1)(A), this section describes the proposed project modification and the necessity for the modification.

2.1 Proposed Modification

2.1.1 Project Site

The project site is a 76-acre parcel located within the City of Blythe, in eastern Riverside County, California. The site is bound to the north by Riverside Avenue, to the east by the existing BEP, and to the south by Hobsonway. Figure 2-1 presents a site vicinity map. The site is fenced, sparsely vegetated, and relatively flat. The site slopes from an elevation of 350 feet in the northern portion of the parcel to 340 feet in the southern portion.

2.1.2 Project Overview

SEP is a natural gas-fired, water-cooled, combined-cycle, 553-MW net electrical generating facility, laid out using one-on-one single shaft arrangement utilizing a GE 7HA.02 gas turbine and a D652 steam turbine. The power block will consist of one natural gas-fired combustion turbine generator (CTG), one supplemental-fired HRSG, one steam turbine, an induced-draft cooling tower, and related ancillary equipment. Other equipment and facilities to be constructed are an auxiliary boiler, water treatment facilities, emergency services, and administration and maintenance buildings. The project site is the same as previously licensed for BEP II.

SEP will share some facilities with the existing BEP, including an existing 16-inch natural gas line located on the south side of the BEP property boundary. The gas line will be extended north to a new SEP conditioning and regulating station.

The interconnection is an approximately 1,320-foot, 161-kV transmission line from SEP to the existing Western Area Power Administration's Blythe substation. The Blythe substation is located on a separate parcel southeast of the SEP site. See subsection 2.1.3.2, Transmission System Engineering, for an expanded discussion of the SEP interconnections.

2.1.3 Facility Description, Design, Construction, and Operation

SEP has been designed using commercially proven technology equipped with monitoring, protection, and safety systems to provide safe and reliable operation over a 30-year operating life. It will consist of a single one-on-one, combined-cycle gas turbine power block consisting of one natural gas-fired CTG, one supplemental-fired HRSG, and one STG.

The power blocks will encompass the following principal combined design elements:

- One GE 7HA.02 CTG with a nominal rating of 333 MW.[3] The CTG will be equipped with an evaporative cooler on the inlet air system and dry low oxides of nitrogen oxide (NO_x) combustors.
- One GE D652 three casing, four bearing single, shaft configuration, double flow, side exhaust condensing steam turbine.
- One HRSG, which will be horizontal, triple-pressure, and natural circulation. The HRSG has a natural gas-fired duct burner for supplemental firing in the HRSG inlet ductwork and an emission reduction

[3] Gross output based on an ambient air temperature of 74 °F without duct firing and evaporative cooling.

system consisting of a selective catalytic reduction (SCR) unit to control NO_x stack emissions, and an oxidation catalyst to control carbon monoxide (CO) emissions in the outlet ductwork.

- One induced-draft, 10-cell cooling tower to provide cooling to the surface steam condenser and closed cooling water heat exchanger.
- A 161-kV transmission line to the Western Area Power Administration's Blythe substation.
- Direct connection with the existing BEP's 16-inch-diameter natural gas system.
- Connection to a new onsite 3-inch-diameter potable water system.
- Connection to a new well water supply system and interconnection to BEP's raw water system.

The auxiliary steam boiler will provide steam during gas turbine start-up and shutdown to allow startups and shutdowns to be accomplished more quickly. The boiler will provide up to 60,000 pounds per hour of steam to warming the steam turbine, maintaining vacuum on the steam condenser, and heating/reheating condensate.

Primary access to the SEP site will be provided via the north entrance off Riverside Avenue. The existing BEP entrance will be connected to the SEP entrance via a new access road. A secondary SEP access road will be off Hobsonway. Figures 2-2a and 2-2b show the facility general arrangements, including both electrical configurations. Figures 2-3a and 2-3b show typical elevation views of the project.

2.1.3.1 Water Supply, Treatment, and Wastewater Discharge

Operation of SEP will remain within the parameters of existing Condition of Certification WATER RES-4 and will not exceed a maximum of 2,800 acre-feet per year of water, based on the facility operating 7,000 hours per year. Figures 2-4a and 2-4b present a water balance for the project for a range of ambient conditions with and without duct firing.

Degraded (brackish) well water will be used directly as cooling tower makeup water and will feed the onsite service and potable water treatment system. This system will consist of a filtration system to remove iron and a potable water reverse osmosis (RO) system. Well water will pass through the filtration system and will be stored in a 470,000-gallon service/fire water storage tank for uses at the facility. The fire/service water storage tank will provide a minimum of 48 hours of operational storage and 2 hours of fire protection storage in the event of a disruption in the supply. The water passing through the potable water RO system will be stored in a potable water tank. Reject from the service and potable water treatment system will be directed to a wastewater treatment system. Water conservation measures employed on the project site contain brine concentrators to perform onsite recycling of wastewater, xeriscape landscaping (where required), and low/zero flow sanitary fixtures.

The wastewater treatment system uses a lime softening system, a cation exchange system, and an RO system to treat/recycle water. The discharge from this system will be stored in a treated wastewater tank. The waste generated by the lime softening system will be directed to a filter press system and the solids will be disposed of as nonhazardous waste similar to the licensed project. The effluent from the RO system will be directed to a brine concentrator. Water produced from brine concentrating will be sent to the treated wastewater tank. The concentrated brine will be disposed of in the onsite evaporation ponds.

The treated wastewater will be used in the combustion turbines inlet air evaporative coolers, and as steam-cycle makeup water. The steam-cycle makeup water will be treated using a RO train and electro-deionization prior to being stored in a 200,000-gallon demineralized water storage tank. Wastewater generated from the steam-cycle makeup water treatment system and from the evaporative coolers will be directed to a wastewater recycle sump, which discharges to the wastewater treatment system. Table 2-1 presents the SEP estimated daily and annual operational water use. Table 2-2 presents the well water expected quality.

Table 2-1. Estimated Daily and Annual Water Use for SEP Operation

Water Use	Average Daily Use Rate (gpm)	Maximum Daily Use Rate[a] (gpm)	Maximum Annual Use (acre-feet per year)
Well water	1,584	2,345	2,800

[a] Assumes an ambient temperature of 122 °F with duct firing and evaporative coolers operating.

Table 2-2. Expected Water Quality from Wells

Parameter	Units	Amount Detected
Calcium	ppm as Ca	41.5
Magnesium	ppm as Mg	8.5
Sodium	ppm as Na	298
Potassium	ppm as K	4.2
Sulfate	ppm as SO4	271
Chloride	ppm as Cl	280
Fluoride	ppm as F	1.80
Silica	ppm as SiO2	24.2
Iron	ppm as Fe	0.22
Phosphate	ppm as P	<0.05
Nitrate	ppm as Na	3.3
M Alkalinity	ppm as Na	151
P Alkalinity	ppm as CaCO3	0
Ammonia	ppm as CaCO3	<0.1
Silt Density Index		NA
Turbidity	NTU	1.24
Conductivity	µmhos/cm	1720
PH	pH units	7.4
Total Dissolved Solids	ppm TDS	1000
Total Suspended Solids	pmm TSS	<5
Biological Oxygen Demand	ppm BOD	5
Total Organic Carbon	ppm as C	12.9
Aluminum	ppm as Al	0.1
Arsenic	ppm as	0.003
Barium	ppm as Ba	<0.1
Boron	ppm as Bo	0.6
Cadmium	ppm as Cd	<0.001
Hexavalent Chromium	ppm as Cr	<0.01

Table 2-2. Expected Water Quality from Wells

Parameter	Units	Amount Detected
Total Chromium	ppm as Cr	0
Copper	ppm as Cu	0.07
Lead	ppm as Pb	<0.005
Mercury	ppm as Hg	<0.005
Nickel	ppm as Ni	<0.01
Selenium	ppm as Se	0.009
Strontium	ppm as Sr	0.93
Tin	ppm as Sn	<0.01
Zinc	ppm as Zn	0.07

The primary source of fire protection water for the project will be from a new raw water storage tank and emergency diesel fire pump engine. The water supplying the tank will be from wells located on the western side of the project site.

Any water that is not adequately treated for reuse will be discharged to one of two new evaporation ponds for ultimate disposal through evaporation. The evaporation ponds will be designed with high-density polyethylene (HDPE) liners and sufficient surface area to evaporate rainwater that falls directly in the pond as well as water discharged from the brine concentrator. At the average ambient temperature of 74 °F with evaporative cooling and no duct burner firing, discharge to the evaporation ponds will be approximately 14.4 gallons per minute (gpm) or approximately 23.1 million gallons per year.

For the site peak summer ambient temperature conditions, discharge to the evaporation ponds will be approximately 21.1 gpm (Table 2-3).

Table 2-3. Estimated Daily and Annual Wastewater Discharge for SEP Operation

Wastewater Use	Average Daily Discharge Rate (gpm)	Maximum Daily Discharge Rate (gpm)	Average Annual Use[a] (million gallons per year)
Wastewater to evaporation pond	14.4	21.1	23.1

[a] Assumes 5,500 hours of operation at the average daily maximum temperature and 1,500 hours of duct firing for a total of 7,000 hours of operation.

Actual annual discharge volumes are expected to be less than represented here and will depend on the actual operating profile and annual service factor of SEP in any given year. Table 2-4 presents the estimated wastewater quality discharged from the cooling tower to the brine concentrator and from the brine concentrator to the evaporation ponds.

Table 2-4. Expected Process Wastewater Quality

Parameter	Units	Cooling Tower Discharge to Brine Concentrator Concentration[a]	Discharge to Evaporation Pond Concentration[b]
Calcium	ppm as Ca	207.5	4,574
Magnesium	ppm as Mg	42.5	937

Table 2-4. Expected Process Wastewater Quality

Parameter	Units	Cooling Tower Discharge to Brine Concentrator Concentration[a]	Discharge to Evaporation Pond Concentration[b]
Sodium	ppm as Na	1490	32,842
Potassium	ppm as K	21	463
Sulfate	ppm as SO4	1355	29,866
Chloride	ppm as Cl	1400	30,858
Fluoride	ppm as F	9	198
Silica	ppm as SiO2	121	2,667
Iron	ppm as Fe	1.1	24
Phosphate	ppm as P	NA	NA
Nitrate	ppm as Na	16.5	364
M Alkalinity	ppm as Na	755	16,641
P Alkalinity	ppm as CaCO3	0	0
Ammonia	ppm as CaCO3	NA	NA
Silt Density Index		NA	NA
Turbidity	NTU	NA	NA
Conductivity	µmhos/cm	8600	189,558
PH	pH units	NA	NA
Total Dissolved Solids	ppm TDS	5000	111,310
Total Suspended Solids	pmm TSS	NA	NA
Biological Oxygen Demand	ppm BOD	25	551
Total Organic Carbon	ppm as C	64.5	1,422
Aluminum	ppm as Al	0.5	11
Arsenic	ppm as	0.015	0
Barium	ppm as Ba	NA	NA
Boron	ppm as Bo	3	66
Cadmium	ppm as Cd	NA	NA
Hexavalent Chromium	ppm as Cr	NA	NA
Total Chromium	ppm as Cr	0	0
Copper	ppm as Cu	0.35	8
Lead	ppm as Pb	NA	NA
Mercury	ppm as Hg	NA	NA
Nickel	ppm as Ni	NA	NA
Selenium	ppm as Se	0.045	1
Strontium	ppm as Sr	4.65	102

Table 2-4. Expected Process Wastewater Quality

Parameter	Units	Cooling Tower Discharge to Brine Concentrator Concentration[a]	Discharge to Evaporation Pond Concentration[b]
Tin	ppm as Sn	NA	NA
Zinc	ppm as Zn	0.35	8

[a] Cooling tower blowdown assumed 5 cycles of concentration.
[b] Estimated brine concentrator effluent, water to evaporation pond.
Note: NA = not applicable

Sanitary wastewater discharge from SEP will be sent to a new onsite septic system with a leach field.

Miscellaneous plant drainage will consist of area washdown, sample drainage, condensation, and drainage from facility equipment areas. Water from these areas will be collected in a system of floor drains, sumps, and pipes and routed to the wastewater collection system. This water will be routed through an oil/water separator as required to prevent oil from entering the water system. This clean water discharge will be directed to the cooling tower basin for reuse.

2.1.3.2 Transmission System Engineering

SEP will connect to the regional electrical grid via a new 161-kV Gen-Tie line. The new 161-kV Gen-Tie line will go from the high side of the SEP generator step-up unit (GSU) transformer to the existing Buck Boulevard (or Buck) 161-kV substation, on the existing BEP site. The new 161-kV Gen-Tie will deliver energy to the Western Area Power Administration's 161-kV Blythe substation, via an existing 161-kV Buck–Blythe transmission line. Figure 2-5, Electrical 161kV General Arrangement Buck Termination Diagram, shows the configuration split for the Buck 230-kV and Buck 161-kV portions of the substation.

SEP delivery at either 230-kV or 161-kV provides flexibility for transmitting energy to multiple transmission systems (either the WAPA 161-kV or the Buck 230-kV). The support tower designs will look similar to the support tower designs in Figure 2-6 with an expected height of 85 to 110 feet.

2.1.3.2.1 Overhead Transmission Line Characteristics

The proposed Gen-Tie 161-kV line will be designed as a combination of single- and/or double-circuit self-supporting steel structures, which may be installed on concrete pier foundations.

The insulators for the 161-kV generation tie lines will be polymer or porcelain with overall lengths of approximately 10 to 15 feet for suspension insulators. The length of the insulator strings will be increased on structures other than tangent to ensure compliance with National Electrical Code (NEC), National Electrical Safety Code (NESC), and GO-95 clearances. The Gen-Tie line will be designed for the full capacity of SEP, which will be approximately 2150A at 161 kV.

2.1.4 Interconnection Substation Characteristics

The interconnection at the Buck 161-kV substation will utilize existing circuit breakers in series with the termination for the Blythe 161-kV termination. This configuration also utilizes the existing WAPA 161-kV transmission line into the Blythe 161-kV system.

The new SEP power block will connect the Gen-Tie to the existing transmission system through a single 230-kV class, 3000A circuit breaker (operated at 161 kV) in series with the SEP GSU transformer. The interconnection to the Buck and CRS substations and all equipment will be designed to ensure compliance with applicable National Electric Code (NEC), National Electrical Safety Code (NESC), and GO-95 rules following industry standard requirements. The main buses and the bays will also be designed following these requirements. Power for SEP will be back-fed through the GSU transformer and auxiliary transformer. Auxiliary controls and protective relay systems for the substations may be located in the

SEP control building for coordination of the Gen-Tie. No existing underground interconnect lines will be affected by the project.

2.2 Transmission Interconnection Studies

The existing adjacent BEP was originally interconnected to the transmission system via the Buck substation and a new overhead transmission line to the Blythe 161-kV substation, delivering approximately 520-MW to the WAPA transmission system. However, in June 2010, a new 230-kV transmission line from Buck to Julian Hinds was energized and the WAPA tie to Blythe was essentially abandoned, butall transmission structures and facilities remain in place.

Because SEP is largely replacing MWs from the previous delivery of BEP to WAPA at the same electrical node, the actual marginal addition of generation to the grid at this connection point is small (approximately 34 MW). This will make system impact issues minimal.

The SEP interconnection request was filed with WAPA on November 30, 2014. The interconnection fee has been paid and SEP has a position in the WAPA queue. Appendix 2A contains a copy of the executed System Impact Study.

2.3 Transmission Line Safety and Nuisances

It is anticipated that no modifications are necessary for the existing 161-kV transmission line connecting the Buck substation to the WAPA transmission system. This section discusses the safety and nuisance issues associated with the project's transmission line.

2.3.1 Electrical Clearances

Typical high-voltage overhead transmission lines are composed of bare conductors connected to supporting structures by means of porcelain, glass, or polymer insulators. The air surrounding the energized conductor acts as the insulating medium. Maintaining sufficient clearances, or air space, around the conductors to protect the public and utility workers is paramount to the safe operation of the transmission line. The required safety clearance required for the conductors is determined by considering various factors such as: the normal operating voltages, conductor temperatures, short-term abnormal voltages, windblown swinging conductors, contamination of the insulators, clearances for workers, and clearances for public safety. Minimum clearances are specified in the NESC (IEEE C2) and California Public Utilities Commission (CPUC) General Order (GO) 95. Electric utilities, state regulators, and local ordinances may specify additional (more restrictive) clearances.

The SEP gen-tie line(s) connecting to the existing transmission system will be designed to meet appropriate national, state, and local clearance requirements.

2.3.2 Electrical Effects

The electrical effects of high-voltage transmission lines, both within the SEP site and outside of the SEP site, fall into two broad categories: corona effects and field effects. Corona is the ionization of the air that occurs at the surface of the energized conductor and suspension hardware because of high electric field strength at the surface of the metal during certain conditions. Corona may result in radio and television reception interference, audible noise, light, and production of ozone. Field effects are the voltages and currents that may be induced in nearby conducting objects. A transmission line's inherent electric and magnetic fields cause these effects. Based on the analyses below, SEP will not result in any significant impacts to electric and magnetic fields or audible noise or radio and television interference.

2.3.2.1 Electric and Magnetic Fields

The SEP 161-kV transmission line that connects the Blythe substation via the existing Buck substation (located on the BEP site) will not affect the public because it is located entirely within the site. No

changes are proposed for the existing 161-kV transmission line between the Buck and WAPA Blythe substations. The potential impacts of operating this transmission line were addressed during the licensing of BEP, and SEP's impacts will be similar in nature. The estimated electric field of the existing 161-kV Buck to Blythe transmission line at the center of the transmission line right-of-way (ROW) substation is 0.9 kV/meter, and is 0.7 kV/meter at the edge of the ROW. The estimated magnetic field under the Buck to Blythe 161-kV transmission line and at the center of the ROW is 46 milligauss (mG) (0.046 G), and 35 mG (0.035 G) at the edge of the ROW.

2.3.2.2 Audible Noise and Radio and Television Interference

The new 161-kV interconnection line from SEP to the existing Buck substation will be designed and constructed not to affect the public from audible noise and radio and television interference as they are located within the SEP and BEP sites.

No changes are proposed for the 161-kV transmission line connecting the Buck substation to the WAPA transmission system. The impacts associated with the operation of this transmission line were addressed in the BEP II proceeding and SEP's impacts will be similar in nature.

2.3.2.3 EMF, Audible Noise, and Radio and Television Interference Assumptions

EMF, audible noise, and radio and television interference near power lines vary with regard to the line design, line loading, distance from the line, and other factors. The new overhead 161-kV line located between the SEP power blocks and the Buck substation are entirely located within the SEP and BEP sites.

Electric fields, corona, audible noise, and radio and television interference depend on line voltage and not the level of power flow. Because line voltage remains nearly constant for the new SEP 161-kV line to the Buck substation during normal operation, the audible noise associated with the transmission lines in the area will be of the same magnitude before and after construction of SEP.

The magnetic field is proportional to line loading (amperes), which varies as demand for electrical power varies and as generation from the generating facility is changed by the system operators to meet changes in demand.

SEP construction and operation, including the interconnection of SEP to the Buck substation and transmission system, are not expected to result in significant changes in EMF levels, corona, audible noise, or radio and television interference.

The impacts associated with the operation of this transmission line were addressed in the BEP II proceeding and SEP's impacts will be similar in nature.

2.3.2.4 Induced Current and Voltages

The proposed SEP transmission lines will be constructed in conformance with CPUC GO-95 and Title 8 California Code of Regulations (CCR) 2700 requirements, consistent with the licensed project. Therefore, hazardous shocks are unlikely to occur as a result of project construction, operation, or maintenance.

2.3.3 Fire Hazards

The transmission interconnection will be designed, constructed, and maintained in accordance with applicable standards including GO-95, which establishes clearances from other manmade and natural structures to mitigate fire hazards. The project owner is expected to maintain the transmission line corridor and the immediate area in accordance with existing regulations and accepted industry practices that will address identification and abatement of fire hazards.

2.3.4 Applicable Laws, Ordinances, Regulations, and Standards

The SEP transmission system will be designed to comply with applicable state and federal LORS and Conditions of Certification TSE-1 through TSE-8 and TLSN-1 through TLSN-5.

2.3.5 Project Schedule

Construction of SEP is scheduled to occur from the 2nd quarter of 2016 through the 2nd quarter of 2018. Final engineering is scheduled for the first half of 2016 (6 months) with site mobilization scheduled to start during the 2nd quarter of 2016. Construction is scheduled to be complete in the 2nd quarter of 2018 (approximately 26 months, including 4 months of commissioning). Table 2-5 present SEP's construction schedule.

Table 2-5. Schedule Major Milestones

Activity	Commence Activity	Completion of Activity
Site Mobilization/Start of Construction	2nd Quarter 2016	NA
Commissioning	4th Quarter 2017	2nd Quarter 2018
Commercial Operation	2nd Quarter 2018	2nd Quarter 2018

The construction plan is based on a single 10-hour shift/6 days per week. Overtime and additional shift work may be used to maintain or enhance the construction schedule. Construction will most typically take place between the hours of 6 a.m. and 6 p.m., Monday through Saturday; however, additional hours may be necessary to maintain schedule or to complete critical construction activities (such as large concrete pours). During the commissioning and startup phase, some activities may continue 24 hours per day, 7 days per week. Table 2-6 provides the projected construction craft personnel power by month. An estimated peak of 325 craft and professional personnel is anticipated in the 2nd quarter of 2017 for SEP.

Approximately 13.5 acres of onsite construction laydown will be required for equipment storage and construction workforce parking. Additional room onsite has been allocated for staging and construction trailers.

Construction access will generally be from Hobsonway via Christopher Columbus Transcontinental Highway Interstate 10 (I-10). Large or heavy equipment, such as the turbine, generator, GSU transformers, and HRSG modules will be delivered to the site by heavy haul truck/trailer following specific requirements of "heavy/oversize load" permits from appropriate agencies (City of Blythe and/or Riverside County). Large and heavy components of the HRSG will arrive by ship at the Port of Long Beach. From the Port of Long Beach, these large components will be hauled directly to the SEP site for immediate installation. In the event heavy equipment arrives but cannot be transported and transferred directly into its final position at SEP, it will be hauled to the laydown area. The steam turbine and combustion turbines are expected to arrive by rail. The local rail siding for the project is located 5.75 miles south of the intersection between SR-78 and I-10 (6.25 miles south of project site).

Construction water will be groundwater from either the new onsite wells (when completed) or the existing BEP water supply system. During construction, the average daily water use is expected to be approximately 20,000 gallons. During the commissioning period, when activities such as hydrostatic testing, cleaning and flushing, and steam blows of the HRSG and steam cycles will be conducted, average water usage is estimated at 30,000 gallons per day with a maximum daily use of 643,080 gallons. Hydrostatic test water and cleaning water will be tested and disposed in accordance with applicable LORS.

Water for sanitary purposes will either be bottled water or provided by BEP's potable water system. Portable toilets will be provided throughout the site.

- Lighting will be required to facilitate SEP night construction and commissioning activities. Construction lighting will, to the extent feasible and consistent with worker safety codes, be directed toward the center of the construction site and shielded to prevent light from straying offsite. Task-specific construction/commissioning lighting will be used to the extent practical while complying with worker safety regulations.

- During some construction periods and during the commissioning/startup phase of the project, some activities will continue 24 hours per day, 7 days per week. During periods when nighttime construction/commissioning activities take place, illumination that meets state and federal worker safety regulations will be required. To the extent possible, the nighttime construction/commissioning lighting will be erected pointing toward the center of the site where activities are occurring and will be shielded. Task-specific lighting will be used to the extent practical while complying with worker safety regulations. Despite these measures, there may be limited times during the construction/commissioning period when the project site may appear as a brightly lit area as seen in close views and from distant areas.

2.4 Facility Operation

SEP will be capable of being dispatched throughout the year and will have annual availability of 95 percent. It will be possible for plant availability to exceed 99 percent for a given 12-month period.

SEP will be operated from the BEP control room. As such, the incremental increase in operational staffing for SEP is expected to be 9 employees, including 5 plant operators, 1 administrative person, 2 mechanics, and 1 plant engineer, in three rotating shifts. The facility will be capable of operating 24 hours per day, 7 days per week.

SEP is expected to operate at full load, although the plant will have the ability to serve both peak and intermediate loads with the added capabilities of rapid startup, low turndown capability (ability to turn down to a low load of 30 percent of the combustion turbine's output, depending on ambient conditions), and steep ramp rates, (50 MW per minute when operating above minimum gas turbine capacity). The project configuration will be more efficient than many, if not all of the existing gas-fired steam generation facilities in southern California. SEP will provide much needed flexible operating characteristics for integrating renewable energy into the electrical grid and providing fast response load following service. SEP is expected to have an annual capacity factor of between 35 and 80 percent. The actual capacity factor for SEP in any month or year will depend on weather-related customer demand, load growth, renewable energy supplies, generating unit retirements and replacements, the level of generating unit and transmission outages, and other factors. The exact operational profile of SEP will ultimately depend on electrical grid needs at the time and dispatch decisions made by the offtaker or load serving entity contracted with AltaGas Sonoran Energy Inc. to buy and distribute the power generated and the CAISO.

2.4.1 Facility Safety Design

SEP will be designed to maximize safe operation. Earthquake, flood, and fire are potential hazards that could affect the facility. Facility operators will be trained in safe operation, maintenance, and emergency response procedures to minimize the risk of personal injury and damage to the plant**.** SEP's design will contain safety measures that will be consistent with (or exceed) the design for the licensed BEP II. SEP will conform to the latest California Code of Regulations Title 24 and the California Building Code to minimize potential impacts associated with earthquakes, floods, and fires.

2.4.2 Natural Hazards

As noted in the BEP II Commission Decision, the project site is not located within a State of California Earthquake Fault Zone, near any known active fault. Furthermore, the project site is not located within the 100-year floodplain. The project design will conform to the California Code of Regulations Title 24 and the California Building Code to reduce potential seismic hazards. Appendix 2B contains the structural seismic design criteria for the buildings and equipment. Because the SEP site is the same site that was licensed by the CEC in the BEP II proceeding, no changes in impacts or mitigation requirements from natural hazards are expected.

Table 2-6. Projected Construction Craft Personnel Power by Month

Craft	2016							2017												2018										Man Months	Days/ Mo.	Man Days	Hours
	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT				
Construction	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29				
Worker/Insulator												15	30	40	40	40	40	40	20	15	10									290	23	6,670	66,700
Boilmakers								20	40	60	80	80	100	80	80	70	65	55	23											753	23	17,319	173,190
Carpenters	5	10	10	15	20	20	20	15	15	15	15	12																		172	23	3,956	39,560
Cement Finishers							1	2	3	4	4	3	2	1																20	23	460	4,600
Common Laborers	5	5	5	5	5	5	5	5	10	10	10	10	10	10	10	10	8	5	5	5	5	5								153	23	3,519	35,190
Electricians	5	5	10	10	20	20	30	30	40	40	40	40	40	40	40	30	30	30	20	10	5									535	23	12,305	123,050
Equipment Operators, Heavy	4	4	6	15	15	10	6	6	5																					71	23	1,633	16,330
Equipment Operators, Light			2	2	1	1	1	1	1	1	1	1																		12	23	276	2,760
Equipment Operators, Medium			8	10	10	22	20	20	15	15	8	8	5	5																146	23	3,358	33,580
Equipment Operators, Oilers		1	1	1	1	1	2	2	2	2	2	2	1	1	1	1	1	1	1											24	23	552	5,520
Mechanical Equipment																														0	23	0	0
Millwrights	2	2	4	4	8	8	10	10	8	8	4	4	1	1																74	23	1,702	17,020
Plumbers Helper						1																								1	23	23	230
Plumbers						1	1																							2	23	46	460
Painters,																				4	4	4								12	23	276	2,760
Rodmen (Reinforcing)	4	4	4	8	8	10	20	20	10	4	4																			96	23	2,208	22,080
Skilled Trade										1	1																			2	23	46	460
Structural Steel Workers					10	10	10	20	20	30	40	40	40	15	10	10	5	2												262	23	6,026	60,260
Structural Steel Welders						1	1	2	3	3	3	2	1																	16	23	368	3,680
Steamfitters/Pipefitters									20	40	60	70	70	70	70	70	55	55	50	20										650	23	14,950	149,500
Truck Drivers, Heavy			1	4	4	4	1	1	1																					16	23	368	3,680
Truck Drivers, Light										1																				1	23	23	230
Transmission Line	0	0	0	0	0	0	1	28	46	50	48	33	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	220	23	5060	50600	
Total Craft	25	31	51	74	102	114	129	182	239	284	320	320	314	263	251	231	204	188	119	54	24	9	0	0	0	0	0	0					
Total Supervision	**1**	**1**	**2**	**2**	**2**	**2**	**2**	**4**	**4**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**4**	**4**	**2**	**1**	**1**	**1**											

2.4.3 Emergency Systems and Safety Precautions

This section discusses the fire protection systems, emergency medical services, and safety precautions to be used by project personnel. Compliance with these requirements will minimize project effects on public and employee safety. SEP will have emergency and safety systems that comply with current fire and safety regulations. These safety systems will either meet or exceed those analyzed in the BEP II license.

2.4.3.1 Fire Protection Systems

The project will rely on onsite fire protection systems and local fire protection services. The fire protection systems are designed to protect personnel and limit property loss and plant downtime from fire or explosion. The project will have the following fire protection systems.

Carbon Dioxide and Dry Chemical Fire Protection Systems. These systems protect the CTG and certain accessory equipment compartments from fire. The system will have fire detection sensors in all protected compartments. Actuating one sensor will provide a high-temperature alarm on the CTG control panel. Actuating a second sensor will trip the CTG, turn off ventilation, close ventilation openings, and automatically release the gas and chemical agents. The gas and chemical agents will be discharged at a design concentration adequate to extinguish the fire.

Sprinkler and Deluge Systems. These systems protect steam turbine equipment, buildings, and large transformers and specific electrical equipment rooms. The steam turbine pedestal area will be protected by an automatic dry pipe sprinkler system. The steam turbine lubrication oil reservoir will be protected by dry pilot sprinklers, and the steam turbine bearing areas will be protected with preaction sprinkler systems. Buildings will generally be protected by automatic wet-type sprinkler systems. Large transformers (GSU and auxiliary transformers) will be protected by automatic water spray (deluge) systems. Electrical equipment and battery rooms will be protected with preaction sprinkler systems.

Fire Hydrants/Hose Stations. This system will supplement the plant's fixed fire suppression systems. Water will be supplied from the plant fire water system.

Fire Extinguisher. The plant administrative/control/warehouse/maintenance building, water treatment building, and other structures will be equipped with portable fire extinguishers as required by the local fire department.

Local Fire Protection Services. In the event of a major fire, the plant personnel will be able to call upon the City of Blythe Fire Department for assistance. The Hazardous Materials Business Plan for the plant will contain all information necessary to allow firefighting and other emergency response agencies to plan and implement safe responses to fires, spills, and other emergencies.

2.4.3.2 Personnel Safety Program

SEP will operate in compliance with federal and state occupational safety and health program requirements. Compliance with these programs will minimize project effects on employee safety.

2.5 Facility Reliability

This section discusses the expected facility availability, equipment redundancy, fuel availability, water availability, and project quality control measures.

2.5.1 Facility Availability

SEP is designed to operate between approximately 40 and 100 percent of base load to support dispatch service in response to customer demands for electricity. SEP is designed for an operating life of 30 years. Reliability and availability projections are based on this operating life. Operation and maintenance procedures will be consistent with industry standard practices to maintain the useful life status of plant

components. SEP's availability factor of 95 percent is consistent with the licensed BEP II availability factor of between 92 and 98 percent.

2.5.2 Redundancy of Critical Components

The following subsections identify equipment redundancy as it applies to SEP availability. Specifically, redundancy in the combined-cycle power block and in the balance-of-plant systems that serve it is described. The power block will be served by the following balance-of-plant systems: fuel supply system, DCS, boiler feedwater system, condensate system, demineralized water system, power cycle makeup and storage, steam condensing system, closed cooling water system, and compressed air system. Major equipment redundancy is summarized in Table 2-7.

2.5.2.1 Power Block

SEP consists of one CTG/HRSG power generation train that operates in a combined-cycle power block. The heat input from the exhaust gas from the CTG will be used in the steam generation system to produce steam. Thermal energy in the steam from the steam generation system will be converted to mechanical energy and then to electrical energy in the steam turbine subsystem. The expanded steam from the turbine will be condensed and recycled to the feedwater system. Power from the steam turbine subsystem will contribute approximately 38 percent of the total unfired power block output. If the steam turbine is nonoperational for any reason, the plant may still operate in bypass mode with the CTG at 100 percent load.

Table 2-7. Major Equipment Redundancy

Description	Number Per CCGT Block	Note
CTG and HRSG	1 – 100% trains	Steam turbine bypass system allows the CTG/HRSG train to operate at base load with the steam turbine out of service
Natural Gas Fired Duct Burners	1 – One per HRSG	Duct burners will be used for augmenting maximum power output.
Steam Turbine	1 – 100%	See note above pertaining to CTG and HRSG
HRSG Feedwater Pumps	2–100%	—
Condensate Pumps	2 – 100%	—
Surface Condenser	1 – 100%	Condenser must be in operation for plant to operate, however, it will contain two sections and spare tubes.
Cooling Tower	1 – 100%	—
Circulating Water Pumps	2 – 60%	Plant may be operated with one CW pump out of service at reduced capacity
Closed Cooling Water Pumps	2 – 100%	—
Closed Cooling Water Heat Exchanger	2 – 100%	—
Air Compressors	2 – 100%	Additional capacity will also be provided via instrument air receivers
Reverse Osmosis Units	2 – 100%	—
Lime Softener and Granular Filters	100% spare capacity	—

SEP has two fewer electrical generators than the licensed BEP II's two-on-one design. However, the level of redundancy in the ancillary systems is comparable between the SEP and licensed BEP II designs.

Furthermore, linking SEP and the existing BEP's water supply and wastewater systems ensure added redundancy and reliability to both plants.

2.5.2.2 CTG Subsystems

The SEP CTG subsystems will contain the combustion turbine, inlet air filtration, cooling/heating system, turbine and generator lubrication oil systems, starting system, fuel system, generator and excitation systems, and turbine control and instrumentation. The combustion turbine will produce thermal energy through the combustion of natural gas. The thermal energy will be converted into mechanical energy through rotation of the combustion turbine, which drives the compressor and generator. Exhaust gas from the combustion turbine will be used to produce steam in the associated HRSG. The generator excitation system will be a solid-state static system. Combustion turbine control and instrumentation (interfaced with the DCS) will cover the turbine governing system, the protective system, and the sequence logic.

2.5.2.3 HRSG Subsystems

The SEP steam generation system will consist of the HRSG and blowdown systems. The HRSG system will provide for the transfer of heat from the exhaust gas of a combustion turbine for the production of steam. This heat transfer will produce steam at the pressures and temperatures required by the steam turbine. The HRSG system will consist of ductwork, duct burner, heat transfer sections, an SCR system, and an oxidation catalyst module, as well as safety and auto relief valves and processing of continuous and intermittent blowdown drains.

2.5.2.4 Steam Turbine Subsystems

The SEP steam turbine will convert the thermal energy to mechanical energy to drive the steam turbine shaft to make electrical energy in the generator. The gas turbine and steam will be arranged on a single shaft with a single generator. The steam turbine will be capable of de-coupling from the CTG through the use of a clutch. The basic subsystems will include the steam turbine and auxiliary systems, turbine and generator lubrication oil systems, generator/exciter system, and turbine control and instrumentation.

2.5.2.5 Plant Distributed Control System

The SEP DCS will be a redundant microprocessor-based system and will have a functionally distributed architecture comprising a group of similar redundant processing units; these units will be linked to a group of operator consoles and an engineer workstation by redundant data highways. Each processor will be programmed to perform specific dedicated tasks for control information, data acquisition, annunciation, and historical purposes. Because they will be redundant, no single processor failure can cause or prevent a unit trip.

The DCS will interface with the control systems furnished by the CTG, ST, and HRSG suppliers to provide remote control capabilities, as well as data acquisition, annunciation, and historical storage of turbine and generator operating information.

The system will be designed with enough redundancy to preclude a single device failure from significantly affecting overall plant control and operation. Consideration will be given to the action performed by the control and safety devices in the event of control circuit failure. Controls and controlled devices will move to the safest operating condition upon failure.

Plant operation will be controlled from the operator panel in the control room. The operator panel will consist of multiple individual CRT/keyboard consoles, an engineering workstation, and a historian workstation. Each CRT/keyboard console will be an independent electronic package so that failure of a single package will not disable more than one CRT/keyboard. The engineering workstation will allow the control system operator interface to be revised by authorized personnel.

2.5.2.6 HRSG Feedwater System

The HRSG feedwater system will transfer feedwater from the low-pressure steam drum to the high-pressure sections of the HRSG. The system will consist of two, 100-percent-capacity pumps for supplying the HRSG. Each pump will be multistage, horizontal, and motor-driven and will include regulating control valves, minimum flow recirculation control, and other associated pipes and valves. The low-pressure system will receive feedwater directly from the low pressure drum using the pressure supplied by the condensate pumps.

2.5.2.7 Condensate System

The condensate system will provide a flow path from the condenser hot well to the HRSG low-pressure drum. The condensate system will include two, 100-percent-capacity, multistage, vertical, motor-driven condensate pumps.

2.5.2.8 Power Cycle Makeup Water Treatment System

The cycle makeup will include two, 100-percent-capacity trains of two-pass RO equipment followed by an electro-deionization system with two 100-percent-capacity trains.

2.5.2.9 Power Cycle Water Makeup and Storage

The power cycle water makeup and storage subsystem provides demineralized water storage and pumping capabilities to supply high-purity water for system cycle makeup, CTG water wash, and chemical cleaning operation. The major components of the system are a single demineralized water storage tank and two 100-percent-capacity, horizontal, centrifugal, cycle makeup water pumps.

2.5.2.10 Compressed Air System

The compressed air system will be designed to supply service and instrument air for the facility. Dry, oil-free instrument air will be provided for pneumatic operators and devices throughout the plant. Compressed service air will be provided to appropriate areas of the plant as utility stations consisting of a ball valve and quick disconnect fittings.

The instrument air system will be given demand priority over the service air system. A backpressure control valve will cut off the air supply to the service air header so as to maintain the minimum required instrument air pressure.

Two, 100-percent-capacity, oil free, rotary screw package air compressors will supply compressed air to the service and instrument air systems. Two, 100-percent-capacity, heat-less desiccant air dryers will be provided to dry the service and instrument air.

2.5.3 Fuel Availability

Consistent with the existing BEP II license, fuel will be delivered via an existing SoCalGas 16-inch-diameter pipeline located on the south side of the project site. SoCalGas has confirmed that its system has sufficient capacity to supply SEP at this location.

2.5.4 Water Availability

Consistent with the existing BEP II license, SEP will use a maximum of 2,800 acre-feet per year of water provided by degraded (brackish) groundwater wells for power plant cooling and process water, fire protection, and sanitary uses.

2.5.5 Wastewater Treatment Availability

SEP will discharge an average of 14.4 gallons per minute of process wastewater to the onsite evaporation ponds, which is consistent with average BEP II's discharge of 13 gallons per minute. All sanitary waste will go to an onsite septic system with a leach field.

2.6 Thermal Efficiency

The maximum gross thermal efficiency that can be expected from the configuration specified for SEP is approximately 60 percent on a lower heating value basis. This level of efficiency is achieved when the facility is base-loaded. SEP reflects the latest available combined-cycle technologies which will increase the overall electrical generation efficiency of the grid. The project is expected to have a heat rate at minimum load which is similar to, or better than, most plants' heat rates at base load. Further, the proposed modification is consistent with recent CAISO publications on the need for fast response Flexible Ramping Capability to support the growth of usually inflexible renewable energy resources. It is expected that SEP will be primarily operated in load-following or cycling service. The number of startup and shutdown cycles is expected to be approximately 200 per year. Figures 2-7a and 2-7b present a heat and mass balance for a range of ambient temperatures with and without the duct burners operating. BEP II was licensed with a thermal efficiency of 55 to 58 percent.[4]

Plant fuel consumption will depend on the operating profile of the power plant. It is estimated that the range of fuel consumed by the power plant will be from a minimum of near zero BTUs per hour to a maximum of approximately 2,971 MMBtu/hr - LHV at 59˚F ambient temperature (or 78,434 MMBtu/day – HHV). By contrast, BEP II was licensed assuming 116,316 MMBtu/day – HHV of fuel consumption.[5]

The net annual electrical production of SEP cannot be accurately forecasted at this time because of uncertainties in the system load-dispatching model and the associated uncertainties in load forecasts. The maximum annual generation possible from the facility is estimated to be approximately 3,235 gigawatt hours per year (based on an annual average facility base load rating of 486.5 MW, 95 percent availability, and 7,000 hours per year).

2.7 Facility Closure

Facility closure can be temporary or permanent. Temporary closure is defined as a shutdown for a period exceeding the time required for normal maintenance, including closure for overhaul or replacement of the CTG. Disruption in the supply of natural gas or damage to the plant from earthquake, fire, storm, or other natural acts are cause for temporary closure. Permanent closure is defined as a cessation in operation with no intent to restart operation because of plant age, damage to the plant beyond repair, economic conditions, or other reasons. The following sections discuss temporary and permanent facility closure.

2.7.1 Temporary Closure

For a temporary facility closure, where there is no release of hazardous materials, security of the facilities will be maintained on a 24-hour basis, and the CEC and other responsible agencies will be notified. Depending on the length of shutdown necessary, a contingency plan for the temporary cessation of operation will be implemented. The contingency plan will be conducted to ensure conformance with all applicable LORS and the protection of public health, safety, and the environment. The plan, depending on the expected duration of the shutdown, may encompass the draining of all chemicals from storage tanks and other equipment and the safe shutdown of all equipment. All wastes will be disposed of according to applicable LORS.

Where the temporary closure includes damage to the facility, and there is a release or threatened release of regulated substances or other hazardous materials into the environment, procedures will be followed as set forth in a Risk Management Plan and a Hazardous Materials Business Plan to be developed. Procedures will encompass methods to control releases, notification of applicable

[4] BEP II Commission Decision, CEC-800-2005-005-CMF, page 287.

[5] BEP II Petition to Amend, October 26, 2009, Table 5.2-2.

authorities and the public, emergency response, and training for plant personnel in responding to and controlling releases of hazardous materials. Once the immediate problem is solved, and the regulated substance/hazardous material release is contained and cleaned up, temporary closure will proceed as described above for a closure where there is no release of hazardous materials.

2.7.2 Permanent Closure

The planned life of SEP is 30 years. However, if SEP were still economically viable, it could be operated longer. It is also possible that the facility could become economically noncompetitive in less than 30 years, forcing early decommissioning. Whenever the facility is permanently closed, the closure procedure will follow a plan that will be developed as described below.

The removal of the facility from service, or decommissioning, may range from "mothballing" to the removal of all equipment and appurtenant facilities, depending on conditions at the time. Because the conditions that will affect the decommissioning decision are largely unknown at this time, these conditions will be presented to the CEC when more information is available and the timing for decommissioning is more imminent.

To ensure that public health and safety and the environment are protected during decommissioning, a decommissioning plan will be submitted to the CEC for approval prior to decommissioning. The plan will address the following:

- Proposed decommissioning activities for the facility and all appurtenant facilities constructed as part of the facility
- Conformance of the proposed decommissioning activities to all applicable LORS and local/regional plans
- Activities necessary to restore the site if the plan requires removal of all equipment and appurtenant facilities
- Decommissioning alternatives other than complete restoration
- Associated costs of the proposed decommissioning and the source of funds to pay for the decommissioning

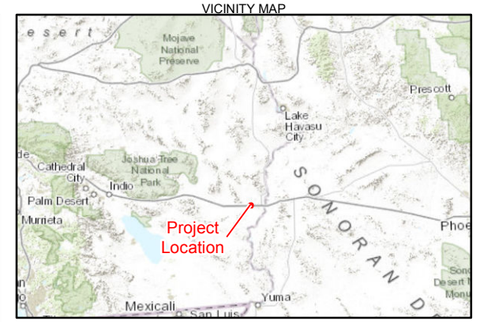
In general, the decommissioning plan for the facility will attempt to maximize the recycling of all facility components. If possible, unused chemicals will be sold back to the suppliers or other purchasers or users. All equipment containing chemicals will be drained and shut down to ensure public health and safety and to protect the environment. All nonhazardous wastes will be collected and disposed of in appropriate landfills or waste collection facilities. All hazardous wastes will be disposed of according to all applicable LORS. The site will be secured 24 hours per day during decommissioning activities.

2.8 References

Caithness Blythe II, LLC. 2009. *Petition to Amend the Blythe Energy Project Phase II (02-AFC-1C)*. October 26.

California Independent System Operator (CAISO). 2008. Generator Interconnection Process Reform, Revised Draft Proposal, June 27, 2008. California Independent System Operator. Available at: http://www.caiso.com/1f42/1f42c00d28c30.html.

VICINITY MAP



LEGEND

Project Details

Property Boundary

Image Source: NAIP 2012

N

0 400 800

Feet

FIGURE 2-1
Site Vicinity Map
Sonoran Energy Project
Riverside County, California

LEGEND

1 - STEAM TURBINE
2 - STEAM TURBINE LO MODULE
3 - GAS TURBINE
4 - GAS TURBINE LO MODULE
5 - HEAT RECOVERY STEAM GENERATOR
6 - HRSG LP/ECONOMIZER RECIRC PUMP
7 - HRSG BLOW DOWN SUMP
8 - STEP UP TRANSFORMER
9 - AQUEOUS AMMONIA STORAGE
10 - AQUEOUS AMMONIA FORWARD PUMPS
11 - FUEL GAS CONDITIONING AND PRESSURE REGULATING STATION
12 - FUEL GAS DRAINS TANK
13 - SURFACE CONDENSER
14 - COOLING TOWER
15 - CIRCULATING WATER PUMPS
16 - CLOSED COOLING WATER (CCW) HEAT EXCHANGER
17 - CCW EXPANSION TANK
18 - CCW PUMPS
19 - AUX BOILER
20 - AUX BOILER BLOW DOWN SUMP
21 - WASH WATER SKID
22 - WASH WATER DRAINS TANK
23 - AUX TRANSFORMER
24 - GENERATOR LINE ACCESSORY COMPARTMENT
25 - GENERATOR NEUTRAL ACCESSORY COMPARTMENT
26 - INLET AIR FILTER/EVAPORATIVE COOLER
27 - NOT USED
28 - NOT USED
29 - GE DLN GAS MODULE
30 - PACKAGED ELECTRONIC/ELECTRICAL CONTROL COMPARTMENT
31 - FEEDWATER PUMPS
32 - DEMIN WATER TANK
33 - DEMIN WATER PUMPS
34 - RAW WATER TANK
35 - RAW WATER PUMPS
36 - WATER TREATMENT AREA
37 - CONDENSATE PUMPS
38 - HRSG BLOW DOWN TANK
39 - CONDENSATE DRAINS / FLASH TANK
40 - FIRE PUMP SKID
41 - AIR COMPRESSORS, DRYERS AND RECEIVER
42 - VACUUM PUMPS
43 - CHEM FEED SKIDS
44 - GLAND STEAM CONDENSER
45 - N2 STORAGE
46 - CO2 STORAGE
47 - CT FIRE PROTECTION SKID
48 - HYDROGEN STORAGE
49 - HP, IP, LP BYPASS VALVES
50 - WASTE WATER STORAGE
51 - OIL/WATER SEPARATOR
52 - DUCT BURNER SKID
53 - SCANNER AIR SKID
54 - CEMS
55 - WAREHOUSE
56 - NEW WELL
57 - AMMONIA FLOW CONTROL UNIT
58 - FUEL GAS PERFORMANCE HEATER
59 - PDC/ELECTRICAL ROOM
60 - EVAP POND
61 - BRINE CONCENTRATOR

0 40 80 160 240
1"= 80'

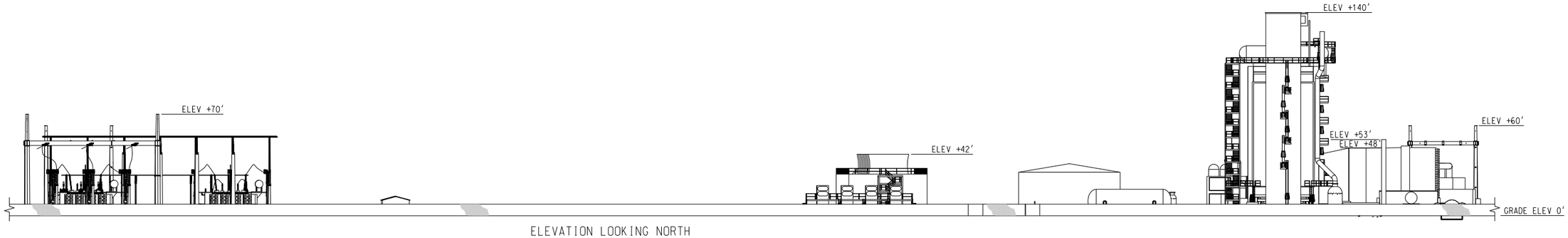
FIGURE 2-2a
General Arrangement
Sonoran Energy Project
Riverside County, California

Source: Power Engineers, Drawing MSK1-1, Rev. D, 12/23/14.

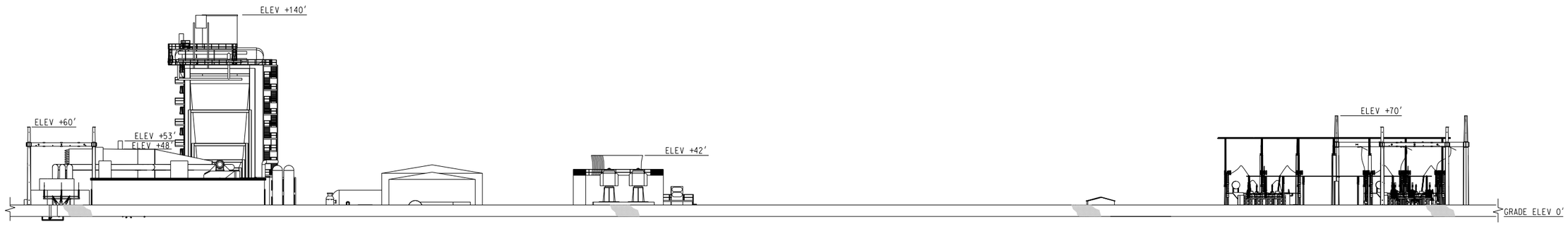
CH2MHILL

FIGURE 2-2b
General Arrangement with 161 kV Interconnection
Sonoran Energy Project
Riverside County, California

Source: Power Engineers, Drawing TSK1-1, Rev. A, 07/02/15.



ELEVATION LOOKING NORTH

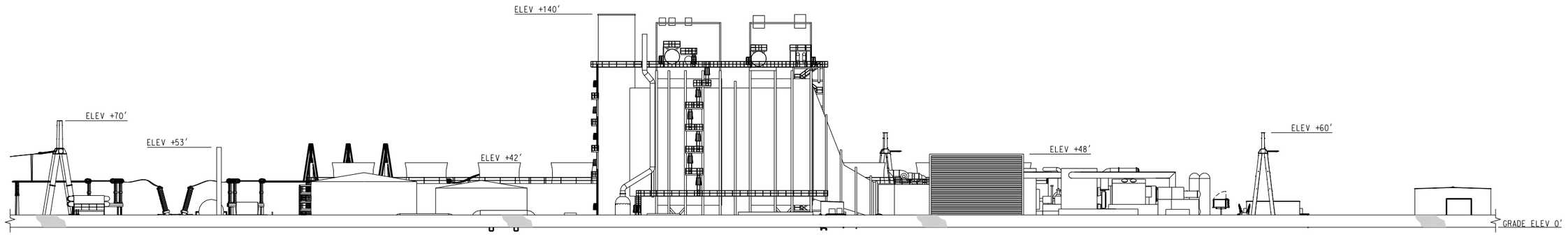


ELEVATION LOOKING SOUTH

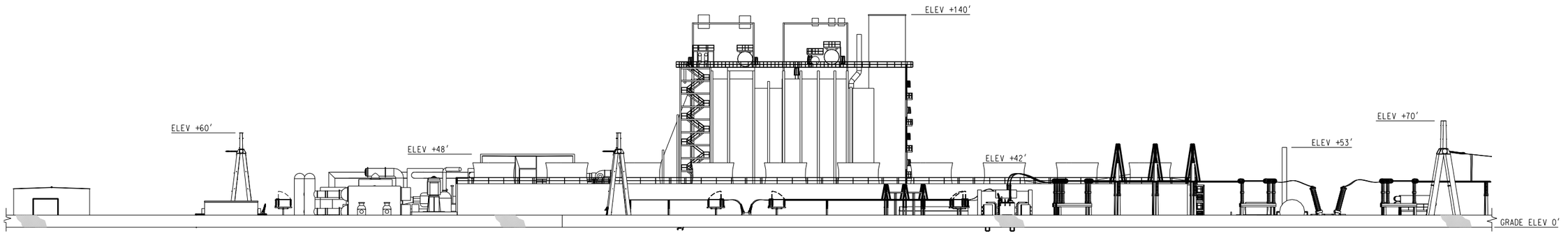
FIGURE 2-3a
Elevation Drawings (Looking North and South)
Sonoran Energy Project
Riverside County, California

Source: Power Engineers, Drawing MSK1-2, Rev. C, 07/06/15.

CH2MHILL



ELEVATION LOOKING WEST



ELEVATION LOOKING EAST

FIGURE 2-3b
Elevation Drawings (Looking West and East)
Sonoran Energy Project
Riverside County, California

Source: Power Engineers, Drawing MSK1-3, Rev. C, 07/06/15.

CH2MHILL.

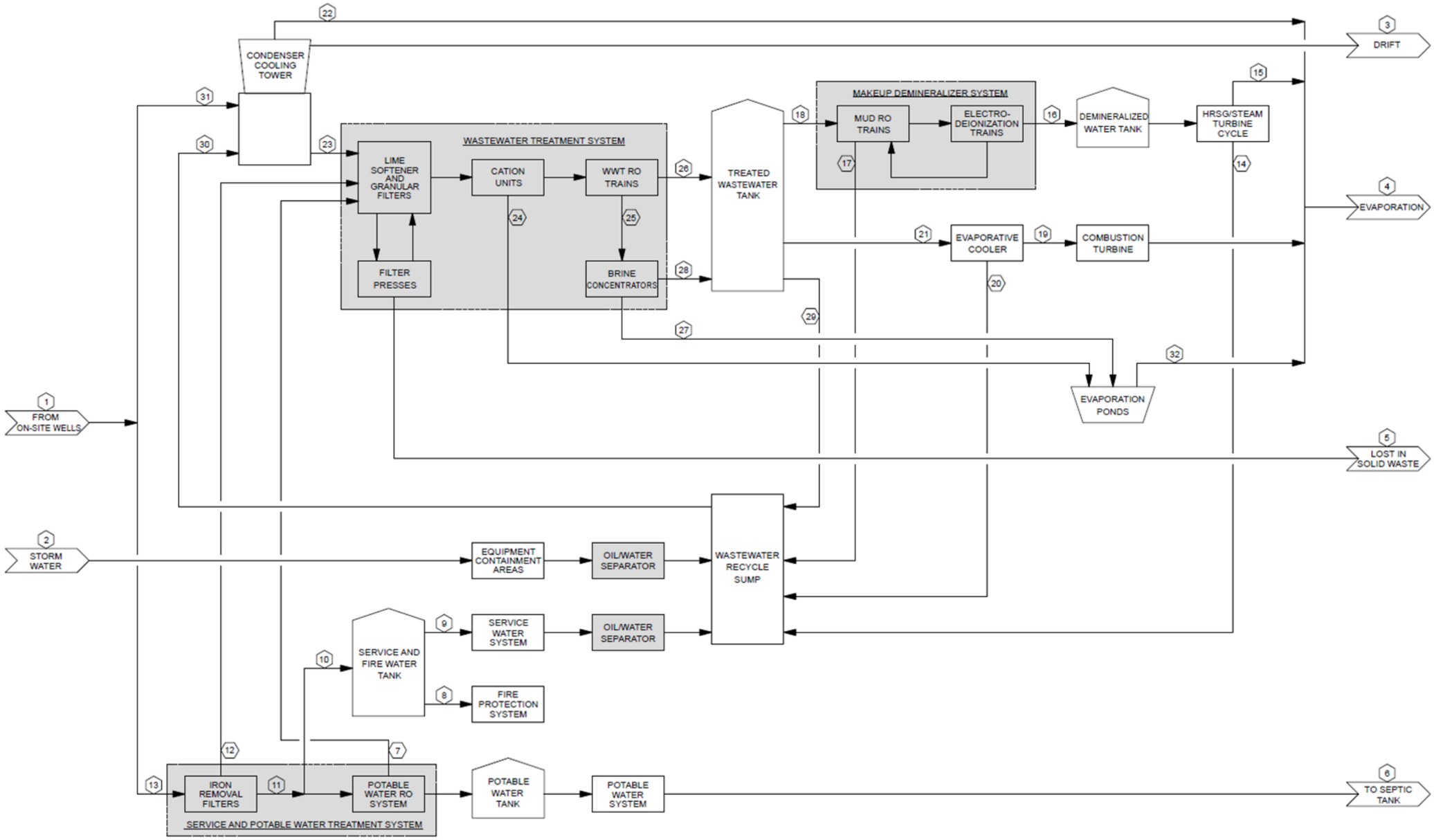


FIGURE 2-4a
Water Balance Diagram
Sonoran Energy Project
Riverside County, California

Source: Power Engineers, Drawing M2-2-1, Rev. A, 12/17/14.

HEAT BALANCE CASE	29	30	31	32	33	34	35	36
AMBIENT TEMPERATURE, DEG. F	59	59	74	74	110	110	122	122
RELATIVE HUMIDITY, %	60	60	60	60	60	60	60	60
DUCT FIRING	ON	OFF	ON	OFF	ON	OFF	ON	OFF
EVAPORATIVE COOLERS	ON	ON	ON	ON	ON	ON	ON	ON
LOAD	100	100	100	100	100	100	100	100

NUMBER	DESCRIPTION	AVERAGE FLOW RATE - GALLONS PER MINUTE							
1	RAW WATER FROM WELLS	1,675	1,473	1,804	1,587	2,227	1,977	2,345	2,071
2	STORM WATER	0	0	0	0	0	0	0	0
3	COOLING TOWER DRIFT	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
4	TOTAL EVAPORATION LOSSES	1,672	1,469	1,801	1,584	2,224	1,973	2,342	2,067
5	WATER LOST IN SOLID WASTE	0.8	0.7	0.9	0.8	1.0	0.9	1.1	1.0
6	SANITARY WASTEWATER DISCHARGED TO SEPTIC TANK	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
7	POTABLE WATER REVERSE OSMOSIS REJECT	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
8	FIRE PROTECTION	0	0	0	0	0	0	0	0
9	MISCELLANEOUS SERVICE WATER USES	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
10	TOTAL SERVICE AND FIRE WATER	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
11	TOTAL WATER PRODUCED BY IRON REMOVAL FILTERS	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
12	IRON REMOVAL FILTER BACKWASH	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
13	WELL WATER SUPPLIED TO IRON REMOVAL FILTERS	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
14	HRSG BLOWDOWN	43.8	39.0	43.8	38.9	44.7	39.9	44.6	39.7
15	MISCELLANEOUS LOSSES FROM HRSG/ STEAM TURBINE CYCLE	21.9	19.5	21.9	19.4	22.3	20.0	22.3	19.8
16	DEMINERALIZED WATER PRODUCED	65.8	58.5	65.6	58.3	67.0	59.9	66.9	59.5
17	MAKEUP DEMINERALIZER REVERSE OSMOSIS REJECT	7.3	6.5	7.3	6.5	7.4	6.7	7.4	6.6
18	TREATED WASTE WATER TO MAKEUP DEMINERALIZER SYSTEM	73.1	65.0	72.9	64.8	74.5	66.5	74.4	66.1
19	EVAPORATION FROM EVAPORATIVE COOLER	16.9	16.9	39.2	39.2	87.7	87.7	93.9	93.9
20	BLOWDOWN FROM EVAPORATIVE COOLER	1.9	1.9	4.4	4.4	9.7	9.7	10.4	10.4
21	MAKEUP TO EVAPORATIVE COOLER	18.7	18.7	43.5	43.5	97.4	97.4	104.3	104.3
22	COOLING TOWER EVAPORATION	1618	1419	1724	1511	2094	1848	2204	1935
23	COOLING TOWER BLOWDOWN	404	354	430	377	523	461	551	483
24	CATION REGENERATION WASTEWATER	6.1	5.3	6.5	5.7	7.8	6.9	8.3	7.2
25	WASTEWATER REVERSE OSMOSIS REJECT	23.4	20.5	24.9	21.9	30.3	26.7	31.9	28.0
26	WASTEWATER REVERSE OSMOSIS PERMEATE	374	329	399	350	485	428	510	448
27	REJECT FROM BRINE CONCENTRATORS	9.4	8.2	10.0	8.7	12.1	10.7	12.8	11.2
28	DISTILLATE FROM BRINE CONCENTRATORS	14.0	12.3	15.0	13.1	18.2	16.0	19.1	16.8
29	TREATED WASTEWATER TO RECYCLE SUMP	297	257	297	254	331	280	351	294
30	WASTEWATER RECYCLED TO COOLING TOWER	353	308	356	307	396	339	416	354
31	COOLING TOWER MAKEUP FROM ON-SITE WELLS	1,669	1,467	1,799	1,581	2,222	1,971	2,340	2,065
32	EVAPORATION FROM EVAPORATION PONDS	15.4	13.5	16.4	14.4	20.0	17.6	21.0	18.4

NOTES: 1. THE ABOVE IS BASED ON NO STORMWATER FLOW.
2. THE ABOVE IS BASED ON FIVE (5) CYCLES OF CONCENTRATION IN THE COOLING TOWER. COOLING WATER TDS WOULD BE APPROXIMATELY 5,000 PPM.
3. WITH AN AVERAGE EVAPORATION RATE OF APPROXIMATELY 18 GPM, A NET EVAPORATION LOSS FROM A POND OF APPROXIMATELY 50 INCHES PER YEAR, AND OPERATION FOR 5 DAYS OUT OF 7, TOTAL AREA REQUIRED FOR THE EVAPORATION PONDS WOULD BE APPROXIMATELY 5 ACRES.

FIGURE 2-4b
Water Balance Table
Sonoran Energy Project
Riverside County, California

Source: Power Engineers, Drawing M2-2-2, Rev. A, 12/17/14.

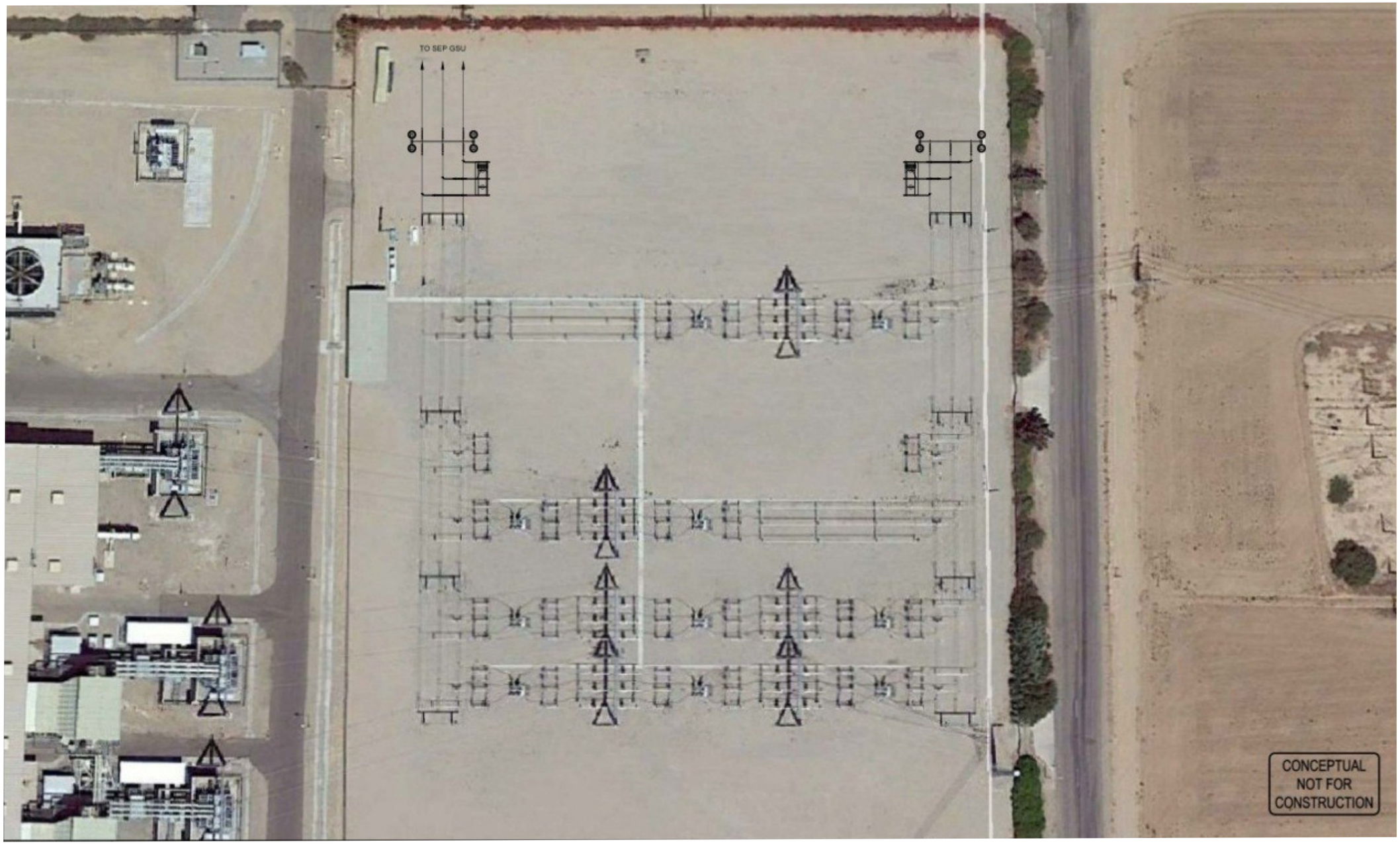
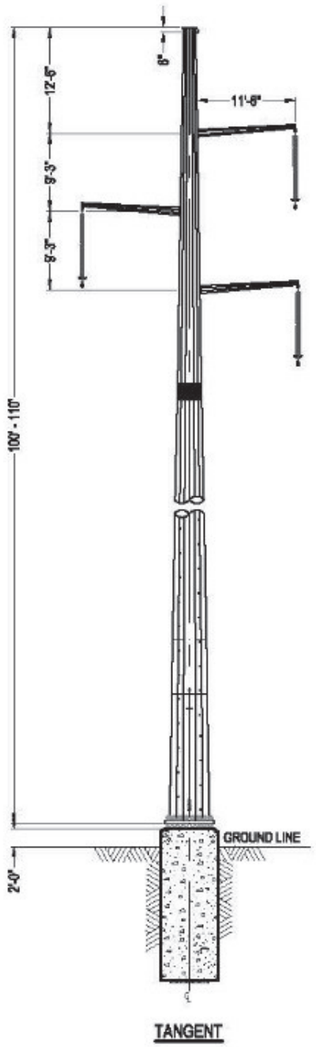


FIGURE 2-5
Electrical 161-kV General Arrangement
Buck Termination Diagram
Sonoran Energy Project
Riverside County, California

Source: Power Engineers, Drawing E1-1, Rev. 0, 2/2015.

THIS DRAWING WAS PREPARED BY POWER ENGINEERS, INC. FOR A SPECIFIC PROJECT, TAKING INTO CONSIDERATION THE SPECIFIC AND UNIQUE REQUIREMENTS OF THE PROJECT. REUSE OF THIS DRAWING OR ANY INFORMATION CONTAINED IN THIS DRAWING FOR ANY PURPOSE IS PROHIBITED UNLESS WRITTEN PERMISSION FROM BOTH POWER AND POWER'S CLIENT IS GRANTED.



TANGENT

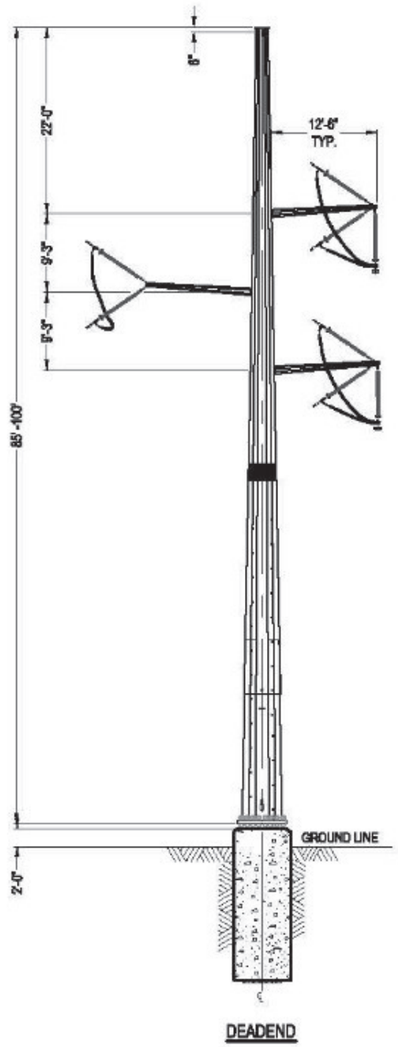


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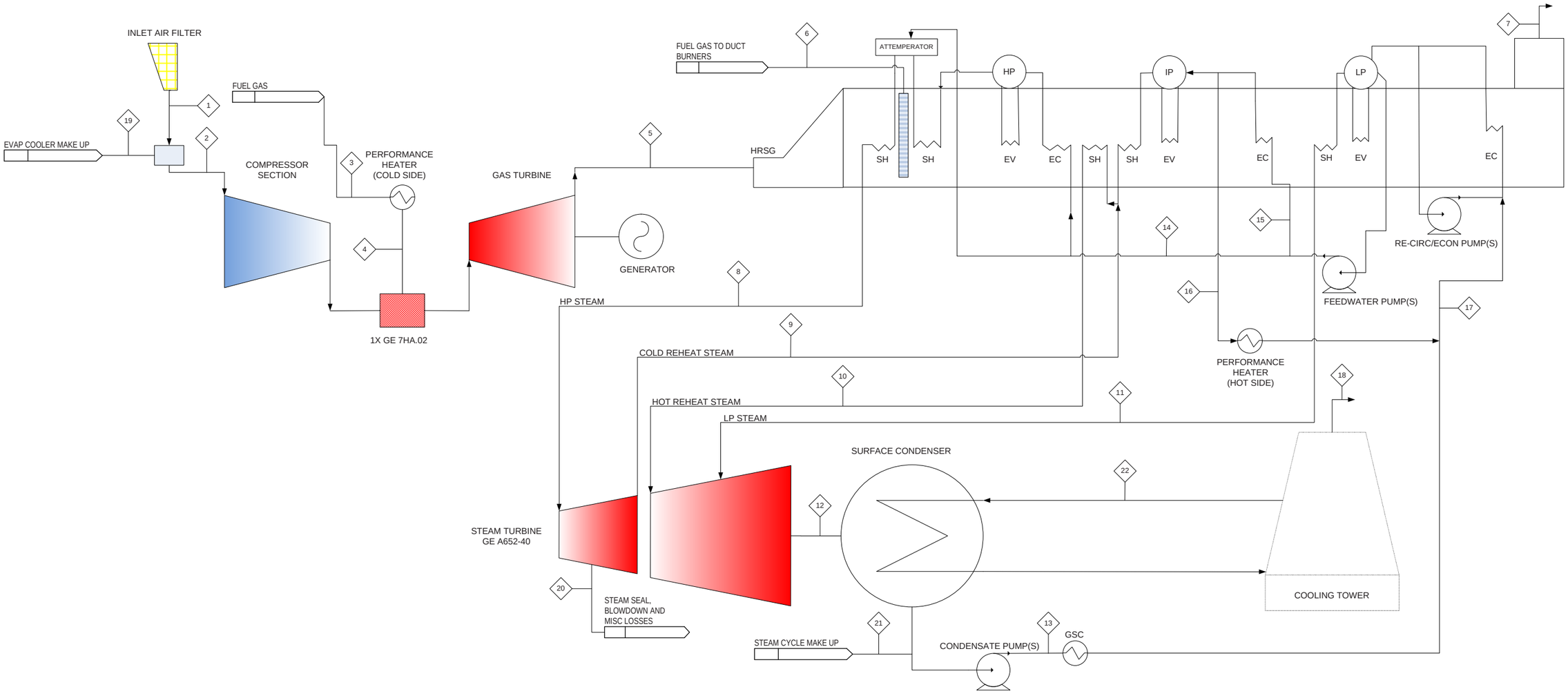
FIGURE 2-6
Typical Support Tower Designs
Sonoran Energy Project
Riverside County, California

Source: Power Engineers, Drawing DWG-1.



NOTES:

1. ALL CASES SHOW ONE GE 7HA.02 TURBINE IN OPERATION AT 100% LOAD
2. THE GAS TURBINE AND STEAM TURBINE ARE IN A SINGLE SHAFT ARRANGEMENT
3. THE HRSG SUPERHEATER, ECONOMIZER AND EVAPORATOR SECTIONS ARE SIMPLIFIED FOR CLARITY AND DO NOT REPRESENT ACTUAL LOCATIONS OR QUANTITIES WITHIN THE HRSG
4. COOLING TOWER EVAPORATION AND CIRCULATING WATER FLOWRATES ARE SHOWN IN GPM
5. NET PLANT OUTPUT IS SHOWN WITH ZERO BLOWDOWN AND ZERO STEAM CYCLE MAKEUP

FIGURE 2-7a
Heat and Mass Balance Diagram
Sonoran Energy Project
Riverside County, California

Source: Power Engineers, Drawing M2-1-1, Rev. C, 4/27/15.

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PLANT PERFORMANCE SUMMARY										
DESCRIPTION	CASE 20767	CASE 20769	CASE 20758	CASE 20759	CASE 20761	CASE 20762	CASE 20764	CASE 20765	CASE 19950	CASE 19949
PLANT GROSS OUTPUT, KW	548,477.0	519,905.0	543,923.0	515,193.0	525,291.0	496,258.0	526,546.0	497,325.0	514,585.0	484,768.0
ESTIMATED PLANT AUXILIARY POWER, KW	17,551.3	15,597.2	17,405.5	15,455.8	15,758.7	14,143.4	15,796.4	14,173.8	15,437.6	13,815.9
PLANT NET OUTPUT, KW	530,925.7	504,307.9	526,517.5	499,737.2	509,532.3	482,114.6	510,749.6	483,151.2	499,147.5	470,952.1
FUEL INPUT GAS TURBINE, MMBTU/HR (LHV)	2,923.6	2,923.6	2,853.6	2,853.6	2,738.9	2,738.9	2,757.6	2,757.6	2,699.4	2,699.4
FUEL INPUT GAS TURBINE, MMBTU/HR (HHV)	3,239.2	3,239.2	3,161.8	3,161.8	3,034.7	3,034.6	3,055.4	3,055.4	2,990.9	2,990.9
FUEL TO DUCT BURNER, MMBTU/HR (LHV)	200.0	0.0	200.0	0.0	200.0	0.0	200.0	0.0	200.0	0.0
FUEL TO DUCT BURNER, MMBTU/HR (HHV)	221.6	0.0	221.6	0.0	221.6	0.0	221.6	0.0	221.6	0.0
PLANT NET HEAT RATE, BTU/KWH (LHV)	5,883.2	5,797.2	5,799.7	5,710.2	5,767.9	5,681.0	5,790.7	5,707.6	5,808.7	5,731.8
PLANT NET HEAT RATE, BTU/KWH (HHV)	6,518.5	6,423.1	6,426.0	6,326.8	6,390.7	6,294.4	6,416.0	6,323.9	6,436.0	6,350.7
PLANT THERMAL EFFICIENCY, % (LHV)	58.0%	58.9%	58.8%	59.8%	59.2%	60.1%	58.9%	59.8%	58.7%	59.5%

STREAM NUMBER				1	2	3	4	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
DESCRIPTION				Air Entering Evap Cooler	Air Entering Gas Turbine	Fuel Gas to Performance Heater	Fuel Gas to Gas Turbine	Fuel Gas to Duct Burners	Exhaust Gas Leaving Stack	HP Steam leaving HRSG	CRH Steam Leaving ST	HRH Steam Leaving HRSG	LP Steam Leaving HRSG	Steam Turbine Exhaust	Condensate Pump Flow	Feedwater Pump HP Flow	Feedwater Pump IP Takeoff	IP FW to Performance Heater	Total Condensate Flow	Cooling Tower Evaporation (GPM)	EVAP Cooler Makeup	Steam Seal, BD and Misc losses	Steam Cycle Make up	Circulating Water (GPM)
CASE: 20767 0° F 50% RH	100% GTG LOAD EVAP: OFF DB: 200 MM BTU/hr	PRESSURE	PSIA	14.52	14.39	544.70	-	-	14.52	2,342.30	662.36	614.41	88.45	0.44	-	2,997.14	924.98	877.29	-	-	-	-	-	27.26
		TEMPERATURE	° F	0.00	0.00	60.00	440.00	80.00	156.70	1,052.90	704.70	1,057.80	592.90	75.70	76.30	326.90	322.00	477.70	78.50	-	59.00	-	59.00	79.00
		ENTHALPY	BTU/LBM	-	-	-	-	-	-	1,497.20	1,350.70	1,548.50	1,326.80	1,002.10	-	302.60	293.90	461.80	-	-	-	-	-	-
		TOTAL FLOW	LBM/HR	5,640.90	5,640.90	141.70	141.70	9.70	5,810.30	869.40	854.00	915.70	96.30	1,022.70	1,027.40	867.90	145.50	83.80	1,111.20	1,352.95	0.00	0.00	0.00	129,480.00
CASE: 20769 0° F 50% RH	100% GTG LOAD EVAP: OFF DB: OFF	PRESSURE	PSIA	14.52	14.39	544.70	-	-	14.52	1,910.24	557.96	518.43	83.25	0.42	-	3,164.26	962.77	911.62	-	-	-	-	-	27.26
		TEMPERATURE	° F	0.00	0.00	60.00	440.00	-	167.60	1,066.10	728.00	1,064.00	579.20	74.10	74.90	324.20	318.60	471.10	78.30	-	59.00	-	59.00	79.00
		ENTHALPY	BTU/LBM	-	-	-	-	-	-	1,517.90	1,370.20	1,554.40	1,320.40	1,007.20	-	300.20	290.50	454.30	-	-	-	-	-	-
		TOTAL FLOW	LBM/HR	5,640.90	5,640.90	141.70	141.70	-	5,800.60	695.50	682.80	768.50	120.30	897.50	901.60	964.00	172.70	87.00	988.50	1,212.78	0.00	0.00	0.00	129,480.00
CASE: 20758 39° F 47% RH	100% GTG LOAD EVAP: OFF DB: 200 MM BTU/Hr	PRESSURE	PSIA	14.52	14.39	544.70	-	-	14.52	2,441.29	682.06	632.57	88.65	0.51	-	2,970.21	920.83	874.38	-	-	-	-	-	27.26
		TEMPERATURE	° F	39.00	39.00	80.00	440.00	80.00	154.90	1,089.10	731.40	1,095.70	594.70	80.10	80.70	326.80	322.00	477.40	82.50	-	59.00	-	59.00	79.00
		ENTHALPY	BTU/LBM	-	-	-	-	-	-	1,517.50	1,365.30	1,568.80	1,327.70	1,007.90	-	302.40	293.90	461.50	-	-	-	-	-	-
		TOTAL FLOW	KPPH	5,457.60	5,457.60	138.30	138.30	9.70	5,623.10	893.80	878.20	930.60	86.80	1,028.40	1,033.00	892.30	134.20	81.80	1,114.80	1,368.00	0.00	0.00	0.00	129,480.00
CASE: 20759 39° F 47% RH	100% GTG LOAD EVAP: OFF DB: OFF	PRESSURE	PSIA	14.52	14.39	544.70	-	-	14.52	2,010.15	578.46	537.37	83.03	0.44	-	3,145.33	958.71	909.03	-	-	-	-	-	27.26
		TEMPERATURE	° F	39.00	39.00	80.00	440.00	-	163.30	1,102.80	754.60	1,102.20	582.10	75.80	76.50	323.60	318.20	471.10	79.60	-	59.00	-	59.00	79.00
		ENTHALPY	BTU/LBM	-	-	-	-	-	-	1,537.60	1,384.10	1,574.70	1,321.90	1,012.50	-	299.50	290.00	454.30	-	-	-	-	-	-
		TOTAL FLOW	KPPH	5,457.60	5,457.60	138.30	138.30	-	5,613.50	723.00	709.90	786.50	110.30	905.90	909.90	721.50	161.40	87.70	994.70	1,230.00	0.00	0.00	0.00	129,480.00
CASE: 20761 74° F 31% RH	100% GTG LOAD EVAP: ON DB: 200 MM BTU/Hr	PRESSURE	PSIA	14.52	14.39	544.70	-	-	14.52	2,422.68	673.54	624.52	87.82	0.77	-	2,987.89	926.37	880.63	-	-	-	-	-	27.26
		TEMPERATURE	° F	74.00	58.00	80.00	440.00	80.00	157.80	1,101.50	740.90	1,107.60	591.50	93.20	93.90	326.20	321.40	475.20	94.70	-	59.00	-	59.00	79.00
		ENTHALPY	BTU/LBM	-	-	-	-	-	-	1,526.00	1,371.30	1,575.50	1,326.20	1,011.50	-	301.90	293.30	459.00	-	-	-	-	-	-
		TOTAL FLOW	KPPH	5,256.30	5,273.30	132.70	132.70	9.70	5,415.60	882.00	866.70	914.70	87.20	1,012.70	1,017.30	880.50	127.20	79.20	1,096.50	1,724.00	18.90	0.00	0.00	129,480.00
CASE: 20762 74° F 31% RH	100% GTG LOAD EVAP: ON DB: OFF	PRESSURE	PSIA	14.52	14.39	544.70	-	-	14.52	1,990.95	570.54	529.97	81.61	0.69	-	3,156.27	961.90	913.05	-	-	-	-	-	27.26
		TEMPERATURE	° F	74.00	58.00	80.00	440.00	-	167.80	1,114.50	763.80	1,113.30	579.90	89.50	90.30	3,225.00	317.00	468.90	92.30	-	59.00	-	59.00	79.00
		ENTHALPY	BTU/LBM	-	-	-	-	-	-	1,545.30	1,389.60	1,580.90	1,320.90	1,015.90	-	298.40	288.80	451.70	-	-	-	-	-	-
		TOTAL FLOW	KPPH	5,256.30	5,273.20	132.70	132.70	-	5,405.90	712.60	699.70	772.60	107.60	889.10	893.10	710.80	155.10	82.20	975.20	1,511.00	18.90	0.00	0.00	129,480.00
CASE: 20764 110° F 13% RH	100% GTG LOAD EVAP: ON DB: 200 MM BTU/Hr	PRESSURE	PSIA	14.52	14.39	544.70	-	-	14.52	2,472.53	688.64	638.67	91.05	1.05	-	2,959.24	921.23	875.43	-	-	-	-	-	27.26
		TEMPERATURE	° F	110.00	74.00	80.00	440.00	80.00	162.60	1,098.30	738.10	1,105.50	592.40	103.40	104.00	328.80	324.00	478.20	104.00	-	59.00	-	59.00	79.00
		ENTHALPY	BTU/LBM	-	-	-	-	-	-	1,522.60	1,368.90	1,574.00	1,326.40	1,018.20	-	304.50	296.00	462.40	-	-	-	-	-	-
		TOTAL FLOW	KPPH	5,383.70	5,401.20	133.60	133.60	9.70	5,544.50	902.30	886.50	936.20	95.40	1,042.60	1,047.30	900.80	128.30	78.60	1,125.90	2,094.00	42.10	0.00	0.00	129,480.00
CASE: 20765 110° F 13% RH	100% GTG LOAD EVAP: ON DB: OFF	PRESSURE	PSIA	14.52	14.39	544.70	-	-	14.52	2,042.15	585.50	543.90	83.99	0.95	-	3,138.42	958.30	909.35	-	-	-	-	-	27.26
		TEMPERATURE	° F	110.00	74.00	80.00	440.00	-	175.70	1,112.20	761.40	1,112.00	582.10	100.00	100.70	324.40	319.00	471.90	101.60	-	59.00	-	59.00	79.00
		ENTHALPY	BTU/LBM	-	-	-	-	-	-	1,542.60	1,387.50	1,579.90	1,321.80	1,023.50	-	300.30	290.90	455.20	-	-	-	-	-	-
		TOTAL FLOW	KPPH	5,383.70	5,401.20	133.60	133.60	-	5,534.80	732.30	719.10	793.50	111.40	913.90	918.00	730.80	155.70	81.30	999.30	1,848.00	42.10	0.00	0.00	129,480.00
CASE: 19950 122° F 15% RH	100% GTG LOAD EVAP: ON DB: 200 MM BTU/Hr	PRESSURE	PSIA	14.52	14.39	544.70	-	-	14.52	2,463.69	684.35	634.60	90.43	1.25	-	2,968.51	923.97	878.53	-	-	-	-	-	27.26
		TEMPERATURE	° F	122.00	83.00	80.00	440.00	80.00	164.40	1,105.03	743.60	1,112.20	590.90	109.20	109.90	328.30	323.50	477.00	109.40	-	59.00	-	59.00	79.00
		ENTHALPY	BTU/LBM	-	-	-	-	-	-	1,527.30	1,372.30	1,577.80	1,325.70	1,027.30	-	304.00	295.50	461.00	-	-	-	-	-	-
		TOTAL FLOW	KPPH	5,269.30	5,286.40	130.80	130.80	9.70	5,426.90	896.20	880.60	928.00	94.50	1,033.50	1,038.10	894.70	127.70	77.30	1,115.40	2,204.00	44.90	0.00	0.00	129,480.00
CASE: 19949 122° F 15% RH	100% GTG LOAD EVAP: ON DB: OFF	PRESSURE	PSIA	14.52	14.39	544.70	-	-	14.52	2,018.54	581.60	540.78	83.21	1.13	-	3,146.25	959.50	910.90	-	-	-	-	-	27.26
		TEMPERATURE	° F	122.00	83.00	80.00	440.00	-	178.00	1,114.50	764.90	1,113.40	581.10	106.00	106.80	323.70	318.30	471.20	107.10	-	59.00	-	-	79.00
		ENTHALPY	BTU/LBM	-	-	-	-	-	-	1,544.60	1,389.60	1,580.70	1,321.40	1,032.50	-	299.70	290.20	454.40	-	-	-	-	-	-
		TOTAL FLOW	KPPH	5,269.30	5,286.40	130.80	130.80	-	5,417.20	722.40	709.30	788.50	109.40	907.00	911.00	718.00	159.00	79.80	990.80	1,935.00	44.90	0.00	0.00	129,480.00

Source: Power Engineers, Drawing M2-1-2, Rev. A, 4/27/15.

FIGURE 2-7b
Heat and Mass Balance Table
Sonoran Energy Project
Riverside County, California

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SECTION 3

Environmental Analysis of Project Modification

The project modification discussed herein will not cause additional impacts beyond those identified in the Commission's Final Decision (02-AFC-01C), as amended. Any potential impacts associated with the proposed modification will be less than significant.

3.1 Air Quality

This section of the PTA describes and evaluates the air quality effects of the proposed project modification. Some air quality-related data are presented in other sections of this PTA, including an evaluation of toxic air pollutants (see Section 3.8, Public Health) and information relating to the fuel characteristics, heat rate, and startup and operating limits of the SEP (see Section 2, Project Description).

The currently licensed design is a nominal 569-MW combined-cycle power plant, consisting of two Siemens SGT6-5000F combined-cycle gas turbines with Flex Plant ™ 30 rapid start technology, a 60 MMBtu/hr auxiliary boiler, a mechanical-draft wet cooling tower, a diesel-powered fire water pump, and ancillary facilities. The project owner proposes to modify the project as follows:

- Define a new point of electrical interconnection via an approximately 1,320-foot, 161-kV transmission line to the Western Area Power Administration's Blythe substation located southeast of the project site via an existing transmission line located in the SCE Buck Boulevard substation.
- Replace the two Siemens SGT6-5000F combustion turbines with a single, more efficient GE Frame 7HA.02 combustion turbine.
- Replace the Siemens STG with a more efficient single-shaft GE D652 STG.
- Increase the size of the auxiliary boiler to support GE's rapid response fast start capability.
- Decrease the size of cooling tower from an 11-cell to a 10-cell tower in response to the reduced heat rejection requirements.
- Decrease the size of the emergency diesel fire pump engine.

A comprehensive project description can be found in Section 2, Project Description.

The project design will incorporate air pollution emission controls designed to meet expected Mojave Desert Air Quality Management District (MDAQMD or District) best available control technology (BACT) determinations. These controls will include dry low-NOx combustors in the CTG to limit NOx production, SCR with aqueous ammonia for additional NOx reduction in the HRSG, and an oxidation catalyst to control CO and toxic air contaminant (TAC) emissions. Fuels to be used will be pipeline-specification natural gas in the turbine/HRSG and auxiliary boiler, and California low sulfur diesel fuel in the fire pump engine. Low NOx burners will be incorporated into the HRSG duct burners and auxiliary boiler. The cooling tower will be equipped with high-efficiency drift eliminators. Based upon the new project design, the project will result in a net decrease in annual emissions of all pollutants compared with the currently licensed configuration.

At the same time, the adjacent operating BEP is proposing to reduce the allowable PM_{10} emissions from its existing gas turbines to 6.2 pounds per hour per turbine and 56.9 tons per year (facility total) from the current limits of 11.5 pounds per hour and 97 tons per year. BEP will also reduce allowable annual SO_2 emissions from 24 to 12 tons per year by limiting the annual average sulfur content of the natural gas fuel.

Because BEP and SEP are part of the same stationary source for District permitting regulations, the air permit application to the District addresses both of these changes. However, because the two plants have separate licenses, a separate PTA is being submitted for the PM_{10} and SO_2 emissions reduction at BEP. Nevertheless, the analysis in this PTA incorporates the proposed reductions in emissions at BEP in the ambient air quality impact assessment and the evaluation of cumulative impacts and mitigation.

3.1.1 Project Description

3.1.1.1 Current Site and Facilities

The project is currently licensed as a nominally rated 569-MW combined cycle facility with a maximum output of 587 MW. The project is located within the City of Blythe, approximately 5 miles west of the center of the city. SEP will be located on a 76-acre site immediately adjacent to the existing, operational BEP. Figure 2-1 shows the general location of the project.

When BEP II was originally permitted by the MDAQMD, the project was under separate ownership from BEP. As a result, although both BEP and BEP II are located on contiguous property, they were permitted as separate stationary sources. Since both BEP and BEP II are now under common control (the holding companies for both plants are owned by AltaGas Power Holdings (U.S.) Inc. (APHUS), the two facilities are now considered to be a single stationary source under District and federal air permitting regulations. The regulatory implications of the single stationary source designation are discussed further in the regulatory setting and LORS compliance sections, below.

3.1.1.2 Geography and Topography

SEP is located approximately 5 miles west of downtown Blythe at the edge of the Palo Verde Mesa. The project site is at an elevation of approximately 350 feet above sea level. City zoning designations for lands within 1 mile of the power plant site are Agriculture (A) to the east, and Service Industrial (I-S) to the south between I-10 and Hobsonway (see Figure 2-1). The nearest complex terrain (terrain exceeding stack height) in relation to the project site is located in the San Joaquin Hills, approximately 5.5 miles (or approximately 9 kilometers [km]) to the east and southeast. The nearest Class I areas are the San Gabriel Wilderness and the Cucamonga Wilderness, which are approximately 43 miles (~70 km) north of the project site.

3.1.1.3 Climate and Meteorology

The climate of the Mojave Desert Air Basin is determined by its terrain and geographical location. The MDAQMD encompasses the desert portion of San Bernardino County and a portion of eastern Riverside County commonly known as the Palo Verde Valley. The MDAQMD covers more than 20,000 square miles and is characterized by hot, dry summers and mild winters, with little precipitation.

Consistent with the typical weather of the interior deserts of Southern California, eastern Riverside County in general has an arid climate characterized by very low precipitation, hot summers, and mild winters. Temperature inversions occur, but are not as strong as in coastal areas, where the marine influence is important. The area's climatic conditions are strongly influenced by the large-scale sinking and warming of air in the semi-permanent subtropical high-pressure center over the eastern Pacific. This high-pressure system effectively blocks out most mid-latitude storms, except in winter when the ridge is weaker and farther south. The coastal mountains to the west also have a major influence on climate, serving as a meteorological boundary that effectively removes moisture from the marine air flowing from the Pacific.

The nearest long-term meteorological station with available temperature and precipitation means and extremes is the National Weather Service Blythe Clean Air Act (CAA) Airport station. This weather station is located approximately one mile west of the Project at latitude 33°37'N, longitude 114°43'W. Data collected at this station over a 68-year period (1948-2015) are presented in Table 3.3-1.

Temperatures of 32°F or below rarely occur at this station, but temperatures of 100°F or above are more frequent, occurring from June through September.

Table 3.3-1. Average Temperature and Precipitation Data at Blythe (1948-2015)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Average Max. Temperature (°F)	66.9	71.9	78.5	86.4	95.2	104.5	108.4	106.7	101.5	89.8	75.9	66.6	87.7
Average Min. Temperature (°F)	41.7	45.4	50.2	56.5	64.5	72.7	81.1	80.3	73.1	60.8	48.6	41.3	59.7
Average Total Precipitation (in.)	0.48	0.44	0.35	0.15	0.02	0.02	0.28	0.60	0.34	0.29	0.19	0.41	3.55

Source: Western Regional Climate Center (http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca0927)

Note: °F = degrees Fahrenheit

Eastern Riverside County receives a portion of its annual rainfall from November to March, when the semi-permanent high-pressure system over the eastern Pacific Ocean moves south, allowing storms to move through the area; and another portion of its annual rainfall at the height of summer, when the southwestern monsoon is present. In August, the boundary between the easterly, tropical trade winds and the mid-latitude westerlies sometimes moves north of the project site, and thunderstorms, sometimes even mesoscale convective complexes of thunderstorms, can be present in the vicinity. The average annual precipitation at the project site is about 3.6 inches. Monthly mean precipitation at Blythe ranges from 0.60 inches in August to 0.02 inches in May and June. Relative humidity levels are generally low. In the summer, relative humidity averages 20 to 40 percent in the early morning and 10 to 30 percent in the afternoon. In winter, relative humidity averages 30 to 50 percent in the early morning and 10 to 30 percent in the afternoon.

Local wind circulations are channeled north-south by the presence of the Colorado River Valley. Winds are typically of light to moderate strength from either the northwest or the southwest, and channeled by the river valley. Composite annual and quarterly wind roses are shown in Figures 3.1-1 through 3.1-5. Individual annual and quarterly wind roses and quarterly wind frequency distributions for the project area are provided in Appendix 3.1A.

3.1.2 Background Air Quality

The U.S. Environmental Protection Agency (EPA) has established national ambient air quality standards (NAAQS) for the following seven pollutants, termed criteria pollutants: ozone, nitrogen dioxide (NO_2), CO, sulfur dioxide (SO_2), particulate matter with aerodynamic diameter less than or equal to 10 microns (PM_{10}), particulate matter with aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$), and airborne lead. The federal CAA requires EPA to designate areas as attainment or nonattainment with respect to each criteria pollutant, depending on whether the areas meet the NAAQS. An area that is designated nonattainment means the area is not meeting the NAAQS and is subject to planning requirements to attain the standard.

In addition to the seven pollutants listed above, the California Air Resources Board (ARB) has established state standards for visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. Similar to EPA, ARB designates areas in California as attainment or nonattainment with respect to the California ambient air quality standards (CAAQS). The state standards were designed to protect the most sensitive members of the population, such as children, the elderly, and people who suffer from lung or heart diseases.

Both state and federal air quality standards are based on two variables: maximum concentration and an averaging time over which the concentration will be measured. Maximum concentrations were based on levels that may have an adverse effect on human health. The averaging times were based on whether the damage caused by the pollutant will occur during exposures to a high concentration for a short time (for example, 1 hour), or to a relatively lower average concentration over a longer period (8 hours, 24 hours, or 1 month). For some pollutants, there is more than one air quality standard, reflecting both short-term and long-term effects. Table 3.1-2 presents the NAAQS and CAAQS.

Table 3.1-2. Ambient Air Quality Standards

Pollutant	Averaging Time	California	National
Ozone	1-hour 8 hour	0.09 ppm (180 µg/m^3) 0.07 ppm (137 µg/m^3)	— 0.075 ppm (147 µg/m^3)
CO	1-hour 8-hour	20 ppm (23 mg/m^3) 9.0 ppm (10 mg/m^3)	35 ppm (40 mg/m^3) 9 ppm (10 mg/m^3)
NO_2	1-hour Annual arithmetic mean	0.18 ppm (339 µg/m^3) 0.030 ppm (57 µg/m^3)	100 ppb (188 µg/m^3) (a) 53 ppb (100 µg/m^3)
SO_2 (b)	1-hour 3-hour (secondary standard) 24-hour	0.25 ppm (655 µg/m^3) — 0.04 ppm (105 µg/m^3)	75 ppb (196 µg/m^3) 0.5 ppm (1,300 µg/m^3) —
Respirable Particulate Matter (PM_{10})	24-hour Annual arithmetic mean	50 µg/m^3 20 µg/m^3	150 µg/m^3 —
Fine Particulate Matter ($PM_{2.5}$)	24-hour Annual arithmetic mean	— 12 µg/m^3	35 µg/m^3 (c) 12.0 µg/m^3 (d)
Sulfates	24-hour	25 µg/m^3	—
Lead	30-day average Calendar quarter Rolling 3-month average	1.5 µg/m^3 —	— 1.5 µg/m^3 0.15 µg/m^3
Hydrogen sulfide (H_2S)	1- hour	0.03 ppm (42 µg/m^3)	—
Vinyl chloride	24-hour	0.010 ppm (26 µg/m^3)	—
Visibility-reducing particles	8-hour (10 a.m. to 6 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer because of particles when the relative humidity is less than 70 percent.	—

[a] To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb.

[b] On June 2, 2010, EPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The EPA also revoked both the 24-hour SO_2 standard of 0.14 ppm and the annual primary SO_2 standard of 0.030 ppm, effective August 23, 2010. The secondary SO_2 standard was not revised at that time; however, the secondary standard is undergoing a separate review by EPA.

[c] The 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

[d] 3-year average of the weighted annual mean concentrations.

µg/m3 = microgram(s) per cubic meter
ppm = parts per million
ppb = parts per billion

Source: ARB, 2012a

The federal CAA requires EPA to classify areas in the country as attainment or nonattainment, with respect to each criteria pollutant, depending on whether they meet the national standards. In addition, ARB makes area designations within California for state ambient air quality standards (AAQS). The attainment status at the project site for both the NAAQS and CAAQS are listed in Table 3.1-3.

Table 3.1-3. State and Federal Air Quality Designations for the Project Area

Pollutant	State Designation	Federal Designation
Ozone	Nonattainment (Moderate)	Unclassified/attainment
CO	Unclassified	Unclassified/attainment
NO_2	Attainment	Unclassified/attainment
SO_2	Attainment	Unclassified/attainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Unclassified	Unclassified/attainment
Lead	Attainment	Unclassified/attainment
H_2S and Sulfates	Unclassified	N/A

Source: ARB, 2014.
N/A = not applicable

The MDAQMD is downwind of the Los Angeles basin, and to a lesser extent, is downwind of the San Joaquin Valley. Prevailing winds transport ozone and ozone precursors from both regions into and through the MDAB during the summer ozone season. These transport couplings have been officially recognized by ARB.[6] Local MDAQMD emissions contribute to exceedances of both the NAAQS and State Ambient Air Quality Standards for ozone, but photochemical ozone modeling conducted by the MDAQMD and ARB indicates that the MDAB will be in attainment of both standards without the influence of this transported air pollution from upwind regions.

The project site is a relatively remote rural area that is in attainment for most state and federal standards. Ambient air concentrations of ozone (O_3), NO_2, SO_2, CO, PM_{10}, and $PM_{2.5}$ are recorded at various monitoring stations in Riverside County. The closest ARB-certified monitoring site relative to the project site is located approximately 5 miles east of the project site in Blythe; only ozone is monitored at that location. The immediate area surrounding the project site (within 1.5 to 2 miles) is an area with sparse population. Further out, areas to the north, northwest, west, and southwest are all vacant with very sparse population. However, there are suburban areas with moderate residential areas more than 2 miles to the east (Blythe). The monitoring stations were generally positioned to represent area-wide ambient conditions rather than the localized impacts of any particular emission source or group of sources. In rural areas of the county, pollutant concentrations are not expected to vary dramatically from one location to the next, because the emission sources are few and widely distributed. Therefore, data from a single station are used to characterize air quality for each pollutant in the project area.

Ambient air quality monitoring data for ozone, PM_{10}, $PM_{2.5}$, CO, NO_2, and SO_2 were compared to the most stringent applicable standards for the years 2009 through 2014 at the most representative monitoring stations for each pollutant. Ozone data are from the Blythe-445 West Murphy Street monitoring station; PM_{10}, $PM_{2.5}$, NO_2, and CO data are from the Palm Springs Fire Station monitoring station; and SO_2 data are from the Riverside-Rubidoux monitoring station.[7] Airborne lead levels are

[6] In the publication "Ozone Transport: 2001 Review," (ARB 2001), ARB identifies the South Coast Air Basin as having an overwhelming and significant impact on the Mojave Desert Air Basin (which includes the Mojave Desert) and the San Joaquin Valley as having an overwhelming impact on the MDAB.

[7] The project owner had originally proposed to use SO_2 data from the Victorville-14306 Park Avenue monitoring station to represent background concentrations in the project area. However, according to ARB's "Recommended Area Designations for the 2010 Federal Sulfur Dioxide (SO2) Standard" staff report (June 2011; Appendix 1), the Victorville monitoring station is located near one of the Mojave Desert

taken from the San Bernardino-24302 4th Street monitoring station. The locations of these monitoring stations relative to the project site are shown in Figure 3.1-6.

The ambient air quality data are based on data published by ARB (ADAM Web site) and EPA (AIRS Web site). The maximum ambient background concentrations will be combined with the modeled concentrations and used for comparison to the AAQS.[8]

3.1.2.1 Nitrogen Dioxide

NO_2 is formed primarily from reactions in the atmosphere between NO (nitric oxide) and oxygen (O_2) or ozone. NO is formed during high-temperature combustion processes, when the nitrogen and O_2 in the combustion air combine. Although NO is much less harmful than NO_2, it can be converted to NO_2 in the atmosphere within a matter of hours, or even minutes, under certain conditions. The control of NO and NO_2 emissions is also important because of the role of both compounds in the atmospheric formation of ozone.

Table 3.1-4 shows NO_2 levels recorded at the Palm Springs station for the years 2009 through 2014. The Mojave Desert air basin is classified as an attainment area with respect to state ambient standards for NO_2 and an unclassified/attainment area with respect to national ambient standards for NO_2. During the period from 2009 to 2014, there were no violations of the CAAQS 1-hour standard (0.18 ppm) at any monitoring station in Riverside County. The highest 1-hour concentration recorded at the Palm Springs Fire Station monitoring station during the years 2009 to 2014 was 0.052 ppm in 2013. The federal 1-hour NO_2 standard is 0.100 ppm; to attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within Mojave Desert air basin must not exceed 0.100 ppm. Table 3.1-4 shows that there were no violations of the 1-hour or annual NAAQS or CAAQS at the Palm Springs Fire Station monitoring station during this period.

Table 3.1-4. Nitrogen Dioxide Levels at Palm Springs (ppm)

Palm Springs Fire Station Monitoring Station, Riverside County	2009	2010	2011	2012	2013	2014
Maximum 1-hour Average	0.048	0.046	0.044	0.045	0.052	0.046
98th Percentile 1-hour Average	0.039	0.039	0.039	0.039	0.039	0.041
Annual Average	0.008	0.008	0.008	0.007	0.007	0.007
Days Over State Standard (0.18 ppm, 1-hour)	0	0	0	0	0	0
Days Over Federal Standard (0.100 ppm, 1-hour) (a)	0	0	0	0	0	0

Sources: ARB ADAM Website (www.arb.ca.gov/adam/welcome.html).

[a] To attain the federal 1-hour average NO_2 standard of 0.100 ppm, the 3-year average of the 98th percentile of the daily maximum 1-hour average values at each monitor must not exceed 100 ppb.

3.1.2.2 Ozone

Ozone is an end-product of complex reactions between VOC and NOx in the presence of ultraviolet solar radiation. VOC and NOx emissions from vehicles and stationary sources, combined with daytime wind flow patterns, mountain barriers, temperature inversions, and intense sunlight, generally result in the highest O_3 concentrations. The entire Mojave Desert air basin is classified as a nonattainment area with respect to state ambient standards for ozone, and the project location within the air basin is an unclassified/attainment area with respect to national ambient standards for ozone. Table 3.1-5 shows

facilities that has SOx emissions in excess of 100 tons per year and is sited to capture high SO_2 concentrations. Therefore, SO_2 concentrations monitored at Victorville are not considered to be representative of concentrations in the Blythe area.

[8] Except for 1-hour average NO_2 and SO_2, and 24-hour average PM_{10}, for which the standards are statistically based. See Table 3.1-2.

the measured ozone levels at the Blythe monitoring station during the period from 2009 through 2014. The 1-hour ozone CAAQS of 0.09 ppm was not exceeded during this period.

The federal 8-hour ozone NAAQS requires that the 3-year average of the fourth-highest values for individual years be maintained at or below 0.075 ppm. Therefore, the number of days in each year with maximum 8-hour concentrations above the standard in Table 3.1-5 does not equate to the number of violations.

Table 3.1-5. Ozone Levels at Blythe (ppm)

Blythe Station, Riverside County	2009	2010	2011	2012	2013	2014
Maximum 1-hour Average	0.072	0.072	0.073	0.084	0.065	0.093
Number of Days Exceeding California 1-hour Standard (0.09 ppm)	0	0	0	0	0	0
Number of Days Exceeding Old National 1-hour Standard (0.12 ppm)[a]	0	0	0	0	0	0
Maximum 8-hour Average	0.066	0.068	0.068	0.077	0.061	0.084
Fourth Highest 8-hour Average	0.059	0.065	0.066	0.075	0.057	0.078
Number of Days Exceeding California 8-hour Standard (0.07 ppm)	0	0	0	12	0	16
Number of Days Exceeding National 8-hour Standard (0.075 ppm)[b]	0	0	0	2	0	8

Source: ARB ADAM Website (www.arb.ca.gov/adam/welcome.html).

[a] EPA revoked the 1-hour ozone standard in all areas in 1997, although some areas have continued obligations under that standard ("anti-backsliding").

[b] To attain this standard, the 3-year average of the fourth-highest maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm.

3.1.2.3 Sulfur Dioxide

SO_2 is produced by the combustion of any sulfur-containing fuel. It is also emitted by chemical plants that treat or refine sulfur or sulfur-containing chemicals. Natural gas contains nearly negligible sulfur, whereas fuel oils may contain much larger amounts. Because of the complexity of the chemical reactions that convert SO_2 to other compounds (such as sulfates), peak concentrations of SO_2 occur at different times of the year in different parts of California, depending on local fuel characteristics, weather, and topography. The Mojave Desert air basin is considered to be in attainment with respect to the state air quality standard and unclassified with respect to the federal air quality standard for SO_2.

Table 3.1-6 shows the available data on maximum 1-hour, 3-hour, 24-hour, and annual average SO_2 levels recorded at the Riverside-Rubidoux station during the period from 2009 to 2014. As indicated by this table, the maximum measured 1-hour average SO_2 levels comply with the NAAQS (75 ppb) and CAAQS (0.25 ppm); the maximum 3-hour average SO_2 levels comply with the NAAQS (0.5 ppm); and the maximum 24-hour values comply with the NAAQS and CAAQS of 0.14 ppm and 0.04 ppm, respectively. The table also demonstrates compliance with the annual SO_2 NAAQS of 0.03 ppm. Note that the 24-hour and annual NAAQS for SO_2 have been superseded by the 1-hour NAAQS, which became effective on August 23, 2010.

Table 3.1-6. Sulfur Dioxide Levels at Rubidoux (ppm)

Rubidoux Station, Riverside County	2009	2010	2011	2012	2013	2014
Highest 1-hour average	0.011	0.018	0.008	0.004	0.009	0.006
99th percentile 1-hour average	0.006	0.010	0.004	0.002	0.005	0.004
Highest 3-hour average	--	--	0.003	0.002	0.009	0.003
Highest 24-hour average	0.003	0.005	0.001	0.001	0.001	0.001
Annual Average	0.001	0.001	0.000	-- (b)	-- (b)	-- (b)
Days Over 1-hour State Standard (0.25 ppm)	0	0	0	0	0	0
Days Over 1-hour Federal Standard (75 ppb)[a]	0	0	0	0	0	0
Days Over 24-hour State Standard (0.04 ppm)	0	0	0	0	0	0
Days Over 3-hour Federal Standard (0.5 ppm)	0	0	0	0	0	0

Sources: ARB ADAM Website (www.arb.ca.gov/adam/welcome.html); EPA AirData Website (http://www.epa.gov/air/data/index.html)

[a] To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb.

[b] There were insufficient (or no) data available to determine the value.

NA = not applicable

3.1.2.4 Carbon Monoxide

Carbon monoxide is a product of incomplete combustion and is emitted principally from automobiles and other mobile sources of pollution. It is also a product of combustion from stationary sources (both industrial and residential) burning fuels. Peak CO levels occur typically during winter months as a result of a combination of higher emission rates and stagnant weather conditions.

Table 3.1-7 shows the available data on maximum 1-hour and 8-hour average CO levels recorded at the Palm Springs Fire Station monitoring station during the period from 2009 to 2014. As indicated by this table, the maximum measured 1-hour average CO levels comply with the NAAQS and CAAQS (35.0 ppm and 20.0 ppm, respectively) and the maximum 8-hour values comply with the NAAQS and CAAQS of 9.0 ppm. The highest individual 1-hour and 8-hour CO concentrations at this station during the period from 2009 to 2014 were 3.2 ppm and 1.5 ppm, respectively, both recorded in 2013. The project location within the Mojave Desert air basin is an unclassified area with respect to the state CO ambient standard, and the entire Mojave Desert air basin is an unclassified/attainment area with regards to the federal CO standards.

Table 3.1-7. Carbon Monoxide Levels at Palm Springs (ppm)

Palm Springs Fire Station Monitoring Station, Riverside County	2009	2010	2011	2012	2013	2014
Maximum 1-hour Average[a]	2.3	1.6	3.0	0.9	3.2	2.2
Maximum 8-hour Average	0.67	0.56	0.64	0.45	1.5	0.9
Days Over the 8-hour California Standard (9 ppm)	0	0	0	0	0	0
Days Over the 8-hour Federal Standard (9 ppm)	0	0	0	0	0	0

Sources: ARB ADAM Website (www.arb.ca.gov/adam/welcome.html); EPA AirData Website (http://www.epa.gov/airdata/)

[a] Max 1-hour Averages and 2013/2014 Max 8-hour Average obtained from http://www.epa.gov/airdata/, "Monitor Values" function. 2009-2012 8-hour Averages obtained from "Highest 4 Daily Maximum 8-Hour Carbon Monoxide Averages" on ARB ADAM Website. (www.arb.ca.gov/adam/welcome.html)

3.1.2.5 Respirable Particulate Matter (PM_{10})

Particulates in the air are caused by a combination of wind-blown fugitive dust; particles emitted from combustion sources and manufacturing processes; sea salts; and organic, sulfate, and nitrate aerosols formed in the air from emitted hydrocarbons, sulfur oxides, and NOx, respectively. In 1984, ARB adopted standards for PM_{10} and phased out the total suspended particulate (TSP) standards that had been in effect previously. PM_{10} standards were substituted for TSP standards because PM_{10} corresponds to the size range of particulates that can be inhaled into the lungs (respired), and therefore is a better measure to use in assessing potential health effects. In 1987, USEPA also replaced national TSP standards with PM_{10} standards.

Table 3.1-8 shows the maximum PM_{10} levels recorded at the Palm Springs Fire Station monitoring station during the period from 2009 through 2014 and the arithmetic annual average concentrations for the same period. (The arithmetic annual average is simply the arithmetic mean of the daily observations.) PM_{10} is monitored according to different protocols for evaluating compliance with the state and federal standards for this pollutant. Specifically, California uses a gravimetric or beta attenuation method, whereas compliance with federal standards is evaluated based on an inertial separation and gravimetric analysis. This accounts for the differing 24-hour concentrations listed in Table 3.1-8 that represent data obtained by means of the state and federal samplers.

Table 3.1-8. Particulate Matter (PM_{10}) Levels at Palm Springs ($\mu g/m^3$)

Palm Springs Fire Station Monitoring Station, Riverside County	2009	2010	2011	2012	2013	2014
Maximum 24-hour Average (federal monitors) [a]	116	144	85	117	111	114
Maximum 24-hour Average (state monitors)	133.0	37.0	41.0	37.0	127.0	56.0
California Annual Average[b]	--	18.3	18.1	16.1	22.1	--
Estimated Number of Days Exceeding Federal Standard (150 $\mu g/m^3$)	-- [c]	0	2	0	1	1.1
Estimated Number of Days Exceeding State Standard (50 $\mu g/m^3$)	-- [c]	0	0	0	13.1	--

Source: Federal data from http://www.epa.gov/airdata/; state data from ARB ADAM Website (www.arb.ca.gov/adam/welcome.html).

[a] Excludes exceptional events.

[b] On December 17, 2006, the annual PM_{10} federal standard (50 $\mu g/m^3$) was revoked.

[c] There were insufficient (or no) data available to determine the value.

$\mu g/m^3$ = micrograms per cubic meter

PM_{10} = particulate matter less than 10 microns in diameter

At the Palm Springs Fire Station monitoring station, the maximum 24-hour PM_{10} levels exceed the CAAQS state standard of 50 micrograms per cubic meter ($\mu g/m^3$) a number of times per year. The maximum daily concentration[9] recorded during the analysis period was 133 $\mu g/m^3$ (state samplers) in 2009. The maximum annual average concentration recorded at Palm Springs was 22.1 $\mu g/m^3$ in 2013, which is above the state standard of 20 $\mu g/m^3$. The federal annual PM_{10} standard was revoked by the EPA in 2006 because of a lack of evidence linking health problems to long-term exposure to coarse particle pollution. The attainment status of the project location within Riverside County is "unclassified" with respect to the federal PM_{10} standard, and nonattainment with respect to the state PM_{10} standards.

[9] Excluding approved exceptional events.

3.1.2.6 Fine Particulates ($PM_{2.5}$)

Fine particulates result from fuel combustion in motor vehicles and industrial processes, residential and agricultural burning, and atmospheric reactions involving NOx, SOx, and organics. Fine particulates are referred to as $PM_{2.5}$ and have a diameter equal to or less than 2.5 microns. In 1997, EPA established annual and 24-hour NAAQS for $PM_{2.5}$ for the first time. The most recent revision to the standard regulating the 3-year average of the 98th percentile of 24-hour $PM_{2.5}$ concentrations (35 $\mu g/m^3$) became effective on December 17, 2006. In December 2012, EPA lowered the annual primary $PM_{2.5}$ standard from 15.0 to 12.0 $\mu g/m^3$ and established a secondary fine particle standard of 15.0 $\mu g/m^3$. The $PM_{2.5}$ data in Table 3.1-9 show that the national 24-hour average NAAQS of 35 $\mu g/m^3$ was not exceeded from 2009 to 2014. The maximum recorded 24-hour average 98th percentile value was 15 $\mu g/m^3$ in 2009. The annual $PM_{2.5}$ data are also presented in this table. The maximum annual arithmetic mean was 6.6 $\mu g/m^3$, recorded in 2009, which is below the primary national and state standard of 12 $\mu g/m^3$. The project location within Riverside County is in attainment with regard to the federal $PM_{2.5}$ standards and is unclassified/attainment with regard to the state $PM_{2.5}$ standard.

Table 3.1-9. Particulate Matter ($PM_{2.5}$) Levels at Palm Springs ($\mu g/m^3$)

Palm Springs Fire Station Monitoring Station, Riverside County	2009	2010	2011	2012	2013	2014
Maximum 24-hr Average 98th Percentile[a]	14.6	12.6	12.5	13.7	13.8	13.2
Annual Average	6.6	5.9	6.0	6.4	6.5	--
Estimated Number of Days Exceeding Federal Standard (35 $\mu g/m^3$)	0	0	0	0	0	0

Sources: ARB ADAM Website (www.arb.ca.gov/adam/welcome.html).

[a] EPA lowered the 24-hour standard from 65 $\mu g/m^3$ to 35 $\mu g/m^3$ on December 17, 2006. Compliance with this standard is based on the 3-year average of the 98th percentile daily concentrations.

$\mu g/m^3$ = micrograms per cubic meter

$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter

3.1.2.7 Airborne Lead (Pb)

Lead pollution has historically been emitted predominantly from the combustion of fuels; however, legislation in the early 1970s required a gradual reduction of the lead content of gasoline. Beginning with the introduction of unleaded gasoline in 1975, lead levels have been dramatically reduced throughout the U.S., including California, and violations of the ambient standards for this pollutant have been virtually eliminated.

On October 15, 2008, EPA revised the federal ambient air quality standard for lead, lowering it from 1.5 $\mu g/m^3$ to 0.15 $\mu g/m^3$ for both the primary and the secondary standard. EPA determined that numerous health studies are now available that demonstrate health effects at much lower levels of lead than previously thought. EPA subsequently published the final rule in the Federal Register on November 12, 2008. This is the first time that the federal lead standard has been revised since it was first issued in 1978.

In addition to revising the level of the standard, EPA changed the averaging time from a quarterly average to a rolling three-month average. The level of the standard is “not to be exceeded” and is evaluated over a three-year period. Lead levels are measured as lead in total suspended particulate (TSP). The revised lead standard also contains new monitoring requirements.

Ambient lead levels are monitored in San Bernardino. Table 3.1-10 lists the federal air quality standard for airborne lead and the levels reported in San Bernardino between 2009 and 2014. Maximum quarterly levels are not reported on EPA’s website; because the maximum 24-hour averages must be

higher than the quarterly average, the data show that lead levels are actually well below the federal standard. The Mojave Desert air basin is in attainment with respect to the state ambient standard for lead; there is no area designation information for the federal standard.

Table 3.1-10. Airborne Lead (Pb) Levels at San Bernardino (μg/m^3)

San Bernardino Monitoring Station, San Bernardino County	2009	2010	2011	2012	2013	2014
Maximum 24-hour Average	0.020	0.020	0.012	0.016	0.018	0.02
Number of Days Exceeding Federal Standard (1.5 μg/m^3)	0	0	0	0	0	0

Sources: EPA AirData Website (http://www.epa.gov/airdata/)

μg/m^3 = micrograms per cubic meter

3.1.2.8 Particulate Sulfates

Sulfate compounds found in the lower atmosphere consist of both primary and secondary particles. Primary sulfate particles are directly emitted from open pit mines, dry lakebeds, and desert soils. Fuel combustion is another source of sulfates, both primary and secondary. Secondary sulfate particles are produced when oxides of sulfur (SOx) emissions are transformed into particles through physical and chemical processes in the atmosphere. Particles can be transported long distances. The Mojave Desert air basin is in attainment with respect to the state ambient standard for sulfates; there is no federal standard.

3.1.2.9 Other State-Designated Criteria Pollutants

Along with sulfates, California has designated hydrogen sulfide and visibility-reducing particles as criteria pollutants, in addition to the federal criteria pollutants. The Mojave Desert air basin remains unclassified for both pollutants.

3.1.2.10 Existing Air Quality

As outlined in 40 CFR 51, Appendix W, Section 9.2, the background data used to evaluate the potential air quality impacts need not be collected on a project site, as long as the data are representative of the air quality in the subject area. The following three criteria were used for determining whether the background ambient air quality data are representative: (1) location, (2) data quality, and (3) data currentness. These criteria are defined and applied to the project as follows:

- **Location:** The measured data must be representative of the areas where the maximum concentration occurs for the proposed stationary source, existing sources, and a combination of the proposed and existing sources.

  The nearest monitoring station to the project site is Blythe station. This site is located approximately 5 miles from the project site. However, only ozone is monitored at this site.

  Because the Blythe monitoring station does not collect data on NO_2, SO_2, CO, PM_{10} and $PM_{2.5}$ ambient concentrations, other monitoring sites with similar site characteristics were used to provide representative background concentrations for these pollutants. The Palm Springs monitoring station (PM_{10}, $PM_{2.5}$, NO_2, and CO) is located approximately 110 miles west of the project site. The Rubidoux monitoring station (SO_2) is located approximately 170 miles west northwest of the project site. In general, the Palm Springs and Rubidoux monitoring stations are considered to provide conservative estimates of the worst-case background concentrations because of their proximity to the South Coast Air Basin (Metropolitan Los Angeles). Monitoring stations located in Imperial County were not considered to be representative of conditions at the project site because of the predominant air flow patterns and air pollution from Mexico that creates a significant local influence for the worst-case pollutant concentration readings at some locations in Imperial County.

- **Data quality:** Data must be collected and equipment must be operated in accordance with the requirements of 40 CFR Part 58, Appendices A and B, and PSD monitoring guidance.

  The ARB and EPA ambient air quality data summaries were used as the primary sources of data. Therefore, the data at the monitoring stations listed in Table 3.1-11 meet the data quality requirements of 40 CFR Part 58, Appendices A and B, and PSD monitoring guidance.

- **Data currentness:** The data are current if they have been collected within the preceding 3 years and are representative of existing conditions.

  The maximum ambient background concentrations from the period 2012 through 2014 were combined with the modeled concentrations and used for comparison to the ambient air quality standards. Therefore, the data presented above represent the 3 most recent years of data available.

Based on the criteria presented above, the three most recent years of background NO_2, CO, PM_{10} and $PM_{2.5}$ data from the Palm Springs monitoring station and the three most recent years of background SO_2 from the Rubidoux monitoring station have been used to represent existing background concentrations in the project area. As discussed further below, the existing BEP generating units are shown as background sources in the air quality impact assessment.

A summary of the monitored background concentrations for 2012 through 2014 are presented in Table 3.1-11.

Table 3.1-11. Background Air Concentrations (2012–2014)[a]

		Existing Monitored Concentrations, µg/m³			Maximum for the Period, µg/m³
Pollutant	**Averaging Time**	**2012**	**2013**	**2014**	
NO_2 [b]	1-hour (max)	84.6	97.8	86.5	97.8
	1-hour (98th percentile)	73.9	72.9	77.1	77.1
	Annual[d]	13.2	13.2	13.2	13.2
SO_2 [c]	1-hour (max)	10.4	22.9	15.6	22.9
	1-hour (99th percentile)	5.2	13.0	10.4	13.0
	3-hour[e]	5.2	22.6	7.8	22.6
	24-hour	2.6	2.6	2.6	2.6
CO [b]	1-hour	1,125	4,000	2,750	4,000
	8-hour	500	1,667	1,698	1,698
PM_{10} [b]	24-hour	37.0	127.0	56	127.0
	Annual	16.1	22.1	n/a	22.1
$PM_{2.5}$ [b]	24-hour (98th percentile)	13.7	13.8	13.2	13.8
	Annual	6.5	6.5	n/a	6.5

[a] The ARB and EPA ambient air quality data summaries were used as reference.
[b] Data from the Palm Springs monitoring station
[c] Data from the Rubidoux monitoring station
[d] Annual Arithmetic Mean
[e] Federal secondary standard

n/a: data not available

3.1.2.11 Existing Emissions

The 76-acre SEP site is currently vacant, and consists of open desert lands. Other than naturally occurring emissions, including fugitive dust, there are no emitting activities on the project site. The permitted BEP II facility has not been constructed.

The adjacent BEP project is owned and operated by Blythe Energy Inc., a wholly owned subsidiary of APHUS. SEP is owned by AltaGas Sonoran Energy Inc., which is also a wholly owned subsidiary of APHUS. Because the two projects are contiguous and have common ownership and control, they are treated as a single facility under local, state, and federal air permitting regulations. The facilities have been licensed separately by the CEC and will continue to be operated by separate subsidiaries, so for purposes of the CEC license the proposed amendment will affect only SEP.[10] However, for CEQA purposes and at the request of the District, BEP has been shown as a background emissions source in the ambient air quality impact assessments prepared for the proposed project.

The existing BEP includes two Siemens V84 combined cycle gas turbines, a mechanical-draft wet cooling tower, a chiller cooling tower, a diesel-powered fire water pump, and ancillary facilities. Some existing facilities will be shared between the two plants, as follows:

- Well water supply
- Control room (and staff)
- Wastewater disposal
- Stormwater management
- Gas line

The existing BEP currently operates on an as-needed basis, with an annual capacity factor of about 40 percent. Table 3.1-12 summarizes the allowable emissions (potential to emit) for the existing BEP and the average actual emissions for the most recent 3-year period. The potential to emit for the existing BEP is shown in more detail in Appendix 3.1B, Table 3.1B-11.

Table 3.1-12. Existing BEP: PTE and Actual Emissions, tons per year

	NOx	SO_2	CO	VOC	$PM_{10}/PM_{2.5}$[a]
Allowable Emissions (Potential to Emit)	97	24	97	24	56.9
Reported Emissions, 2012	60.6	1.2	40.2	1.4	45.9
Reported Emissions, 2013	61.8	1.2	44.3	1.4	46.2
Reported Emissions, 2014	57.5	1.1	28.8	1.3	42.2

[a] PM PTE shown reflects new PM limit that is being proposed concurrently with the SEP project modifications. The reported emissions are based on an emission factor of 10 lb/hr per unit; the new limit will be 6.2 lb/hr per unit so historical emissions calculated on a basis consistent with the proposed PTE will be about 60% of the values shown. All reported emissions and emission limits contain emissions from the cooling towers.

3.1.3 Laws, Ordinances, Regulations, and Standards

3.1.3.1 Federal LORS

The US EPA has responsibility for enforcing, on a national basis, the requirements of many of the country's environmental and hazardous waste laws. California is under the jurisdiction of EPA Region 9, which has its offices in San Francisco. Region 9 is responsible for the local administration of EPA programs for California, Arizona, Nevada, Hawaii, and certain Pacific trust territories. EPA's activities relative to the California air pollution control program focus principally on reviewing California's submittals for the State Implementation Plan (SIP). The SIP is required by the federal Clean Air Act to

[10] As discussed earlier, BEP's project owner is applying for contemporaneous emissions reductions as part of the District application for the modification to SEP; however, the PM_{10} and SO_2 reductions at BEP are being handled separately by the CEC, as an amendment to the BEP license.

demonstrate how all areas of the state will meet the national ambient air quality standards by the federally specified deadlines (42 USC §7409, 7411).

The federal Clean Air Act, as most recently amended in 1990, provides EPA with the legal authority to regulate air pollution from stationary sources such as SEP. EPA has promulgated the following stationary source regulatory programs to implement the requirements of the federal Clean Air Act:

- Prevention of Significant Deterioration (PSD)
- Nonattainment New Source Review (NANSR)
- Title IV: Acid Rain Program
- Title V: Operating Permits
- National Standards of Performance for New Stationary Sources (NSPS)
- National Emission Standards for Hazardous Air Pollutants (NESHAPs)

Prevention of Significant Deterioration Program.

Authority: Clean Air Act §160-169A, 42 USC §7470-7491; 40 CFR Parts 51 and 52

Requirements: Requires preconstruction review and permitting of new or modified major stationary sources of air pollution to prevent significant deterioration of ambient air quality. PSD applies to pollutants for which ambient concentrations do not exceed the corresponding NAAQS (i.e., attainment pollutants). For the MDAQMD, the PSD pollutants are ozone (for which VOC is a surrogate), SOx, NOx, CO, PM_{10}, $PM_{2.5}$, and greenhouse gases (GHGs). The PSD program allows new sources of air pollution to be constructed, or existing sources to be modified, while preserving the existing ambient air quality levels, protecting public health and welfare, and protecting Class I areas (e.g., national parks and wilderness areas).

The PSD requirements apply to any project that is a new major stationary source or a major modification to an existing major stationary source. A major source is a listed facility (one of 28 PSD source categories listed in the federal Clean Air Act) that emits at least 100 tons per year (tpy), or any other facility that emits at least 250 tpy.[11]

A major modification is any project at a major stationary source that results in a significant increase in emissions of any PSD pollutant.

A significant increase for a PSD pollutant is an increase above the significant emission rate for that pollutant (Table 3.1-13). It is important to note that, once PSD is triggered by any pollutant, PSD requirements apply to any PSD pollutant with an emission increase above the significance level, regardless of whether the facility is major for that pollutant.

Table 3.1-13. PSD Significant Emission Thresholds

Pollutant	PSD Significant Emission Threshold (tpy)[a]
SO_2	40
PM_{10}	15
$PM_{2.5}$	10

[11] Effective July 1, 2011, under EPA's Tailoring Rule [75 FR 31514, June 3, 2010] a stationary source that emits more than 100,000 tpy of GHGs was also considered to be a major stationary source. However, as a result of a 2014 Supreme Court decision (Utility Air Regulatory Group v. EPA (No. 12-1146)), EPA may not treat GHGs as an air pollutant for purposes of determining whether a source is a major source required to obtain a PSD permit. The Court also said that PSD permits that are otherwise required (based on emissions of other pollutants) may continue to require limitations on GHG emissions based on the application of Best Available Control Technology (BACT). EPA will amend the GHG portion of the PSD regulations to conform to the Supreme Court decision once the lower courts have acted.

Table 3.1-13. PSD Significant Emission Thresholds

Pollutant	PSD Significant Emission Threshold (tpy)[a]
NOx	40
CO	100
Lead	0.6
GHGs	75,000[b]

[a] 40 CFR 52.21 (b)(1)(23).

[b] Based on the Supreme Court's June 23, 2014, opinion on the GHG Tailoring Rule (Utility Air Regulatory Group v. EPA, No. 12-1146), the project will not be subject to PSD review based solely on its GHG emissions. However, the June 16, 2011, version of 40 CFR 52.21 includes the 75,000 tpy CO2e threshold, so that threshold is shown here for completeness.

The principal requirements for the PSD program encompass the following:

- Emissions of pollutants that are subject to PSD review must be controlled using BACT.
- Air quality impacts of the project, in combination with other increment-consuming sources, must not exceed maximum allowable incremental increases.
- Air quality impacts of all sources in the area plus ambient pollutant background levels cannot exceed NAAQS.
- Preconstruction and/or post-construction air quality monitoring may be required.
- The air quality impacts on soils, vegetation, and nearby PSD Class I areas (specific national parks and wilderness areas) must be evaluated.

Best Available Control Technology. BACT must be applied to any new or modified major source to minimize the emissions increase of those pollutants exceeding the PSD emission thresholds. EPA defines BACT as an emissions limitation based on the maximum degree of reduction for each subject pollutant, considering energy, environmental, and economic impacts, that is achievable through the application of available methods, systems, and techniques. BACT must be as stringent as any emission limit required by an applicable NSPS or NESHAP.

Air Quality Impact Analysis. An air quality dispersion analysis must be conducted to evaluate impacts of significant emission increases from new or modified facilities on ambient air quality. PSD source emissions must not cause or contribute to an exceedance of any ambient air quality standard, and the increase in ambient air concentrations must not exceed the allowable increments shown in Table 3.1-14. Once PSD review is triggered for the project, all pollutants with emission increases above the PSD significance thresholds are subject to this requirement.

Table 3.1-14. PSD Increments and Significant Impact Levels

Pollutant	Averaging Time	SILs (µg/m³)[a]	Maximum Allowable Class II Increments[b]
SO_2	Annual	1.0	20
	24-hr	5	91
	3-hr	25	512
	1-hr	7.8[c]	No 1-hr increment

Table 3.1-14. PSD Increments and Significant Impact Levels

Pollutant	Averaging Time	SILs (µg/m³)[a]	Maximum Allowable Class II Increments[b]
PM_{10}	Annual	1.0	17
	24-hr	5	30
$PM_{2.5}$[d]	Annual	0.3	4
	24-hr	1.2	9
NO_2	Annual	1.0	25
	1-hr	7.5[c]	No 1-hr increment
CO	8-hr	500	No CO increments
	1-hr	2,000	

[a] 40 CFR 51.165 (b)(2).

[b] 40 CFR 52.21 (c)

[c] EPA has not yet defined significance impact levels (SILs) for one-hour NO_2 or SO_2 impacts. However, EPA has suggested that, until SILs have been promulgated, values of 4 ppb (7.5 µg/m³) for NO_2 and 3 ppb (7.8 µg/m³) for SO_2 may be used. These values will be used in this analysis wherever a SIL will be used for NO_2 or SO_2.

[d] In January 2013, EPA sought and the U.S. Court of Appeals for the District of Columbia Circuit granted remand and vacatur of these SILs as they apply for purposes of avoiding a cumulative impacts analysis under federal PSD requirements (40 CFR § 51.166(k)(2) and § 52.21(k)(2)). However, EPA has retained these SILs for purposes of demonstrating whether a source locating in an attainment/unclassifiable area will be deemed to cause or contribute to a violation in a downwind nonattainment area. See Sierra Club v. EPA, No. 10-1413 (D.C. Cir. 2013), slip op. 9. Accordingly, application of these SILs for purposes of satisfying the District's requirement to assure that a new or modified facility does not interfere with the attainment or maintenance of an ambient air quality standard (MDAQMD Rule 1300, §A.1.b) may be appropriate.

Air Quality Monitoring. At its discretion, the PSD permit issuer may require preconstruction and/or post-construction ambient air quality monitoring for PSD sources if representative monitoring data are not already available. Preconstruction monitoring data must be gathered over a one-year period to characterize local ambient air quality. Post-construction air quality monitoring data must be collected as deemed necessary by the PSD permit issuer to characterize the impacts of proposed project emissions on ambient air quality.

Protection of Class I Areas. The potential increase in ambient air quality concentrations for attainment pollutants (i.e., NO_2, PM_{10}, or SO_2) within Class I areas closer than approximately 100 km may need to be quantified if the new or modified PSD source were to have a sufficiently large emission increase as evaluated by the Class I area Federal Land Managers. In such a case, a Class I visibility impact analysis will also be performed.

Growth, Visibility, Soils, and Vegetation Impacts. Impairment to visibility, soils, and vegetation resulting from PSD source emissions as well as associated commercial, residential, industrial, and other growth must be analyzed. This analysis shows cumulative impacts to local ambient air quality.

Because the Mojave Desert AQMD PSD program has not received EPA approval, facilities subject to PSD requirements in this district are required to obtain PSD approvals to construct from EPA Region 9. As discussed in more detail below, the proposed project will not be subject to PSD review.

Administering Agency: EPA Region 9.

Nonattainment New Source Review.

Authority: Clean Air Act §171-193, 42 USC §7501 et seq.; 40 CFR Parts 51 and 52

Requirement: Requires preconstruction review and permitting of new or modified major stationary sources of air pollution to allow industrial growth without interfering with the attainment and

maintenance of NAAQS. Nonattainment new source review jurisdiction has been delegated to the MDAQMD for all nonattainment pollutants and is discussed further under local LORS and conformance below.

Administering Agency: MDAQMD, with EPA Region 9 oversight.

Acid Rain Program.

Authority: Clean Air Act §401 (Title IV), 42 USC §7651

Requirement: Requires the monitoring and reporting of emissions of acidic compounds and their precursors. The principal source of these compounds is the combustion of fossil fuels. Therefore, Title IV established national standards to monitor, record, and in some cases limit SO_2 and NOx emissions from electrical power generating facilities. These standards are implemented at the local level with federal oversight.

Administering Agency: MDAQMD, with EPA Region 9 oversight.

Title V Operating Permits Program.

Authority: Clean Air Act §501 (Title V), 42 USC §7661

Requirements: Requires the issuance of operating permits that identify all applicable federal performance, operating, monitoring, recordkeeping, and reporting requirements. Title V applies to major facilities, Phase II acid rain facilities, subject solid waste incinerator facilities, and any facility listed by EPA as requiring a Title V permit. MDAQMD has received delegation authority for this program.

Administering Agency: MDAQMD, with EPA Region 9 oversight.

National Standards of Performance for New Stationary Sources.

Authority: Clean Air Act §111, 42 USC §7411; 40 CFR Part 60

Requirements: Establishes standards of performance to limit the emission of criteria pollutants (air pollutants for which EPA has established NAAQS) from new or modified facilities in specific source categories. These standards are implemented at the local level with federal oversight. The applicability of these regulations depends on the equipment size, process rate, and/or the date of construction, modification, or reconstruction of the affected facility.

Several NSPS will be applicable to the proposed project. The gas turbines will be subject to the requirements of Subpart KKKK, Standards of Performance for Stationary Gas Turbines, which sets limits on NOx and SO_2 emissions from gas turbines. Subpart KKKK limits NOx and SO_2 emissions from new gas turbines based on power output. The limits for gas turbines greater than 850 MMBtu/hr are 15 ppmv @ 15% O_2/0.43 lb per MW-hr for NOx, and 0.90 lb per MW-hr SO_2 for SOx.

The auxiliary boiler will be subject to the requirements of Subpart Dc, Standards of Performance for Industrial, Commercial and Institutional Boilers. Because the boiler will be fired solely on natural gas, the only applicable requirements relate to initial notification and recordkeeping.

NSPS Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, will apply to the new fire pump engine. For the size of engine proposed, the NSPS requires the purchase of engines meeting the EPA engine nonroad certification level of Tier 3 or better depending on the year the engine is manufactured/purchased. This regulation also requires the engine to use ultra-low sulfur content diesel fuel.

On Sept. 20, 2013, the EPA issued a revised proposed NSPS to control GHG emissions from new power plants. The EPA proposed separate standards for natural gas-fired turbines and coal-fired units. The proposed GHG emission limits (40 CFR Part 60 Subpart TTTT) for new natural gas-fired combustion turbines subject to the regulation are 1,000 lb CO_2/MWh (new combustion turbines with a heat input rating greater than 850 MMBtu/hr) and 1,100 lb CO_2/MWh (new combustion turbines with a heat input rating equal to or less than 850 MMBtu/hr). New combustion turbines that supply less than one-third of

their potential electric output (on a three-year rolling average basis) to a utility distribution system are exempt from this regulation. Because the new gas turbine associated with the proposed project will supply more than one-third of its potential electric output to the local utility, the unit may be subject to this regulation if it is adopted.

Administering Agency: MDAQMD, with EPA Region 9 oversight.

National Emission Standards for Hazardous Air Pollutants.

Authority: Clean Air Act §112, 42 USC §7412

Requirements: Establishes national emission standards to limit emissions of hazardous air pollutants (HAPs, or air pollutants identified by EPA as causing or contributing to the adverse health effects of air pollution, but for which NAAQS have not been established) from major sources of HAPs in specific source categories.[12] These standards are implemented at the local level with federal oversight. Only the NESHAPs for gas turbines, which limit formaldehyde emissions from gas turbines, is potentially applicable to the new power plant project.[13] As discussed further below, the gas turbine NESHAP may be applicable to the proposed project because the addition of SEP to BEP will make the combined stationary source a major source of HAPs. However, in 2004, EPA stayed the effectiveness of the NESHAP for new lean premix and diffusion flame gas-fired gas turbines. Therefore, the NESHAP does not apply to the proposed project.

Administering Agency: MDAQMD, with EPA Region 9 oversight.

Compliance Assurance Monitoring (CAM).

Authority: 40 CFR 64 Compliance Assurance Monitoring (CAM)

Requirements: Requires compliance monitoring at emission units at major stationary sources that are required to obtain a Title V permit, and that use control equipment to achieve a specified emission limit. The rule is intended to provide "reasonable assurance" that the control systems are operating properly to maintain compliance with the emission limits. CAM is usually implemented through the Title V permit. The only equipment associated with the proposed project that may be affected by CAM is the oxidation catalyst that will be installed on the new gas turbine (if VOC control is claimed for use of oxidation catalysts).

Administering Agency: MDAQMD, with EPA Region 9 oversight.

3.1.3.2 State LORS

ARB was created in 1968 by the Mulford-Carrell Air Resources Act, through the merger of two other state agencies. ARB's primary responsibilities are to develop, adopt, implement, and enforce the state's motor vehicle pollution control program; to administer and coordinate the state's air pollution research program; to adopt and update, as necessary, the CAAQS; to review the operation of the local air pollution control districts (APCDs); and to review and coordinate preparation of the SIP for achievement of the NAAQS. ARB has implemented the following state or federal stationary source regulatory programs in accordance with the requirements of the federal Clean Air Act and California Health & Safety Code (H&SC):

- State Implementation Plan
- California Clean Air Act
- Toxic Air Contaminant Program
- Airborne Toxic Control Measure for Stationary Compression-Ignition Engines

[12] A major source of HAPs is one that emits more than 10 tons per year (tpy) of any individual HAP, or more than 25 tpy of all HAPs combined.

[13] The auxiliary boiler is not subject to the major source boiler NESHAP (40 CFR 63 Subpart DDDDDD) because it is fueled solely on natural gas. The emergency fire pump engine compiles with the applicable NESHAP (40 CFR 63 Subpart ZZZZ) by complying with 40 CFR 60 Subpart IIII.

- Nuisance Regulation
- Air Toxics "Hot Spots" Act
- CEC and ARB Memorandum of Understanding

State Implementation Plan (SIP).

Authority: Health & Safety Code (H&SC) §39500 et seq.

Requirements: The SIP demonstrates the means by which all areas of the state will attain and maintain NAAQS within the federally mandated deadlines, as required by the federal Clean Air Act. ARB reviews and coordinates preparation of the SIP. Local districts must adopt new rules or revise existing rules to demonstrate that the resulting emission reductions, in conjunction with reductions in mobile source emissions, will result in attainment of the NAAQS. The relevant MDAQMD Rules and Regulations that have been incorporated into the SIP are discussed with the local LORS in Section 3.1.3.3.

Administering Agency: MDAQMD, with ARB and EPA Region 9 oversight.

California Clean Air Act.

Authority: H&SC §40910 – 40930

Requirements: Established in 1989, the California Clean Air Act requires local districts to attain and maintain both national and state ambient air quality standards at the "earliest practicable date." Local districts must prepare air quality plans demonstrating the means by which the ambient air quality standards will be attained and maintained. The relevant components of the MDAQMD Air Quality Plan are discussed with the local LORS.

Administering Agency: MDAQMD, with ARB oversight.

Toxic Air Contaminant Program.

Authority: H&SC §39650 – 39675

Requirements: Adopted in 1983, the Toxic Air Contaminant Identification and Control Act created a two-step process to identify TACs and control their emissions. ARB identifies and prioritizes the pollutants to be considered for identification as TACs. ARB assesses the potential for human exposure to a substance, while the Office of Environmental Health Hazard Assessment evaluates the corresponding health effects. Both agencies collaborate in the preparation of a risk assessment report, which concludes whether a substance poses a significant health risk and should be identified as a TAC. In 1993, the Legislature amended the program to encompass the 187[14] federally identified hazardous air pollutants as TAC. ARB reviews the emission sources of an identified toxic air contaminant and, if necessary, develops air toxics control measures to reduce the emissions.

Administering Agency: ARB

Airborne Toxic Control Measure for Stationary Compression-Ignition Engines.

Authority: Title 17, California Code of Regulations, §93115

Requirements: The purpose of the airborne toxic control measure (ATCM) is to reduce diesel particulate matter (DPM) and criteria pollutant emissions from stationary diesel-fueled compression ignition engines. The ATCM applies to stationary compression-ignition engines with a rating greater than 50 brake horsepower. The ATCM requires the use of ARB-certified diesel fuel or equivalent, and limits emissions from, and operations of, compression ignition engines.

Administering Agency: MDAQMD and ARB

[14] Methyl ethyl ketone was removed from the list on December 19, 2005 (http://www.epa.gov/ttn/atw/pollutants/atwsmod.html, accessed April 9, 2006).

Nuisance Regulation.

Authority: CA Health & Safety Code §41700

Requirements: Provides that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."

Administering Agency: MDAQMD and ARB

Air Toxic "Hot Spots" Act.

Authority: H& SC §44300-44384; 17 CCR §93300-93347

Requirements: Adopted in 1987, the Air Toxics "Hot Spots" Information and Assessment Act supplements the TAC program, by requiring the development of a statewide inventory of air toxics emissions from stationary sources. The program requires affected facilities to prepare (1) an emissions inventory plan that identifies relevant air toxics and sources of air toxics emissions; (2) an emissions inventory report quantifying air toxics emissions; and (3) a health risk assessment, if necessary, to characterize the health risks to the exposed public. Facilities whose air toxics emissions are deemed to pose a significant health risk must issue notices to the exposed population. In 1992, the Legislature amended the program to further require facilities whose air toxics emissions are deemed to pose a significant health risk to implement risk management plans to reduce the associated health risks. This program is implemented at the local level with state oversight.

Administering Agency: MDAQMD and ARB

CEC and ARB Memorandum of Understanding.

Authority: CA Pub. Res. Code §25523(a); 20 CCR §1752, 1752.5, 2300-2309 and Div. 2, Chap. 5, Art. 1, Appendix B, Part (k)

Requirements: Provides for the inclusion of requirements in the CEC's decision on an AFC to assure protection of environmental quality; the application is required to contain information concerning air quality protection.

Administering Agency: CEC

California Climate Change Regulatory Program.

Authority: Stats. 2006, Ch. 488 and CA Health & Safety Code § 38500-38599

Requirements: The State of California adopted the Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32) on September 27, 2006, which requires sources within the state to reduce carbon emissions to 1990 levels by the year 2020. Based on this statutory authority, ARB has adopted regulations to limit GHG emissions from electric power plants and other specific source categories through a cap-and-trade program. In addition, ARB has adopted regulations requiring the calculation and reporting of GHG emissions from subject facilities. Pursuant to a 2005 Executive Order, additional reductions are required by 2050. In April 2015, Governor Brown issued an Executive Order establishing a new interim statewide GHG reduction target of 40 percent below 1990 levels by 2030 to ensure that the state meets the 2050 goal.

AB 32 does not directly amend other environmental laws, such as the California Environmental Quality Act (CEQA). Instead, it provides for creation of a GHG emissions program that will involve identification of sources, prioritization of sources for regulation based on significance of source contribution to GHG emissions, and eventual regulation of those sources.

Greenhouse gases contain the pollutants described below.

- Carbon dioxide (CO_2) is a naturally occurring gas, as well as a by-product of burning fossil fuels and biomass, land-use changes, and other industrial processes. It is the principal anthropogenic greenhouse gas that affects the Earth's radiative balance.
- Methane (CH_4) is a greenhouse gas with a global warming potential (GWP) most recently estimated at 25 times that of CO2. GWP is a measure of how much a given mass of greenhouse gas is estimated to contribute to global warming and is a relative scale that compares the mass of one greenhouse gas to that same mass of carbon dioxide. CH4 is produced through anaerobic (without O_2) decomposition of waste in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.
- Nitrous oxide (N_2O) is a greenhouse gas with a GWP of 298 times that of CO2. Major sources of nitrous oxide are soil cultivation practices, especially the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning.
- Sulfur hexafluoride (SF_6) is a colorless gas soluble in alcohol and ether, and slightly soluble in water. It is a very powerful greenhouse gas used primarily in electrical transmission and distribution systems, as well as dielectrics in electronics.

The annual GHG emission reports to ARB for subject facilities must show the project's emission rates of greenhouse gases from the stack, cooling towers, fuels and materials handling processes, delivery and storage systems, as well as from all on-site secondary emission sources. The facility will also be required to participate in the cap and trade program.

On January 25, 2007, the PUC and CEC jointly adopted a Greenhouse Gas Emissions Performance Standard (EPS) in an effort to help mitigate climate change. The EPS is a facility-based emissions standard requiring that all new long-term commitments for baseload generation to serve California consumers be with power plants that have emissions no greater than a combined-cycle gas turbine plant. That level is established at 1,100 pounds of CO_2 per MW-hour (or 0.50 MT CO_2 per MW-hour).

Administering Agencies: ARB and CEC.

3.1.3.3 Local LORS

When the state's air pollution statutes were reorganized in the mid-1960s, local districts were required to be established in each county of the state. There are three different types of districts: county, regional, and unified. In addition, special air quality management districts (AQMDs, such as the MDAQMD), with more comprehensive authority over nonvehicular sources, as well as transportation and other regional planning responsibilities, have been established by the Legislature for several regions in California. Local districts have principal responsibility for the following:

- Developing plans for meeting the NAAQS and CAAQS
- Developing control measures for nonvehicular sources of air pollution necessary to achieve and maintain both state and federal air quality standards
- Implementing permit programs established for the construction, modification, and operation of sources of air pollution
- Enforcing air pollution statutes and regulations governing nonvehicular sources
- Developing programs to reduce emissions from indirect sources

Mojave Desert Air Quality Plans.

Authority: H&SC §40914

Requirements: Air quality plans define the proposed strategies, including stationary source and transportation control measures and new source review rules that will be implemented to attain and maintain the state ambient air quality standards. The relevant stationary source control measures and new source review requirements are discussed with MDAQMD Rules and Regulations.

Administering Agency: MDAQMD with EPA Region 9 and ARB oversight.

Mojave Desert Air Quality Management District Rules and Regulations.

Authority: H&SC §4000 et seq., H&SC §40200 et seq., indicated MDAQMD Rules

Requirements: Establishes procedures and standards for issuing permits; establishes standards and limitations on a source-specific basis.

Administering Agency: MDAQMD with EPA Region 9 and ARB oversight.

Authority to Construct.

Regulation II—Permits, Rule 201 (Permit to Construct) specifies that any facility installing nonexempt equipment that causes or controls the emission of air pollutants must first obtain an Authority to Construct from the MDAQMD. Under Regulation XIII Rule 1306 (Electric Energy Generating Facilities) Section (E)(3)(b), the District's Final Determination of Compliance acts as an authority to construct for a power plant upon approval of the project by the CEC.

Review of New or Modified Sources.

Regulation XIII (New Source Review) implements the federal NSR and PSD programs, as well as the New Source Review requirements of the California Clean Air Act. The rule contains the following elements:

- BACT and Lowest Achievable Emission Rates (LAER)
- Emission offsets
- Air quality impact analysis (AQIA)

Best Available Control Technology.

BACT must be applied to any new or modified permit unit that has a potential to emit 25 pounds per day or more of any Nonattainment Air Pollutant. The Nonattainment Air Pollutants are ozone and its precursors NOx and volatile organic compounds (VOC), and PM_{10} and its precursors NOx, SOx, and VOC.

The MDAQMD defines BACT (Rule 1301(K)(2)) for a nonmajor facility as the most stringent emission limitation or control technique that meets one of the following criteria:

- Has been achieved in practice for the category or class of source
- Is any emission limitation or control technique determined to be technologically feasible and cost-effective
- Is contained in any SIP approved by EPA for such emission unit category, unless demonstrated to not be proven in field application, not be technologically feasible, or not be cost-effective

Emission Offsets.

A new or modified facility resulting in facility-wide emission increases above the thresholds shown in Table 3.1-15 must offset emission increases of nonattainment pollutants (and their precursors).

Table 3.1-15. MDAQMD Offset Emission Thresholds

Pollutant	Offset Threshold, tpy
CO	100[a]

Table 3.1-15. MDAQMD Offset Emission Thresholds

Pollutant	Offset Threshold, tpy
Hydrogen Sulfide	10
Lead	0.6
PM_{10}	15
NOx	25
SOx	25
VOC	25

[a] The project is located in a CO attainment area; therefore offsets are not required for CO.

Source: MDAQMD Regulation XIII, Rule 1303 (B)(1)

Toxic Risk Management. Regulation XIII, Rule 1320 (New Source Review for Toxic Air Contaminants) provides a mechanism for evaluating the potential impact of air emissions of TAC (also called noncriteria pollutants) from new, modified, and relocated facilities or permit units in the MDAQMD. The rule imposes more stringent requirements on permit units with higher risks, as shown in Table 3.1-16.

Table 3.1-16. MDAQMD Health Risk Thresholds

Requirement	Risk Threshold	Hazard Index
Utilize TBACT	1×10-6 (residential receptor) 1×10-5 (point of maximum impact)	--
Public Notification	10×10-5	1
Application Denial	100×10-5	10

CEC Review. Regulation XIII, Rule 1306 establishes a procedure for coordinating MDAQMD review of power plant projects with the CEC's AFC and Small Power Plant Exemption (SPPE) processes. Under this rule, the MDAQMD reviews the AFC/SPPE and issues a Determination of Compliance for a proposed project. Upon approval of the project by the CEC, this Determination of Compliance is equivalent to an Authority to Construct. A Permit to Operate is issued following demonstration of compliance with all permit conditions.

Prevention of Significant Deterioration. In the MDAQMD the Federal PSD program is administered by EPA, Region IX.

Acid Rain Permit. Regulation XII Rule 1210 (Acid Rain Provisions of Federal Operating Permits) adopts, by reference, the federal requirements of 40 CFR Part 72, which requires that certain subject facilities comply with maximum operating emissions levels for SO_2 and NOx, and monitor SO_2, NOx, and carbon dioxide emissions and exhaust gas flow rates. A Phase II Acid Rain facility, such as a new power plant project, must obtain an Acid Rain permit. A permit application must be submitted to the MDAQMD at least 24 months before operation of the new unit commences. The application must present all relevant Phase II sources at the facility, a compliance plan for each unit, applicable standards, and an estimated commencement date of operations.

Federal Operating Permit. Regulation XII (Federal Operating Permits) requires new or modified major facilities, NSPS sources, NESHAP sources, and/or Phase II Acid Rain facilities to obtain an operating permit containing the federally enforceable requirements mandated by Title V of the 1990 Clean Air Act

Amendments. A Title V permit application for a modified source must be submitted to the MDAQMD prior to commencing operation. The application must present a process description, all new stationary sources at the facility, applicable regulations, estimated emissions, associated operating conditions, alternative operating scenarios, a facility compliance plan, and a compliance certification.

New Source Performance Standards. Regulation IX Rule 900 (Standards of Performance for New Stationary Sources) adopts, by reference, the federal standards of performance for new or modified stationary sources. The applicability and requirements of the NSPS for stationary gas turbine, auxiliary boiler, and internal combustion engine are discussed above under the federal regulations section.

MDAQMD Prohibitory Rules. The general prohibitory rules in Regulation IV applicable to the project are summarized below.

Rule 401– Visible Emissions. Prohibits visible emissions as dark as, or darker than, Ringelmann No. 1 for periods greater than three minutes in any hour.

Rule 402– Nuisance. Prohibits the discharge from a facility of air pollutants that cause injury, detriment, nuisance, or annoyance to the public, or that damage business or property.

Rule 403—Fugitive Dust. Prohibits visible dust emissions off property because of transport, handling, construction, or storage activity. Requires dust minimization during grading and clearing of land. Limits the difference between upwind and downwind PM concentrations of 100 µg/cubic meter (5 hour average). Requires removal of particulate matter from equipment prior to movement on paved streets.
Rule 403.2—Fugitive Dust Control for the Mojave Desert Planning Area. The project lies outside the Mojave Desert Planning Area, so the requirements of this rule do not apply.

Rule 404 – Particulate Matter. Prohibits PM emissions in excess grains per dry standard cubic foot (gr/dscf) limits based on the exhaust flow rate of the equipment in question. This rule applies to the auxiliary boiler and emergency fire pump engine at the proposed project.

Rule 406 – Specific Contaminants. Prohibits sulfur emissions, calculated as SO_2, in excess of 0.05% by volume (500 parts per million by volume [ppmv]), and acid gas emissions above specified levels. This rule applies to the gas turbine, auxiliary boiler, and emergency fire pump engine at the proposed project.

Rule 407 – Liquid and Gaseous Air Contaminants. Prohibits carbon monoxide emissions in excess of 2000 ppmv. This rule applies to the gas turbine and auxiliary boiler at the proposed project.

Rule 409 – Combustion Contaminants. Prohibits PM emissions in excess of 0.1 grains per dry standard cubic foot (gr/dscf) from combustion equipment. This rule applies to the gas turbine, auxiliary boiler and emergency fire pump engine at the proposed project.

Rule 431 – Sulfur Content of Fuels. Prohibits the burning of gaseous fuel with a sulfur content of more than 800 ppm and liquid fuel with a sulfur content of more than 0.5% sulfur by weight. This rule applies to the auxiliary boiler and emergency fire pump engine at the proposed project.

Rule 474 – Fuel Burning Equipment. Applies to nonmobile fuel burning equipment with a rated heat input in excess of 1,775 MMBtu/hr. Because the gas turbine is subject to Rule 1159, this rule does not apply.

Rule 475 – Electric Power Generating Equipment. Limits NOx and PM emissions from electrical generating equipment rated greater than or equal to 50 MMBtu/hr to RACT levels. Because the gas turbine is subject to Rule 1159, this rule does not apply.

Rule 476 – Steam Generating Equipment. Limits NOx emissions from steam generators rated above 50 MBtu/hr to 125 ppm. Because the proposed auxiliary boiler will have a nominal heat input of 66 MMBtu/hr, it will be subject to the requirements of this rule.

Rule 1158 – Electric Utility Operations. Limits NOx from existing electric power generating facilities within the Federal Ozone Nonattainment Area. The rule is not applicable to the proposed project because the project is not located within the Federal Ozone Nonattainment Area.

Rule 1159 – Stationary Gas Turbines. Limits NOx and CO emissions from stationary gas turbines. Based on the operating hours, emission control technology and output rating proposed for the new gas turbine, the applicable limits will be 5 ppmc[15] and 200 ppmc for NOx and CO, respectively.

Rule 1160 – Internal Combustion Engines. Limits emissions from internal combustion engines. Applies only to engines located within the Federal Ozone Nonattainment Area, which as defined in the rule includes only portions of San Bernardino County. Therefore this rule is not applicable to the proposed project.

3.1.4 Environmental Analysis

The following sections describe the emission sources that have been evaluated, the results of the ambient impact analyses, and the evaluation of project compliance with the applicable air quality regulations, including the District's NSR requirements. These analyses are designed to confirm that the proposed project's design features lead to less-than-significant impacts even with the following conservative analysis assumptions and procedures: maximum allowable emission rates, project operating schedules that lead to maximum emissions, worst-case meteorological conditions, and the worst-observed existing air quality added to the highest potential ground-level impact from modeling—even when all of these situations could not physically occur at the same time. The comparison of emissions and impacts for the proposed SEP and the licensed BEP II are presented in Section 3.1.10.

3.1.4.1 Project Description

The proposed SEP combined cycle power plant will encompass the following new stationary sources of emissions:

- One GE 7HA.02 gas turbine, rated at a nominal 3320 MMBtu/hr (HHV) (at 39°F)
- One heat recovery steam generator (HRSG) with duct burners, rated at 221.6 MMBtu/hr (HHV)
- One nominal 66 MMBtu/hr (HHV) auxiliary boiler to improve startup efficiency
- A ten-cell wet mechanical draft cooling tower
- One 238 HP diesel-fired emergency fire pump engine

The new gas turbine proposed for SEP is a GE 7HA.02 unit with duct firing and a steam turbine. The combustion turbine will be fueled exclusively with natural gas. The turbine will be equipped with an inlet air evaporative cooling system to maintain turbine power output across the full range of ambient temperatures. Based on duct-fired operation at an ambient temperature of 74°F, with evaporative cooling of the CTG inlet air to 58.7°F, the facility will have a gross heat rate of approximately 6,488 Btu/kWh (HHV).

The gas turbine will be equipped with dry low-NOx combustion technology and a SCR system for NOx control. An oxidation catalyst will be used to reduce CO emissions and will also reduce emissions of TACs. The auxiliary boiler will be equipped with low-NOx burners to minimize NOx emissions. Particulate, SOx, CO, and VOC emissions will be minimized through the use of natural gas as the fuel and through efficient operation. Emission control systems will operate at all times except during startups and shutdowns. The turbine is expected to operate as a baseload plant and will be available up to 24 hours per day, 7 days per week.

Gas turbine specifications are summarized in Table 3.1-17. Auxiliary boiler specifications are summarized in Table 3.1-18.

[15] ppmc: parts per million by volume, dry, corrected to 15% O_2

Table 3.1-17. New Gas Turbine Design Specifications

Manufacturer	GE
Model	7HA.02
Fuel	Natural gas
Design Ambient Temperature [a]	39 °F
Nominal Gas Turbine Heat Input Rate[a]	
-- with duct firing	3,558 MMBtu/hr @ HHV
-- without duct firing	3,335 MMBtu/hr @ HHV
Nominal Power Output (Gas Turbine and Steam Turbine)	
-- with duct firing	543 MW
-- without duct firing	515 MW
Stack Exhaust Temperature [a]	158 °F
Exhaust Flow Rate [a]	1,637,212 acfm
Exhaust O_2 Concentration, dry volume [a]	12.09%
Exhaust CO_2 Concentration, dry volume [a]	5.05%
Exhaust Moisture Content, wet volume [a]	9.09%
Emission Controls	Dry low NOx combustor and SCR; oxidation catalyst
Stack Height	140 feet
Stack Diameter	22 feet

Notes:

[a] This ambient temperature at 100% load results in maximum heat input/power output; exhaust characteristics shown reflect this ambient temperature and load.

Table 3.1-18. New Auxiliary Boiler Design Specifications

Manufacturer/Model	Babcock & Wilcox FM Package Boiler or equivalent
Fuel	Natural gas
Nominal Heat Input Rate	66.3 MMBtu/hr @ HHV
Nominal Exhaust Temperature	600 °F
Nominal Exhaust Flow Rate	28,500 acfm
Nominal Exhaust O_2 Concentration, dry volume	3%
Emission Controls	Ultra Low-NO_x Burners (7.0 ppmv NO_x @ 3% O_2)
Stack Height	50 feet
Stack Diameter	35 inches

The natural gas fuel will meet the Public Utility Commission (PUC) grade specifications and will have a sulfur content not to exceed 0.5 grains per 100 dry standard cubic feet (dscf).[16] The diesel fuel sulfur will be limited to 15 ppm, and will meet all California low sulfur diesel specifications. Table 3.1-19 summarizes a typical analysis for the natural gas fuel to be used by the gas turbine, the duct burner, and the auxiliary boiler.

Table 3.1-19. Typical Natural Gas Specifications

Component Analysis		Chemical Analysis	
Component	**Average Concentration, Volume %**	**Constituent**	**Percent by Weight**
Methane (CH_4)	93.44	Carbon (C)	73.00%
Ethane (C_2H_6)	4.06	Hydrogen (H)	23.75%
Propane (C_3H_8)	0.45	Nitrogen (N)	2.29%
Butane (C_4H_{10})	0.10	Oxygen (O)	0.96%
Pentane (C_5H_{12})	0.02	Sulfur (S)	0.25 gr/100 scf
Hexane (C_6H_{14})	0.02		(annual average)
Nitrogen (N_2)	1.40	Higher Heating Value	1,036 Btu/scf
Carbon Dioxide (CO_2)	0.51		22,867 Btu/lb

The SEP will also contain a new emergency diesel fire pump engine rated at 238 bhp and a 10-cell mechanical draft cooling tower. Specifications for the new emergency diesel fire pump engine and cooling tower are provided in Appendix 3.1B, Tables 3.1B-4 and 3.1B-5.

3.1.4.2 Facility Operation

Combustion turbine performance specifications were developed for four ambient temperature scenarios: hot ambient temperature (110°F), annual average temperature (74°F), ISO temperature (59°F), and cold ambient temperature (39°F). The low-temperature scenario was used to characterize maximum hourly emissions because it has the highest hourly heat input and emission rates. The plant may be operated under a wide variety of conditions over its life. Maximum daily emissions are based on cold full-load operation of the CTG with 20 hours of duct firing and two startup/shutdown cycles, and 24 hours of operation for the auxiliary boiler, the emergency diesel fire pump engine and the cooling tower. Maximum annual emissions for the CTG/HRSG were based on 5,500 hours per year of baseload operation and 1,500 hours per year of duct firing, with 200 startup/shutdown cycles in addition to the 7,000 operating hours. Annual emissions for the auxiliary boiler were calculated based on a total of 7,000 hours of operation per year. Emergency diesel fire pump engine emissions were based on 200 hours of operation per year.

This operating profile was used to develop daily and annual heat input limits for the fuel-burning equipment. These heat input limits, summarized in Table 3.1-20, were used as the basis for calculating project emissions.

Table 3.1-20. Hourly, Daily and Annual Heat Input for the SEP Combustion Units

	Heat Input, MMBtu (HHV)		
Interval	**Gas Turbine**	**Auxiliary Boiler**	**Fire Pump Engine**
Hourly[a]	3,558	66.3	1.6

[16] 0.25 grains per 100 dry standard cubic feet on an annual average basis.

Table 3.1-20. Hourly, Daily and Annual Heat Input for the SEP Combustion Units

	Heat Input, MMBtu (HHV)		
Interval	**Gas Turbine**	**Auxiliary Boiler**	**Fire Pump Engine**
Daily[b]	84,500	1,600	38.8
Annual[c]	24,847,230	463,820	323

[a] Based on CTG performance at 39°F.

[b] 24 hr/day of operation for the CTG, including 20 hr/day of duct firing; 24 hr/day of operation for the auxiliary boiler and emergency fire pump engine.

[c] 7,000 hr/yr of operation for the CTG, including 1,500 hr/yr of duct firing; 7,000 hr/yr of operation for the auxiliary boiler; and 200 hr/yr of operation for the emergency fire pump engine. Based on CTG performance at 39°F.

Criteria pollutant emission rates were calculated for three components of the project: construction of the project, commissioning activities for the gas turbine/HRSG/steam turbine and auxiliary boiler, and operation. Tables containing the detailed calculations can be found in Appendix 3.1B.

3.1.4.3 Proposed Construction Emissions

Construction of the project will require both laydown and construction parking areas. SEP encompasses 76 acres of property, which will allow all laydown and construction parking to be accommodated on the project site. During the grading phase of the project, up to 10,000 cubic yards of fill material will be imported to the SEP site and approximately 50,000 cubic yards of excess soil will be removed from the site. The excess soil will be moved to an adjacent site owned by APHUS, north of the existing BEP facility.

Hourly, daily, and annual criteria pollutant emissions during construction were calculated based on the 26-month active construction schedule (including 4 months of commissioning) shown in Section 2, Project Description. Onsite and offsite project emissions have been divided into two categories: (1) vehicle and construction equipment exhaust; and (2) fugitive dust from vehicle and construction equipment, including grading and earthmoving during plant construction, and windblown dust.

The following criteria pollutant emissions have been calculated: NOx, SOx, VOC, CO, PM_{10}, and $PM_{2.5}$. Fugitive dust and construction equipment exhaust emissions have been estimated using methodology and emission factors consistent with the California Emissions Estimator Model (CalEEMod; version 2011.1.1), which incorporates OFFROAD2007 and portions of the EPA's AP-42 document (ENVIRON, 2011; SCAQMD et al., 2011). [17] Vehicle exhaust emissions for travel on both paved and unpaved roads were estimated using EMFAC2007 (version 2.3) emission factors, consistent with the CalEEMod methodology. Wind-blown fugitive dust emissions from earth movement and stockpiles and fugitive dust emissions for travel on both paved and unpaved roads were calculated external to the model.

Maximum daily and annual emissions were estimated based on the number and type of construction equipment, the number of heavy-duty trucks, and the workforce projected for each month of construction. It was conservatively assumed the construction activities will occur 10 hours per day and up to 23 days per month.[18] The maximum annual construction emissions will occur from month 7 through month 18 for all criteria pollutants.

[17] CalEEMod is a statewide computer model created by ENVIRON and the SCAQMD to quantify criteria pollutant and GHG emissions associated with the construction activities from a variety of land use projects (ENVIRON, 2011). Developed in cooperation with air districts throughout the state, CalEEMod is intended to standardize air quality analyses while allowing air districts to provide specific defaults reflecting regional conditions, regulations, and policies (SCAQMD et al., 2011). CalEEMod is generally viewed as an improvement and replacement of URBEMIS2007 by providing updated factors, methodologies, and defaults that are robustly documented.

[18] The number of construction days varies by month; see Appendix 3.1F.

The maximum daily and annual construction emissions are summarized and compared with MDAQMD CEQA thresholds in Table 3.1-21. The detailed emission calculations for construction are provided in Appendix 3.1C.

Table 3.1-21. Maximum Daily and Annual Emissions During Construction

Construction Emissions	NOx	CO	VOC	SO_2	PM_{10}	$PM_{2.5}$
Maximum Daily Emissions, lb/day	325	564	22	1.3	58	18
MDAQMD CEQA Significance Thresholds, lb/day[a]	137	548	137	137	82	82
Maximum Annual Emissions, tons/yr	16	34	1.3	0.1	5	1
MDAQMD CEQA Significance Thresholds, tons/yr[a]	25	100	25	25	15	15

Note: Maximum daily and annual emissions encompass contributions from project and linear construction activities. The PM_{10} and $PM_{2.5}$ emissions encompass exhaust and fugitive dust emissions.

[a] Source: "MDAQMD CEQA and Federal Conformity Guidelines," February 2009.

Emissions during construction will exceed the District's significance threshold for daily NOx and CO emissions. SEP will be required to submit a dust control plan to the District for approval prior to commencing construction, and mitigation measures will be used throughout the construction period to minimize emissions of all pollutants during this phase of the project. Mitigation measures during the construction period are discussed in more detail in Appendix 3.1C.

The maximum annual GHG emissions from construction activities are presented in Table 3.1-22. Project site construction equipment and on-site vehicle GHG emissions have been calculated in CalEEMod using emission factors from EPA's GHG Reporting Regulation[19] and fuel consumption rates from OFFROAD2007. No significant emissions of HFCs, PFCs, or SF_6 are expected during the construction.

The Council on Environmental Quality (CEQ) has provided draft guidance suggesting that quantities of direct GHG emissions equal to or greater than 25,000 metric tons of carbon dioxide equivalent (CO_2e) on an annual basis are meaningful and should be quantified and disclosed for project evaluations within the National Environmental Policy Act (NEPA) framework (CEQ, 2010). While this is not a NEPA evaluation, this threshold will be used as a guide for assessing whether GHG emissions from construction activities and mobile source emissions during operation may be meaningful. As presented in Table 3.1-22, the quantities of direct GHG emissions are well below 25,000 metric tons of CO_2e on an annual basis. Therefore, based on the draft CEQ guidance, as for the licensed project, the GHG emissions from the proposed project's construction activities will not be significant.

Detailed greenhouse gas emission and fuel use calculations for the construction period are shown in Appendix 3.1C.

Table 3.1-22. Maximum Annual Greenhouse Gas Emissions Estimates for Construction Activities

Greenhouse Gas Emissions	CO_2	CH_4	N_2O	CO_2 Equivalent
Total (metric tons)	5,090	0.66	0.00	5,107

CO_2 equivalent total assumes a 100-year global warming potential of 25 for CH_4 and 298 for N_2O (IPCC, 2007)

[19] 40 CFR 98 (as revised on 11/29/13).

GHG emissions from worker commutes and material deliveries were also calculated as part of the analysis. The GHG emissions are presented in Table 3.1-23. Emissions were estimated in the same manner as GHG emissions from construction activities.

Table 3.1-23. Greenhouse Gas Emissions from Worker Commute and Deliveries During Operation

	Greenhouse Gas Emissions (metric tons/year)			
Emission Source	**CO_2**	**CH_4**	**N_2O**	**CO_2 Equivalent**
Worker Commute, metric tons/year	56.1	0.003	0.0	56
Material Deliveries, metric tons/year	37.8	0.0002	0.0	38
Total	93.9	0.003	0.0	94

3.1.4.4 Initial Commissioning Emissions

Gas turbine commissioning is the process of initial startup, tuning, and adjustment of the new CTG and auxiliary equipment and of the emission control systems. The commissioning process will consist of sequential test operation of the gas turbine up through increasing load levels, and with successive application of the air pollution control systems. The total set of commissioning tests will require approximately 1,250 hours of gas turbine operation, before the gas turbine is ready for emissions performance testing. Up to approximately 350 hours of operation will be required prior to installing the SCR and oxidation catalysts. The detailed gas turbine commissioning schedule is shown in Appendix 3.1B. In the permit application submitted to the MDAQMD, the project owner will be requesting that the District allow up to 1,250 hours of gas turbine operation prior to the initial compliance tests.

During part of this period, NOx emissions will be higher than normal operating levels because the NOx emission control system will not be installed and/or fully operational and because the gas turbine will not be tuned for optimum performance. CO emissions will also be higher than normal because turbine performance will not be optimized and the CO emissions control system will not be installed or fully operational.[20] Emission rates for PM_{10}, $PM_{2.5}$, and SOx during initial commissioning are not expected to be higher than normal operating emissions because emissions from these pollutants are related to fuel use.

Gas turbine commissioning activities can be broken down into several separate test phases, as shown in the commissioning summary table included in Appendix 3.1B. The emission estimates shown in the detailed commissioning summary table in Appendix 3.1B are based on the emission rates and commissioning schedule provided by the gas turbine supplier. Estimated emissions of criteria pollutants during the commissioning phase are summarized in Table 3.1-24.

Table 3.1-24. Maximum Initial Commissioning Emissions for the SEP Gas Turbine

Period	**NOx**	**SO_2**	**CO**	**VOC**	**$PM_{10}/PM_{2.5}$**
CTG/HRSG, lb/hr	625	4.9	4,919	464	8.0

[20] Some of the commissioning test phases must be carried out at such low turbine loads that turbine exhaust temperatures are not able to reach levels at which the oxidation catalyst will be fully operational.

Table 3.1-24. Maximum Initial Commissioning Emissions for the SEP Gas Turbine

Period	NOx	SO_2	CO	VOC	$PM_{10}/PM_{2.5}$
CTG/HRSG, lb/day	15,610	118	28,500	2,620	211
CTG/HRSG, total tons	70	3.1	22	3.0	4.9

At the conclusion of the commissioning period, emissions rates will be at the normal operating levels discussed in the following section. While the required continuous emissions monitoring system (CEMS) for NOx and CO will be calibrated and operating during the commissioning test phases, the CEMS will be not certified until the end of the commissioning period.

Steam from the auxiliary boiler will be required during the gas turbine commissioning period. Therefore, the auxiliary boiler will undergo tuning to optimize the low-NOx burner operation prior to commencement of gas turbine commissioning. The boiler will need to operate for up to 200 hours during an initial commissioning period to allow for initial operation and tuning. During the commissioning period, uncontrolled NOx emissions from the auxiliary boiler may be up to 100 ppmvd, or 0.12 lb/MMBtu. Until the boiler is tuned, CO emissions may be up to 250 ppmvd, or 0.18 lb/MMBtu.

3.1.4.5 Proposed Criteria Pollutant Emissions During Project Operation

Operational emission estimates were prepared for turbine startup and shutdown modes and steady-state operation. Emission estimates for these operating modes are based on vendor data and engineering estimates. Natural gas will be the only fuel burned in the turbine and duct burner. The turbine will use dry low NOx combustors, combined with SCR, to limit emissions of NOx to 2.0 ppmv, dry, corrected to 15 percent O_2 (ppmc), on a 1-hour average basis, and to 1.5 ppmc on an annual average basis. Best combustion practices, combined with the use of an oxidation catalyst, will be used to limit CO emissions to 2.0 ppmc on a 1-hour average basis, and 1.5 ppmc on an annual average basis. VOC emissions will be limited to 2.0 ppmc during duct firing and 1 ppmc without duct firing. PM_{10} and SO_2 emissions will be kept to a minimum through the exclusive use of natural gas.

Startup and Shutdown Emissions. During the startup and shutdown operating modes, the emission control systems are not fully functional, which may result in higher air emission rates relative to the steady-state operating mode. The startup and shutdown of this fast-start gas turbine occurs in a relatively short time (well under one hour).

The time from fuel initiation until minimum compliant operating load is reached is expected to take up to 45 minutes for cold, warm, and hot starts. Although the exhaust emissions are expected to reach BACT levels sooner, these startup periods provide a conservative estimate of the time for the SCR and oxidation catalyst systems to reach their respective operating temperatures and to achieve allowable BACT emission levels.

The plant has been designed to accommodate two types of fast starts: Rapid Response and Rapid Response Lite. Rapid Response takes the gas turbine to base load as quickly as possible, while Rapid Response Lite takes the gas turbine to minimum emissions-compliant load (nominally 40% load) as quickly as possible. SEP expects to use the Rapid Response Lite startup procedures most of the time; however, at times of high demand, the Rapid Response startup procedures will be used. The Rapid Response procedure requires more auxiliary boiler steam and has slightly higher emissions over the startup period. To be conservative, all startups were assumed to be under Rapid Response conditions (that is, higher auxiliary boiler load and higher gas turbine emissions). Emissions for both Rapid Response and Rapid Response Lite startups are shown in Appendix 3.1B, Table 3.1B-2.

The gas turbine startup and shutdown emission rates are presented on a pound-per-event (lb/event) and a pound-per-hour (lb/hr) basis in Table 3.1-25. The startup and shutdown event data are based on manufacturer data and engineering estimates. The hourly startup and shutdown emission rates assume that for the remainder of the hour following completion of the startup, the turbine operates at full load.

Table 3.1-25. Facility Startup/Shutdown Emission Rates[a]

	Time Required to Reach Emissions Compliance, minutes	NOx	CO	VOC	$PM_{10}/PM_{2.5}$
Cold Start					
Startup (lb/event)[b]	45	181	132	10	6.6
Startup (lb/hr)[c]	--	188	136	12	9.1
Warm Start					
Startup (lb/event)[b]	40	146	130	10	5.9
Startup (lb/hr)[c]	--	155	135	13	9.2
Hot Start					
Startup (lb/event)[b]	21	97	123	9	3.1
Startup (lb/hr)[c]	--	114	133	15	9.6
Shutdown					
Shutdown (lb/event)[b]	14	4.9	136	28	2.1
Shutdown (lb/hr)[c]	--	25	148	35	9.8

[a] Emission rates shown reflect Rapid Response startup procedures. See text.

[b] Emission rates provided by GE.

[c] NOx, CO, VOC and PM_{10} emissions for the balance of the hour were based on the hourly emission rate for 100 percent load, with duct firing, at 39°F.

Emissions During Normal Operation. Turbine performance data are provided in Appendix 3.1B, Table 3.1B-1. Hourly emissions of NOx, CO, and VOC were calculated from emission limits (in ppmv @ 15 percent O_2) and the exhaust flow rates. The NOx emission limit reflects the application of SCR. The VOC emission limit reflects the use of good combustion practices. The CO emission limit reflects the expected performance of the oxidation catalyst. Maximum emissions were based on the heat input rates shown in Table 3.1-20. SO_2 emissions were calculated based on the maximum allowable fuel sulfur content of 0.5 grain per 100 standard cubic feet (scf) and the hourly heat input rate in Table 3.1-20. Maximum hourly PM_{10} emissions reflect expected turbine performance, based on emissions limits from similar installations. $PM_{2.5}$ emissions were determined based on the assumption that all particulate matter emissions are less than 2.5 microns in size.

Maximum hourly emission rates are summarized in Table 3.1-26. The BACT analysis upon which the emission factors are based is presented in Appendix 3.1D.

An evaporative cooler will be used to cool the gas turbine inlet air and increase efficiency at higher ambient temperatures. The evaporative cooler will be a closed-loop system and will have no air emissions.

Table 3.1-26. Maximum Pollutant Emission Rates for the 7HA Gas Turbine[a]

Pollutant	ppmvd @ 15% O_2	lb/MMBtu	Emission Rate (lb/hr)	
			With duct firing	No duct firing
NOx	2.0 (1-hour)	0.0073	26.0	24.2
	1.5 (annual average)	0.0055	--	--
CO	2.0 (1-hour)	0.0044	15.8	14.8
	1.5 (annual average)	0.0033	--	--
VOC	2.0 (3-hour) (w/ duct firing)	0.0025	9.0	--
	1.0 (3-hour) (no duct firing)	0.0013	--	4.2
SO_2 [d]	n/a[c]	0.0021	4.9	4.6
PM_{10} /$PM_{2.5}$ [b]	n/a	n/a	10	8

[a] Maximum values are for the turbine at an ambient temperature of 39°F and exclude startups and shutdowns.

[b] 100 percent of particulate matter emissions assumed to be emitted as PM_{10} and $PM_{2.5}$.

[c] Not applicable.

[d] Estimated using a maximum of 0.5 grains of sulfur per 100 dscf of natural gas.

Auxiliary Boiler Emissions. The auxiliary steam boiler will provide steam during gas turbine startup and shutdown to allow startups and shutdowns to be accomplished more quickly. During prestart activities and during the initial phases of start-up, steam for sealing, warming the steam turbine, and heating/reheating condensate (condenser sparging steam) will be supplied from the auxiliary boiler. Annual boiler emissions for all pollutants are calculated based on 7,000 hours per year of operation.

During normal project operation, and as a worst case, the auxiliary boiler is expected to undergo one startup/shutdown event for each gas turbine startup. The auxiliary boiler is assumed to require up to 2 hours to come into compliance with the proposed NOx, CO, and VOC limits. Boiler shutdowns are expected to occur quickly enough that emissions during those periods will not exceed normal limits on a three-hour average basis. Therefore, the auxiliary boiler is assumed to have up to 2 hours per day of elevated NOx, CO and VOC emissions as a result of startup and shutdown activities.

Emission rates for the auxiliary boiler during commissioning, startup, and normal operation are shown in Table 3.1-27. The maximum hourly, daily and annual heat inputs to the boiler, summarized in Table 3.1-20, were used as the basis for calculating hourly, daily, and annual emissions shown.

Table 3.1-27. Emission Rates for the Auxiliary Boiler

Pollutant	Emissions		
	ppmvd @ 3% O_2	lb/MMBtu	lb/hr
NOx (normal operation)	7	0.0084	0.6
NOx (startup/shutdown)	25	0.03	2.0
NOx (tuning)	100	0.12	8.0
SOx	1.26[a]	0.0014	0.1
CO (normal operation)	50	0.037	2.4
CO (startup/shutdown/tuning)	250	0.18	12.1
VOC (normal operation)	7	0.004	0.3
VOC (startup/shutdown/tuning)	25	0.015	1.0
PM_{10}/$PM_{2.5}$	--	0.007	0.5

[a] Based on maximum fuel sulfur content of 0.5 grains per 100 scf.

Wet Cooling Tower Emissions. Particulate emissions result from evaporation of the cooling water. Drift will be minimized through the use of a high-efficiency drift eliminator. Treated well water will be used for makeup water, and the total dissolved solids (TDS) level of the recirculating water is expected to be approximately 5000 ppmw after concentration.

Details of the cooling water drift calculation for the wet cooling tower are shown in Appendix 3.1B, Table 3.1B-5. Particulate emissions from the cooling tower will be about 1.6 pounds per hour.

Facility Emissions. Maximum hourly NOx, CO and VOC emissions are expected to occur during a gas turbine startup. Since the time from ignition to fully controlled operation is under 60 minutes, NOx, CO and VOC emissions during the remainder of the hour will be at controlled emission levels with duct firing. The detailed CTG startup hourly emissions are shown in Table 3.1-25, along with the startup/shutdown emission rates and durations supplied by the gas turbine vendor. Because SOx emissions are based on fuel consumption, the maximum hourly SOx emissions are based on the turbine operating at full load at the minimum ambient temperature.

Gas turbine performance specifications were evaluated for four ambient temperature scenarios: extreme hot temperature (110^{o}F), annual average temperature (74^{o}F), ISO temperature (59^{o}F) and extreme low temperature (39^{o}F). The cold temperature scenario (or cold startup scenario) was used to characterize maximum hourly emissions during normal operation because it has the highest hourly heat input and emission rates. The worst-case day is defined as follows:[21]

- 1 hour in cold start mode
- 20 hours of base load operation w/duct firing
- 1 hour in hot start mode
- 2 hours in shutdown mode

The annual emissions profile assumes that the plant will operate 7,000 hours per year, which is based on 5,500 hours per year of turbine operation without duct firing and 1,500 hours per year with duct firing, plus 50 cold starts, 150 warm starts, and 200 shutdowns (400 hours in startup/shutdown mode). Because the facility will utilize GE's "Rapid Response" design, startups will require less than 1 hour; the actual time required will depend upon the condition of the gas turbine (that is, the down-time prior to start, which determines whether the startup is defined as cold, warm, or hot).[22] Associated with the Rapid Response design will be an auxiliary boiler that will operate up to approximately 7,000 hours per year, including up to about 400 hours per year of startup. Annual emissions show the emergency fire pump engine operating a total of 200 hours per year. The assumptions used in calculating maximum hourly, daily, and annual emissions from the new facility are shown in Appendix 3.1B.

Maximum hourly, daily, and annual emissions for the proposed project are presented in Table 3.1-28. Detailed calculations are provided in Appendix 3.1B, Table 3.1B-6.

[21] The daily emissions calculation for NOx, CO, and VOC encompass startup and shutdown hours. SOx and PM_{10} emissions are not higher during startups or shutdowns, so daily emissions of these pollutants are based on 24 hours of full load operation with duct firing.

[22] Startup times shown are the times required to achieve compliance with permitted emission limits.

Table 3.1-28. SEP Facility Emissions

	NOx	SO_2	VOC	CO	PM_{10}/ $PM_{2.5}$
Maximum Hourly Emissions[a], lb/hr	188.1	5.0	12.5	138.4	12.1
Maximum Daily Facility Emissions[b], lb/day	919.6	120.0	286.0	966.6	289.3
Maximum Annual Facility Emissions[c], tpy	85.6	8.8	24.2	78.0	40.1

[a] Maximum hourly NOx, CO, and VOC emissions were based on a startup hour. The maximum hourly PM_{10}, $PM_{2.5}$, and SOx emissions are based on turbine operation at full load with duct firing at the minimum ambient temperature and include the auxiliary boiler and cooling tower.

[b] Maximum daily emissions are based on 2 startups and 2 shutdowns, with the remaining hours at full load with duct firing; and 24 hours of operation for the auxiliary boiler, emergency fire pump engine and cooling tower.

[c] Maximum annual emissions are based on 200 startups, 200 shutdowns, and 7,000 total hours of operation at 100 percent load, 74°F, for each turbine; 400 hours of startup and 7,000 total hours of operation for the auxiliary boiler; 8,760 hours of operation for the cooling tower; and 200 hours per year of operation for the emergency fire pump engine.

tpy = ton(s) per year

3.1.4.6 Noncriteria Pollutant Emissions During Project Operation

Noncriteria pollutant emissions were estimated for the proposed new equipment. These emissions are summarized in Table 3.1-29.[23] The detailed noncriteria pollutant emissions calculations are provided in Appendix 3.1B and the associated screening-level health risk assessment is shown in Section 3.8, Public Health. Shown in Table 3.1-30 is a summary of the maximum potential to emit for noncriteria pollutants for the existing units at the same stationary source (BEP). This information is provided for regulatory applicability purposes and is discussed further below.

As discussed in Section 3.1.1.1, the previously-licensed BEP II and the existing BEP were not under common ownership or control at the time either project was licensed and were treated as separate stationary sources for federal regulatory purposes. In contrast, the proposed SEP and the existing BEP are under common ownership and are considered a single stationary source under federal regulations. Therefore, total emissions from both projects must be compared with regulatory thresholds to determine whether the stationary source is a major source of hazardous air pollutants (HAPs).

Table 3.1-29. Noncriteria Pollutant Emissions for the New Equipment

	Emissions, tons per year			
Compound	**Gas Turbine/HRSG**	**Auxiliary Boiler**	**Fire Pump Engine**	**Total**
Ammonia (not a HAP)	81.7	--	--	81.7
Propylene (not a HAP)	4.7	0.03	--	4.7
Diesel PM (not a HAP)	--	--	1.06×10^{-2}	1.06×10^{-2}
Acetaldehyde	0.25	1.99×10^{-3}	--	0.25
Acrolein	0.04	6.04×10^{-4}	--	0.04
Benzene	0.07	9.65×10^{-3}	--	0.07
1,3-Butadiene	2.67×10^{-3}	--	--	2.67×10^{-3}

[23] There will also be small quantities of noncriteria pollutant emissions from the cooling tower, resulting from trace amounts of impurities in the circulating water. These are quantified in Appendix 3.1B and are part of the screening health risk assessment.

Table 3.1-29. Noncriteria Pollutant Emissions for the New Equipment

	Emissions, tons per year			
Compound	**Gas Turbine/HRSG**	**Auxiliary Boiler**	**Fire Pump Engine**	**Total**
Ethylbenzene	0.20	$1.54x10^{-3}$	--	0.20
Formaldehyde	5.59	$4.95x10^{-2}$	--	5.64
Hexane	1.58	$1.03x10^{-3}$	--	1.58
Naphthalene	0.01	$6.72x10^{-5}$	--	0.01
PAHs (other)	$4.00x10^{-3}$	$2.24x10^{-5}$	--	$4.02x10^{-3}$
Propylene Oxide	0.18	--	--	0.18
Toluene	0.81	$5.93x10^{-3}$	--	0.87
Xylene	0.40	$4.41x10^{-3}$	--	0.44
Total HAPs (Proposed Project)	**9.1**	**$6.6x10^{-2}$**	**--**	**9.2**

Table 3.1-30. Noncriteria Pollutant Emissions for the Existing BEP

Compound	**Emissions (tons/yr)**
Ammonia (not a HAP)	213.9
Propylene (not a HAP)	6.1
Acetaldehyde	0.32
Acrolein	0.05
Benzene	0.10
1,3-Butadiene	$3.42x10^{-3}$
Ethylbenzene	0.25
Formaldehyde	7.17
Hexane	2.02
Naphthalene	0.01
Other PAHs	$5.12x10^{-3}$
Propylene Oxide	0.23
Toluene	1.04
Xylene	0.51
Total HAPs (Existing Facility)	**11.7**

Although total combined HAP emissions from the two facilities are below the 25 ton per year major source threshold applicable to total HAP emissions, total potential formaldehyde emissions are

12.8 tons/yr, in excess of the 10 ton/yr major source threshold for a single HAP. Therefore, the two facilities will be a major source of HAP under federal regulations.

3.1.4.7 Greenhouse Gas Emission Estimates

GHG emissions for normal facility operation were calculated based on the maximum fuel use predicted for project operation and emission factors contained in the EPA GHG Reporting Regulation.[24] GHG emissions resulting from project operation are presented in Table 3.1-31.

Table 3.1-31. Project Greenhouse Gas Emissions

	CO_2, metric tons/year	CH_4, metric tons/year	N2O, metric tons/year	SF6, metric tons/year	CO_2eq, metric tons/yr[a]	CO_2, metric tons/MWh (gross/net)[b]
Gas turbine	1,318,394	24.5	2.5	--	--	--
Auxiliary boiler	24,610	0.5	0.05	--	--	--
Fire pump engine	21	0.001	0.0002	--	--	--
Circuit breakers	--	--	--	0.001	--	--
Total Emissions	1,343,025	25	2	0.001	1,344,428	0.35/0.36

[a] Shows CH_4, N_2O, and SF_6, weighted by their global warming potential.

[b] Reflects gross and net rated output of the plant. See Appendix 3.1B, Table 3.1B-9.

The estimated emissions encompass the combustion emissions for the gas turbine and duct burners, the auxiliary boiler, and the emergency diesel fire pump engine. They also encompass sulfur hexafluoride emissions from potential leaks of the 13 new circuit breakers. The project impact assessment evaluates the impacts from potential emissions of SF_6 in addition to emissions of CO_2, CH_4, and N_2O.

The annual fuel use upon which these calculations were based is provided in Table 3.1-20. The detailed GHG emission calculations are included in Appendix 3.1B, Table 3.1B-9.

3.1.4.8 Emissions Reductions at Blythe Energy Project

The owner of BEP is proposing to reduce the hourly and annual PM_{10} mass emission limits and the annual SO_2 mass emission limits in the current Permit to Operate (PTO) and Title V operating permit for the two existing gas turbines at existing BEP.

Hourly and Annual PM10 Emissions. When these turbines were originally permitted in 2000, gas turbine manufacturers had limited PM emissions test data from in-use gas turbines. The test data they did have showed significant variation in PM emission rates because of variability in source test conditions and procedures. Therefore, PM emissions guarantees provided by gas turbine manufacturers were relatively high. However, refinements in PM test methods and improved quality control procedures have significantly reduced the variability in PM test results, and have improved the accuracy of PM testing at low concentrations.[25] PM_{10} source tests on the BEP gas turbines demonstrate that PM_{10} emissions are consistently well below the permitted emission rate of 11.5 pounds per hour (lb/hr). As an example, PM_{10} test results from the 2014 annual source testing of the BEP gas turbines are summarized in Table 3.1-32.

Based on these test results, the owner of BEP is proposing to reduce the hourly PM_{10} limit for each gas turbine from the current level of 11.5 lb/hr to 6.2 lb/hr. PM_{10} emissions changes for the gas turbines are summarized in Table 3.1-33.

[24] 40 CFR 98 (as revised on 11/29/13).

[25] Matis, Craig, Glenn England et al, "Evaluation of CTM-039 Dilution Method for Measuring $PM_{10}/PM_{2.5}$ Emissions from Gas-Fired Combustion Turbines," August 20, 2009.

Table 3.1-32. 2014 PM_{10} Test Results

Unit	PM_{10} Emission Rate, lb/hr			
	Run 1	Run 2	Run 3	Average
Unit 1	4.6	1.6	1.5	2.5
Unit 2	2.4	2.7	0.8	1.9

Table 3.1-33. Emissions Changes: PM_{10} from the BEP Gas Turbines

	Period	
	lb/hr	lb/day
Proposed permit limit		
– per unit	6.2	–
– total, both units	–	298.5
Current permit limit		
– per unit	11.5	–
– total, both units	–	565
Net change		
– per unit	(5.3)	–
– total, both units	(10.6)	(266.5)

A review of emissions data for the gas turbines, including annual emission reports, confirms that actual emissions of PM are well below permitted limits. Therefore, the owner of BEP is also proposing to reduce the annual PM limit in the gas turbine PTO to more closely reflect actual gas turbine performance. Table 3.1-34 summarizes the annual PM emissions as reported by the facility for calendar years 2012, 2013, and 2014. PM_{10} emissions from the gas turbines are calculated using an emission factor of 10 lb/hr. Reducing the hourly emission limit for the gas turbines to 6.2 lb/hr will reduce the historical annual emissions by nearly 40 percent.

Based on these historical emissions, the owner of BEP is confident that facility-wide annual emissions of PM_{10} can be maintained below 56.9 tpy under all future operating conditions. The owner of BEP is proposing to reduce the annual PM_{10} limit to 56.9 tons with compliance to be determined on a 12-month rolling total basis. Table 3.1-35 summarizes the proposed reduction in permitted annual PM_{10} emissions.

Table 3.1-34. Historical Annual Emissions from the BEP Gas Turbines

Pollutant	Unit	Reported Emissions, tpy[a]			
		2012	2013	2014	Maximum
PM	Total including cooling towers	45.9	46.2	42.2	46.2

Note:

[a] Annual emissions from the gas turbines were calculated using an emission factor of 10 lb/hr. Emissions will be significantly lower when calculated using the proposed new hourly emission limit of 6.2 lb/hr.

Table 3.1-35. Proposed Reductions in Permitted Annual PM_{10} Emissions

	PM_{10} Permit Limit, tons per year [a]
Proposed permit limit	56.9
Current permit limit	97
Net change	(40.1)

Note:

[a] PM_{10} limits encompass emissions from the cooling towers.

Annual SO2 Emissions. The annual SO_2 emission limit for BEP was based on a maximum annual average natural gas fuel sulfur content of 0.5 grains per 100 standard cubic feet (gr/100 scf). As shown in Table 3.1-36, more recently licensed projects, including BEP II, have assumed a significantly lower annual average sulfur content in calculating their annual SO_2 potential to emit.

Table 3.1-36. Sulfur Content Assumptions for Recent Projects Approved in the Project Area

Project Name	**Year Filed/Year Approved**	**Maximum Annual Average Sulfur Content of Natural Gas**
Victorville Hybrid	2007/2008	0.2 gr/100 scf
Genesis Solar	2009/2010	<0.1 gr/100 scf
Abengoa Mojave Solar	2009/2010	0.2 gr/100 scf
Blythe Solar	2009/2012	0.2 gr/100 scf
BEP II	2010/2012	0.25 gr/100 scf

The project owner will maintain the 0.5 gr/100 scf as a short-term limit for BEP (that is, for hourly and daily SO_2 emissions calculations), but will propose a new limit of 0.25 gr/100 scf that will be applicable on an annual average basis. This will reduce BEP's SO_2 annual potential to emit from 24 tpy to 12 tpy.

Simultaneous Emissions Reductions. The owner of BEP was required to surrender emission reduction credits (ERCs) to offset the original permitted emissions of PM from the project. Because the permitted emissions from BEP are being reduced, the offset obligation will also be reduced. In accordance with District Rule 1305 (B)(2)(b), which discusses Actual Emission Reductions generated by simultaneous reductions at a facility:

> *[Actual Emissions Reductions] generated from Federally Enforceable reductions in a Facility's Potential to Emit may be used as Offsets if the [Historic Actual Emissions] for the Facility or Emissions Unit which is proposed for a Federally Enforceable reduction in its Potential to Emit was completely offset in a prior permitting action pursuant to this Regulation.*

While Actual Emission Reductions generated by simultaneous reductions at a facility are not eligible for banking as ERCs, they can be used to reduce the offset liability of a proposed modification. The owner of BEP completely offset the facility's PM_{10} Potential to Emit by providing 103 tons of PM_{10} ERCs prior to commencing construction on the facility. The facility Potential to Emit is proposed to be reduced by 40.1 tons of PM_{10}, and under Rule 1305(B)(2)(b), this reduction may be used as a simultaneous emissions reduction to offset PM_{10} emissions increases that will result from the proposed addition of the SEP at this stationary source.

3.1.5 Air Quality Impact Analysis

The MDAQMD new source review regulations require the project owner to prepare ambient air quality modeling analyses and other impact assessments. An ambient air quality impact assessment is also required by the CEC for CEQA review. These analyses are presented in this section.

3.1.5.1 Air Quality Modeling Methodology

An assessment of impacts from the proposed project on ambient air quality has been conducted using EPA-approved air quality dispersion models. These models use a mathematical description of atmospheric turbulent entrainment and dispersion to simulate the actual processes by which emissions are transported to ground-level areas.

Based on conservative assumptions, modeling was used to determine the maximum ground-level impacts of the project. The results were compared with state and federal ambient air quality standards and PSD significance levels.[26] If the standards are not exceeded in the analysis, then the facility will cause no exceedances under any operating or ambient conditions, at any location, under any meteorological conditions. In accordance with the air quality impact analysis guidelines developed by EPA[27] and ARB,[28] the ground-level impact analysis encompasses the following assessments:

- Impacts in simple, intermediate, and complex terrain
- Aerodynamic effects (downwash) as a result of nearby building(s) and structures
- Impacts from inversion breakup (fumigation)

Simple, intermediate, and complex terrain impacts were assessed for all meteorological conditions that will limit the amount of final plume rise. Plume impaction on elevated terrain, such as on the slope of a nearby hill, can cause high ground-level concentrations, especially under stable atmospheric conditions. Another dispersion condition that can cause high ground-level pollutant concentrations is caused by building downwash. A stack plume can be impacted by downwash when wind speeds are high and a sufficiently tall building or structure is in close proximity to the emission stack. This can result in building wake effects where the plume is drawn down toward the ground by the lower pressure region that exists in the lee (downwind) side of the building or structure.

Fumigation conditions occur when the plume is emitted into a layer of stable air (inversion) that then becomes unstable from below, resulting in a rapid mixing of pollutants out of the stable layer and towards the ground in the unstable layer underneath. The low mixing height that results from this condition allows little dispersion of the stack plume before it is carried downwind to the ground. Although fumigation conditions are short-term, rarely lasting as long as an hour, relatively high ground-level concentrations may be reached during that period. Fumigation tends to occur under clear skies and light winds, and is more prevalent in summer. Inversion breakup fumigation occurs under low-wind conditions when a rising morning mixing height caps a stack and “fumigates” the air below.

The basic model equation used in this analysis assumes that the concentrations of emissions within a plume can be characterized by a Gaussian (statistical) distribution around the centerline of the plume. Concentrations at any location downwind of a point source such as a stack can be determined from the following equation:

[26] Although the project is not subject to PSD review, the PSD significance levels may be used as one potential measure of significance under CEQA.

[27] EPA. Guideline on Air Quality Models, 40 CFR Part 51, Appendix W.

[28] ARB. Reference Document for California Statewide Modeling Guideline, April 1989.

$$C(x,y,z,H) = \left(\frac{Q}{2\pi\sigma_y\sigma_z u}\right) * \left(e^{-1/2(y/\sigma_y)^2}\right) * \left[\left\{e^{-1/2(z-H/\sigma_z)^2}\right\} + \left\{e^{-1/2(z+H/\sigma_z)^2}\right\}\right] \quad \text{(Eq. 1)}$$

where

C = pollutant concentration in the air

Q = pollutant emission rate

$\sigma y \sigma z$ = horizontal and vertical dispersion coefficients, respectively, at downwind distance x

u = wind speed at the height of the plume center

x,y,z = variables that define the downwind, crosswind, and vertical distances from the center of the base of the stack in the model's three-dimensional Cartesian coordinate system

H = the height of the plume above the stack base (the sum of the height of the stack and the vertical distance that the plume rises as a result of the momentum and thermal buoyancy of the plume)

Gaussian dispersion models are approved by EPA for regulatory use and are based on conservative assumptions (i.e., the models tend to overpredict actual impacts by assuming steady-state conditions, no pollutant loss [through conservation of mass], no chemical reactions). The EPA models were used to determine if ambient air quality standards will be exceeded, and whether a more accurate and sophisticated modeling procedure will be warranted to make the impact determination. Described in the subsections below are the following:

- Gas turbine screening modeling
- Refined air quality impact analysis
- Specialized modeling analyses
- Results of the ambient air quality modeling analyses
- PSD significance levels

Modeling for the proposed project was performed in accordance with the modeling protocol submitted to the MDAQMD and CEC found in Appendix 3.1E. The modeling procedures used for each type of modeling analysis are described in more detail in the following sections.

Two different EPA guideline models were used for different meteorological conditions in the ambient air quality impact analysis: AERMOD[29] and SCREEN3.

The EPA-approved AERMOD model was used to evaluate impacts in simple, intermediate, and complex terrain. AERMOD is a Gaussian dispersion model capable of assessing impacts from a variety of source types in areas of simple, intermediate, and complex terrain. The model can account for settling and dry deposition of particulates; area, line, and volume source types; downwash effects; and gradual plume rise as a function of downwind distance. The model is capable of estimating concentrations for a wide range of averaging times (from one hour to one year), and was applied with five years of actual meteorological data recorded at the Blythe monitoring station.

The SCREEN3 model was used to evaluate gas turbine and auxiliary boiler impacts under inversion breakup conditions because these are special cases of meteorological conditions. The SCREEN3 model uses a range of meteorological conditions that could occur under inversion breakup. Since the emissions from the emergency engine are small compared to the gas turbine emissions, they are excluded from this single-source model used for the fumigation analysis. The fumigation analysis is discussed in more detail below.

[29] The acronym AERMOD was derived from American Meteorological Society/Environmental Protection Agency Regulatory Model.

The air dispersion modeling was conducted based on guidance presented in the *Guideline on Air Quality Models* (EPA, 2005) and the EPA-approved dispersion model, AERMOD (version 14134), and as described in the modeling protocol that was submitted to the agencies and included in the PTA as Appendix 3.1E (Sierra Research, 2014). Modeling results are provided on compact disc.

Model Selection. The AERMOD model is a steady-state, multiple-source, dispersion model that incorporates hourly meteorological data inputs and local surface characteristics. The AERMOD model is well suited for this assessment based on the ability of the model to handle the various physical characteristics of project emission sources, including point, area, and volume source types. The required emission source data inputs to AERMOD encompass source locations, source elevations, stack heights, stack diameters, stack exit temperatures, stack exit velocities, and pollutant emission rates. The source locations are specified for a Cartesian (x,y) coordinate system where x and y are distances east and north in meters, respectively. The Cartesian coordinate system used for these analyses is the Universal Transverse Mercator Projection (UTM), 1983 North American Datum (NAD 83).

Where noted, the NO_2 1-hour modeling was refined using AERMOD's Ozone Limiting Method (OLM) model option. OLM offers a more realistic approach to calculating concentrations of NO_2 by accounting for the fact that only a portion of the NOx emitted from the gas turbine stacks is in the form of NO_2. The remaining stack gas is released as nitrogen oxide. In the atmosphere, nitrogen oxide chemically reacts with ambient concentrations of ozone to form NO_2. The OLM option calculates NO_2 concentrations based on the ambient ozone concentrations using this principle. The hourly ozone data used for the OLM analysis were collected at the nearby Blythe monitoring station between 2009 and 2013 and preprocessed for use with AERMOD in accordance with the procedures described in the modeling protocol.

Model Options. The following technical options were selected for the AERMOD model:

- Regulatory default control options
- Rural dispersion mode because land use within 3 kms of the project is primarily classified as rural based on the Auer Land Use Procedure (EPA, 2005)
- Receptor elevations and controlling hill heights obtained from AERMAP (Version 11103) output

Meteorological Data. The CEC requires a minimum of one year of meteorological data approved by ARB or the local air pollution control district to be used in the air dispersion modeling analysis. EPA modeling guidance recommends use of a minimum of three years of meteorological data collected at the nearest station to the project site. According to EPA's Guideline on Air Quality Models (EPA, 2005), representativeness of meteorological data used in dispersion modeling depends on (1) the proximity of the meteorological monitoring site to the area under consideration; (2) the complexity of the terrain; (3) the exposure of the meteorological monitoring site; and (4) the period of time during which data are collected.

The Blythe monitoring station is located less than 2 miles west of the proposed project site. There are no complex terrain features between the monitoring site and the project site. The land uses surrounding the monitoring site and the project site are similar. The surface meteorological data collected at the Blythe monitoring station for the period of January 1, 2009, through December 31, 2013, were compiled and preprocessed using the AERMET preprocessor. The surface data have also been coupled with the National Climatic Data Center soundings from the Elko, NV, National Weather Service station (Station #04105). The representativeness of the surface and upper air data is discussed in detail in the modeling protocol in Appendix 3.1E.

The annual and quarterly wind rose plots for the Blythe meteorological station are presented in Appendix 3.1A.

Receptor Grid Spacing. Cartesian coordinate receptor grids were used to provide adequate spatial coverage surrounding the project area for assessing ground-level pollution concentrations, to identify the extent of significant impacts, and to identify maximum impact locations. A 250-meter resolution coarse receptor grid was developed that extended outwards at least 10 km (or more if necessary to establish the significant impact area).

For the full impact analyses, a nested grid was developed to fully represent the maximum impact area(s). The receptor grid was constructed as follows:

- One row of receptors spaced 25 meters apart along the facility's fence line
- Four tiers of receptors spaced 25 meters apart, extending 100 meters from the fence line
- Additional tiers of receptors spaced 100 meters apart, extending from 100 meters to 1,000 meters from the fenceline
- Additional tiers of receptors spaced 250 meters apart, out to at least 10 km from the most distant source modeled, not to exceed 50 km from the project site

Additional refined receptor grids with 25-meter resolution were placed around the maximum first-high or maximum second-high coarse grid impacts and extended out 1,000 meters in all directions. Concentrations within the facility fencelines (BEP and SEP project fencelines) were not calculated. The coarse and refined receptor grids are presented in Appendix 3.1F.

Building Downwash and Good Engineering Practice Assessment. For the analysis of the potential turbine impacts during operation, EPA's BPIP-Prime (Building Profile Input Program – Plume Rise Model Enhancement, Version 04274) was used to calculate the projected building dimensions required for AERMOD evaluation of impacts from building downwash.

Good engineering practice (GEP), as used in the modeling analyses, is the maximum allowed stack height to ensure that emissions from the stack do not result in excessive concentrations of any air pollutant in the immediate vicinity of the source as a result of atmospheric downwash, eddies, or wakes that may be created by the source itself, nearby structures, or nearby terrain obstacles. In addition, the GEP modeling restriction ensures that any required regulatory control measure is not compromised by the effect of that portion of the stack that exceeds the GEP.

EPA's guidance for determining GEP stack height (Hg) (EPA, 1985) is based on the height of a nearby structure(s) measured from the ground-level elevation at the base of the stack (H) and the lesser dimension—height or projected width—of the nearby structure(s) (L) as follows:

$$Hg = H + 1.5L$$

The GEP modeling restriction is the greater of the calculated GEP stack height or 65 meters. Therefore, based on the onsite and offsite building dimensions as input into BPIP-Prime, the calculated GEP height for each exhaust stack is the greater of 65 meters or the calculated height of 75.6 meters. The proposed turbine stack height of 42.67 meters (140 feet) does not exceed GEP stack height.

Ozone Limiting. One-hour NO_2 impacts during proposed project operation were modeled using the Ozone Limiting Method (OLM) (Cole and Summerhays, 1979), implemented through the "OLMGROUP ALL" option in AERMOD (EPA, 2011). AERMOD OLM was used to calculate the NO_2 concentration based on the OLM method and hourly ozone data. Hourly ozone data collected at the Blythe monitoring station during the years 2009-2013 were used in conjunction with OLM to calculate hourly NO_2 concentrations from hourly NOx concentrations.

Part of the NOx in the exhaust is converted to NO_2 during and immediately after combustion. The remaining percentage of the NOx emissions is assumed to be NO. For the gas turbine, the analysis was performed using the following NO_2/NOx ratios recommended by GE:

- 13% during normal operating hours
- 24% during hours in which a startup/shutdown occurs
- 24% during commissioning tests when the SCR system is not fully operational

For the auxiliary boiler, the analysis was performed using the following NO_2/NOx ratios recommended by the auxiliary boiler vendor:

- 29% for operation above 25% rated load (normal operating hours)
- 12.5% for operation below 25% rated load (during hours in which a startup/shutdown occurs)

A NO_2/NOx ratio of 20% was used for the diesel emergency firepump engine.[30]

As the exhaust leaves the stack and mixes with the ambient air, the NO reacts with ambient O_3 to form NO_2 and molecular O_2. The OLM assumes that at any given receptor location, the amount of NO that is converted to NO_2 by this oxidation reaction is proportional to the ambient O_3 concentration. If the O_3 concentration is less than the NO concentration, the amount of NO_2 formed by this reaction is limited. However, if the O_3 concentration is greater than or equal to the NO concentration, all of the NO is assumed to be converted to NO_2.

Annual NO_2 concentrations were calculated using the Ambient Ratio Method (ARM), originally adopted in Supplement C to the Guideline on Air Quality Models (EPA, 1995) with a revision issued by EPA in March 2011 (EPA, 2011). The Guideline allows a nationwide default of 75% for the conversion of NO to NO_2 on an annual basis and the calculation of NO_2/NOx (nitrogen oxide) ratios. This nationwide default conversion factor was used to model annual NO_2 impacts for the proposed project.

3.1.5.2 Construction Impacts Analysis

As previously discussed, the construction activities will occur for approximately 26 months (including 4 months of commissioning) and various stages of construction will overlap throughout this period. To evaluate the overall potential air quality impacts from construction activities, the schedules for each activity were aligned and the maximum daily, monthly, and annual rolling 12-month emissions were developed. A complete summary of emissions during construction is provided in Appendix 3.1C. Because the adjacent BEP will operate during the SEP construction period, the construction impacts modeling analysis contains BEP.

The CEC requires an assessment of the potential ambient air quality impacts of construction activities. Emissions during the construction period were calculated on a maximum hourly, daily, monthly, and annual rolling 12-month basis. Modeled concentrations of NOx, CO, PM_{10}, $PM_{2.5}$, and SOx from onsite construction activities were combined with the ambient background concentrations and compared to the AAQS. The exhaust emissions and mechanically generated fugitive dust emissions (e.g., dust from wheels of a scraper) were modeled as volume sources with heights of 6 meters and 3 meters, respectively. Wind-blown fugitive dust emissions and sources at or near the ground that are at ambient temperature and have negligible vertical velocity were modeled as a ground-level area source with an initial vertical dimension of 1 meter. The maximum 1-hour NO_2 concentrations were modeled using the OLM approach described above, with initial NO_2/NOx ratios of 11% based on CAPCOA recommendations for heavy-duty diesel trucks (CAPCOA, 2011). The results of the construction modeling analysis are summarized in Table 3.1-37. A detailed summary of the assumptions and emission factors used to estimate the emission rates is presented in Appendix 3.1C.

[30] CAPCOA, "Modeling Compliance of The Federal 1-Hour NO_2 NAAQS," October 27, 2011. Appendix C, Default Recommended In-Stack NO2/NOx Ratios for Diesel-fueled IC Engines.

Table 3.1-37. Maximum Modeled Impacts During Project Construction

Pollutant	Averaging Period	Maximum Modeled Concentration During SEP Construction (µg/m³)	Modeled Concentration, BEP[a] (µg/m³)	Combined Concentration, SEP + BEP (µg/m³)[b]
NO_2[c]	1-hour[d]	130.7	4.8	130.7
	Annual	3.6	0.1	3.6
SO_2	1-hour[d]	1.9	0.8	1.9
	3-hour	1.6	0.7	1.6
	24-hour	0.35	0.25	0.44
CO	1-hour	1,009.2	5.1	1,009.2
	8-hour	504.6	2.1	504.6
PM_{10}	24-hour	17.1	0.8	17.2
	Annual	1.3	0.1	1.4
$PM_{2.5}$	24-hour (98th percentile)	2.8	0.8	2.8
	Annual	0.2	0.1	0.3

Notes:

[a] Modeled concentrations at location of maximum modeled concentration during SEP construction.

[b] Combined concentration does not necessarily equal the sum of the individual concentrations because the individual maxima may occur during different hours at the same receptor.

[c] The maximum 1-hour NO_2 concentration is based on OLM, and the maximum annual NO_2 concentration shows an NO_2 to NOx equilibrium ratio of 0.75.

[d] Only highest first high is shown, for comparison with state standard. Federal standard is based on a 3-hour average, and construction period will last for less than 2 years.

3.1.5.3 Operational Impacts

Screening Procedures and Unit Impact Modeling. Turbine emissions and stack parameters, such as flow rate and exit temperature, vary with ambient temperature and operating load. Therefore, to evaluate the worst-case air quality impacts for the new gas turbine, an initial screening-level dispersion modeling analysis was conducted to select the worst-case gas turbine operating mode for each pollutant and averaging period. The modeling used emissions data based on maximum temperature (110°F), annual average temperature (74°F), ISO temperature (59°F), and minimum temperature (39°F), and at nominal minimum and maximum gas turbine operating load points.[31] The determination of the worst-case gas turbine operating condition depends on how changes in emissions rates and stack characteristics (plume rise characteristics) interact with terrain features. For example, lower mass emissions resulting from lower load operation may cause higher concentrations than other operating conditions because lower final plume height may have a greater significant interaction with terrain features.

Initial AERMOD modeling runs were performed using normalized emission rates to assess the zone of impact and relative magnitude of the impacts. For the AERMOD gas turbine screening modeling, the gas turbine was modeled with a unit emission rate of 1 gram per second to obtain maximum 1-hour, 3-hour, 8-hour, 24-hour, and annual average concentration to emission rate (χ/Q in units of $\mu g/m^3$ per g/s) values. These χ/Q values were multiplied by the actual emission rate in grams per second from the gas

[31] Minimum gas turbine load ranges from 40 to 65 percent, depending upon ambient conditions.

turbine to calculate ambient impacts for NO_2, CO, SO_2, and $PM_{10}/PM_{2.5}$ in units of $\mu g/m^3$. Stack parameters used in the screening modeling analysis are shown in Appendix 3.1F.

The results of the screening analysis are shown in Appendix 3.1F, Table 3.1F-2. The stack parameters and emission rates corresponding to the operating case that produced the maximum impacts in the gas turbine screening analysis for each pollutant and averaging period were used in the refined modeling analysis to evaluate air quality impacts.

Refined Air Quality Impact Analysis. In simple, intermediate, and complex terrain, AERMOD was used to estimate proposed project impacts. The AERMOD model was used to calculate 1-hour, 3-hour, 8-hour, 24-hour, and annual average concentrations.

Refined modeling was performed in two phases: coarse grid modeling and fine grid modeling. Preliminary modeling was performed with the coarse grid to locate the areas of maximum concentration; fine grids were used to refine the location of the maximum concentrations.

The stack parameters and emission rates used to model combined impacts from all new equipment at the facility are shown in Appendix 3.1F. The model receptor grids were derived from U.S. Geological Survey (USGS) 10-meter Digitized Elevation Map (DEM) data. CEC guidance was used to locate receptors. Offsite receptor locations were discussed above in Section 3.1.5.1. Concentrations within the facility fenceline were not calculated.[32]

Terrain features were taken from the USGS National Elevation Dataset (NED). These terrain data are part of the modeling DVD submitted to the MDAQMD and CEC as part of the PTA for the proposed project.

Commissioning Impacts Analysis. During the initial commissioning period, the turbine will initially be operated at various load rates without the benefit of the emission control systems to ensure proper operation. In addition, steam from the auxiliary boiler will be needed during gas turbine commissioning activities, so the auxiliary boiler will be commissioned first. The commissioning impact analysis was made conservatively overpredictive by assuming for the dispersion modeling analysis that simultaneous commissioning of the two units (boiler and turbine) will occur. It was also assumed that the maximum impact will occur if both units were simultaneously undergoing commissioning activities while the gas turbine exhibited its highest unabated emissions (e.g., steam blows for NOx and first synchronization for CO). Therefore, the AERMOD coarse and refined grid dispersion analyses were conducted using the parameters and emission rates presented in Table 3.1-24. It is assumed that the maximum modeled impacts during commissioning will occur under the gas turbine operating conditions that are least favorable for dispersion. These conditions are expected to occur under low-load conditions.

Air quality impacts during the commissioning period were determined using the emission rates in Table 3.1B-7. One-hour average NO_2 impacts during commissioning were modeled using AERMOD with OLM and concurrent Blythe ozone data. Modeled impacts are shown in Table 3.1-38. SOx and $PM_{10}/PM_{2.5}$ emissions during the commissioning of the gas turbine are not expected to be higher than during normal operation of these units.

As discussed above, the existing BEP was also modeled to ensure that impacts of those generating units were reflected in background concentrations. Therefore, the commissioning modeling analysis analyzed the combined impacts for the simultaneous commissioning of SEP and the continued operation of the existing BEP. Emissions from the existing BEP gas turbines were adjusted for this analysis to reflect the proposed new hourly and annual limits discussed in Section 3.1.4.8.

[32] Because BEP and SEP have a common owner and are adjacent sites, locations within either the BEP or SEP facility fencelines were not considered ambient air.

Table 3.1-38. Maximum Modeled Impacts for the Commissioning Period

Pollutant	Averaging Period	Modeled Impact, SEP, µg/m³	Monitored Background Concentration, µg/m³	Modeled Impact, BEP, µg/m³	Total Impact, µg/m³	Most Stringent Standard, µg/m³	Percent of Most Stringent Standard
NO_2	1 hour[a]	178.1	77.1	12.73	231.9	339	68%
CO	1 hour	4,265.7	4,000	26.70	8,288	23,000	36%
	8 hours	960.9	1,698	7.15	2,661	10,000	27%

[a] Based on AERMOD-OLM.

The analysis excluded a comparison to the federal 1-hour NO_2 standard because the maximum hourly unabated emission rates that result in the highest predicted concentrations are expected to occur only once in the life of the project and that one time will be less than 120 hours. Furthermore, the federal 1-hour NO_2 standard is based on a 98th percentile statistical standard, so it is unlikely that simultaneous one-time unabated emissions for the gas turbine and auxiliary boiler will occur on the days with the highest background NO_2 and ozone concentrations.[33]

Fumigation Impacts. Fumigation occurs when a stable layer of air lies a short distance above the release point of a plume and unstable air lies below. Under these conditions, an exhaust plume may cause high ground-level pollutant concentrations because the plume is unable to rise upwards normally because of the stable layer capping it from above, and be drawn to the ground by turbulence within the unstable layer. Although fumigation conditions rarely last as long as one hour, relatively high ground-level concentrations may be reached during that time. For this analysis, fumigation was assumed to occur for up to 90 minutes, as recommended by EPA guidance.

The SCREEN3 model was used to evaluate maximum ground-level concentrations for short-term averaging periods (24 hours or less). Guidance from the EPA (EPA, 1992) was followed in evaluating fumigation impacts. This analysis is shown in more detail in Appendix 3.1F. Fumigation modeling results are summarized in Table 3.1-39.

Impacts During Gas Turbine Startup. Facility impacts were also evaluated during startup of the new gas turbine to evaluate short-term impacts under worst-case startup emissions. Gas turbine exhaust parameters used to characterize gas turbine exhaust during startup and the CO and NO_x emission rates are shown in Appendix 3.1F. Impacts during gas turbine startup are shown in Table 3.1-39.

Air Quality Modeling Results. The 1-hour NOx and CO emission rates were based on the conservative assumption that the gas turbine will be in cold startup mode and the auxiliary boiler will be operational within the same hour. The emission rates for 8-hour and 24-hour averaging periods was based on the assumption that the gas turbine and auxiliary boiler will both undergo a cold startup and a shutdown during the period, and will operate for the remaining hours at 100 percent load. The hourly emission rates for 24-hour PM_{10} and $PM_{2.5}$ were based on operation at 100 percent load.

As discussed previously, annualized hourly emission rates for the annual impact assessment were based on 7,000 hours per year of plant operation, which encompasses 5,500 hours per year of turbine operation without duct firing and 1,500 hours per year with duct firing; 400 hours in startup/shutdown mode (50 cold starts, 150 warm starts, and 200 shutdowns); 7,000 hours per year of auxiliary boiler

[33] Although EPA is not the reviewing authority for this permit, we note that excluding this short-term, one-time emissions scenario is consistent with EPA's March 1, 2011, guidance (EPA, 2011): "When EPA is the reviewing authority for a permit… we will consider it acceptable to limit the emission scenarios included in the modeling compliance demonstration for the 1-hour NO_2 NAAQS to those emissions that are continuous enough or frequent enough to contribute significantly to the annual distribution of daily maximum 1-hour concentrations."

operation; 8,760 hours per year of cooling tower operation; and 200 hours per year of emergency fire pump engine operation.

The facility layout for modeling is shown in Appendix 3.1F.

Table 3.1-39 summarizes the maximum impacts during the operation of the proposed project, calculated from the refined, startup/shutdown, and fumigation modeling analyses described above. These impacts reflect only operation of the proposed new equipment.

The maximum impacts for normal facility operating conditions (with fire pump and auxiliary boiler emission) for NO_2 (1-hour and annual averages), CO (1-hour and 8-hour averages), SO_2 (annual averages), and $PM_{10}/PM_{2.5}$ (24-hour and annual averages) occurred in the immediate vicinity of the facility either on the southern fenceline or within the downwash grid in the 30-meter-spaced receptor areas. Maximum impacts for start-up/shutdown conditions (1-hour NO_2 and CO impacts and 8-hour CO impacts) and 1-hour and 3-hour SO_2 impacts during normal facility operation occurred in elevated terrain about 8.5 km west-northwest of the project while maximum 24-hour SO_2 impacts occurred about 760 meters south of the project.

Table 3.1-39. Air Quality Modeling Results

		Modeled Maximum Concentrations (µg/m³)		
Pollutant	**Averaging Time**	**Normal Operation AERMOD**	**Startup/Shutdown AERMOD**	**Fumigation SCREEN3**
Gas Turbine				
NO_2[g]	1-hour	11.55	101.58	3.87
	98th percentile	6.00	53.74	-
	Annual	0.17	a	c
SO_2	1-hour	2.89	b	0.73
	3-hour	1.49	b	0.60
	24-hour	0.39	b	0.25
	Annual	0.02	b	c
CO	1-hour	9.23	117.89	2.36
	8-hour	7.90	a	1.42
$PM_{2.5}/PM_{10}$	24-hour	1.14	b	0.56
	Annual	0.06	b	c
Auxiliary Boiler				
NO_2	1-hour	1.08	8.37	0.88
	98th percentile	0.99	7.47	-
	Annual	0.05	a	c
SO_2	1-hour	0.23	b	0.14
	3-hour	0.18	b	0.12
	24-hour	0.12	b	0.05
	Annual	0.004	b	c
CO	1-hour	6.21	63.04	3.84
	8-hour	9.18	a	2.38
$PM_{2.5}/PM_{10}$	24-hour	0.54	b	0.25
	Annual	0.04	b	c
Emergency Diesel Fire Pump Engine				
NO_2	1-hour	59.3	d	e
	98th percentile	51.4	d	-
	Annual	0.04	d	c,e

Table 3.1-39. Air Quality Modeling Results

Pollutant	Averaging Time	Modeled Maximum Concentrations (µg/m³) Normal Operation AERMOD	Startup/Shutdown AERMOD	Fumigation SCREEN3
SO_2	1-hour	0.1	d	e
	3-hour	0.02	d	e
	24-hour	0.005	d	e
	Annual	<0.001	d	c,e
CO	1-hour	15.8	d	e
	8-hour	0.5	d	e
$PM_{2.5}/PM_{10}$	24-hour	0.02	d	0.3
	Annual	0.001	d	c
Cooling Tower				
$PM_{2.5}/PM_{10}$	24-hour	4.9	d	e
	Annual	0.4	d	c,e
Combined Impacts, All SEP Equipment				
NO_2[g]	1-hour	59.3	101.6	3.9
	98th percentile	51.4	53.8	-
	Annual	0.2	a	c
SO_2	1-hour	2.9	b	0.7
	3-hour	1.5	b	0.6
	24-hour	0.4	b	0.2
	Annual	0.02	b	c
CO	1-hour	15.8	117.9	2.4
	8-hour	9.2	a	1.4
$PM_{2.5}/PM_{10}$ f	24-hour	5.3	b	0.6
	Annual	0.5	b	c

[a] Not applicable, because startup/shutdown emissions are shown in the modeling for this averaging period.

[b] Not applicable, because emissions are not elevated above normal operation levels during startups/shutdowns.

[c] Not applicable, because inversion breakup is a short-term phenomenon and as such is evaluated only for short-term averaging periods.

[d] Not applicable, because engine emissions are the same during gas turbine startups/shutdowns.

[e] Not applicable, this type of modeling is not performed for small combustion sources with relatively short stacks.

[f] Encompasses cooling tower.

[g] 1-hour NO_2 modeled using OLM. Annual NO_2 modeled using ARM.

3.1.5.4 Modeling Results Compared to the Ambient Air Quality Standards

To determine a project's air quality impacts, the modeled concentrations are added to the maximum background ambient air concentrations and then compared to the applicable ambient air quality standards. As discussed above, the existing BEP generating units were modeled along with impacts from the proposed SEP and total impacts were then added to the monitored background concentrations from Table 3.1-11 to evaluate total impacts.

Construction Impacts Analysis. The results presented in Table 3.1-40 indicate that the maximum NO_2, CO and SOx construction impacts combined with the background concentrations will be below the AAQS

for each averaging period.[34] For particulate, the annual and 24-hour PM_{10} background concentrations exceed the state AAQS without adding the modeled concentrations. As a result, the predicted impacts will also be greater than the AAQS. Based on the modeling analysis, fugitive dust is a significant contribution to the predicted concentrations but the maximum PM_{10} and $PM_{2.5}$ concentrations will remain near the property boundary. The implementation of the construction mitigation measures presented in Section 3.1.8.1 are expected to reduce the offsite construction air quality impacts to less-than-significant levels.

Table 3.1-40. Maximum Modeled Impacts from Construction and the Ambient Air Quality Standards

Pollutant	Averaging Period	Maximum Modeled Concentration[a] (µg/m³)	Background Concentration[b] (µg/m³)	Total Predicted Concentration (µg/m³)	State Standard (µg/m³)	Federal Standard (µg/m³)
NO_2	1-hour[c]	130.7	77.1	196.2	339	—
	Annual	3.6	13.2	16.8	57	100
SO_2	1-hour[c]	1.9	22.9	24.8	655	—
	3-hour	1.6	22.6	24.2	—	1,300
	24-hour	0.4	2.6	3.0	105	365
CO	1-hour	1,009.2	4,000	5,009.2	23,000	40,000
	8-hour	504.6	1,698	2,202.6	10,000	10,000
PM_{10}	24-hour	17.2	127	144.2	50	150
	Annual	1.4	22.1	23.5	20	—
$PM_{2.5}$	24-hour (98th percentile)	2.8	13.8	16.6	—	35
	Annual	0.3	6.5	6.8	12	15

[a] Includes BEP. See Table 3.1-37.

[b] Background concentrations were the highest concentrations monitored between 2012 and 2014. See Table 3.1-11.

[b] The maximum 1-hour NO_2 concentration is based on OLM, and the maximum annual NO_2 concentration shows an NO_2 to NOx equilibrium ratio of 0.75.

[c] Only highest first high is shown, for comparison with state standard. Federal standard is based on a 3-hour average, and construction period will last for less than 2 years.

Operation Impacts Analysis. The highest modeled concentrations were used to demonstrate compliance with the AAQS. Table 3.1-41 presents a comparison of the maximum operational impacts to the AAQS. This assessment contains modeled impacts from the existing BEP, which is likely to have localized impacts that are not captured in the monitored background data. The NO_2, CO, SO_2, and $PM_{2.5}$ concentrations combined with the background concentrations do not exceed the AAQS. Therefore, the proposed project will not cause or contribute to the violation of a standard, and the NO_2, CO, SO_2, and $PM_{2.5}$ impacts from operation will be less than significant.

For PM_{10}, the background concentrations exceed the AAQS without the proposed project, with the exception of the federal 24-hour standard. As a result, the predicted project impact plus background also exceeds the state PM_{10} standards and the operation of the proposed project could further contribute to an existing violation of the state standards absent mitigation. As discussed in Section 3.1.8.2, project emissions will be fully offset consistent with MDAQMD Rule 1303. Therefore, the PM_{10} impacts from project operation will be less than significant.

[34] Impacts during the SEP construction period reflect operation of the BEP, as the BEP is expected to be operating while SEP is under construction.

Table 3.1-41. Operation Impacts Analysis—Maximum Modeled Impacts Compared to the Ambient Air Quality Standards

Pollutant	Averaging Time	Maximum Modeled Concentration (µg/m³)[a]	Modeled Impact, BEP (µg/m³)	Background Concentration (µg/m³)[b]	Total Combined Predicted Concentration (µg/m³)	State Standard (µg/m³)	Federal Standard (µg/m³)
NO_2[c]	1-hour	101.6	21.4	77.1	167	339	—
	Federal 1-hour[d]	53.8	11.1	77.1	115	—	188
	annual	0.2	0.2	13.2	14	57	100
SO_2	1-hour	2.9	4.1	22.9	30	655	—
	Federal 1-hour[e]	2.9	4.1	13	20	—	196
	3-hour	1.5	1.9	22.6	26	—	1,300
	24-hour	0.4	0.64	2.6	3.4	105	365
CO	1-hour	117.9	26.7	4,000	4,141	23,000	40,000
	8-hour	9.2	7.2	1,698	1,711	10,000	10,000
PM_{10}	24-hour	5.3	2.8	127	132	50	150
	Annual	0.5	0.4	22.1	23	20	—
$PM_{2.5}$	24-hour[d]	5.3	2.8	13.8	19	—	35
	Annual	0.5	0.4	6.5	7.2	12	15

[a] SEP only.

[b] Background concentrations were the highest concentrations monitored during 2011--2013.

[c] The maximum 1-hour NO_2 concentration is modeled using AERMOD OLM, and the maximum annual NO_2 concentration uses the ambient ratio method (ARM) with the default NO_2 to NOx equilibrium ratio of 0.75.

[d] Total predicted concentrations for the federal 1-hour NO_2 standard and 24-hour $PM_{2.5}$ standard are the respective maximum modeled concentrations combined with the three-year average of 98th percentile background concentrations.

[e] Total predicted concentrations for the federal 1-hour SO_2 standard is the maximum modeled concentrations combined with the 3-year average of 99th percentile background concentrations.

PSD Significance Levels. The PSD program was established to allow emission increases that do not result in significant deterioration of ambient air quality in areas where criteria pollutants have not exceeded the NAAQS. Although the proposed project will not be subject to PSD review, the PSD significant impact levels (SILS) can be used as one measure of whether the project's impacts are significant.

The comparison in Table 3.1-42 shows that project impacts are below the PSD SILs for all pollutants and averaging periods except 1-hour NO_2 and 24-hour and annual $PM_{2.5}$. As discussed in Section 3.1.8.2, project emissions for these pollutants will be fully offset consistent with MDAQMD Rule 1303. Therefore, the NO_2 and $PM_{2.5}$ impacts from project operation will be less than significant.

Table 3.1-42. Comparison of Maximum Modeled Impacts and PSD Significant Impact Levels, SEP

Pollutant	Averaging Time	Significant Impact Level, µg/m³	Maximum Modeled Concentrations for SEP, µg/m³ [a]	Exceed Significant Impact Level?
NO_2	1-Hour	7.5[b]	101.6[c]	Yes
	Annual	1	0.2	No
SO_2	1-Hour	7.8	2.9	No
	3-Hour	25	2	No
	24-Hour	5	0.4	No
	Annual	1	0.02	No
CO	1-Hour	2000	118	No
	8-Hour	500	9	No

Table 3.1-42. Comparison of Maximum Modeled Impacts and PSD Significant Impact Levels, SEP

Pollutant	Averaging Time	Significant Impact Level, µg/m³	Maximum Modeled Concentrations for SEP, µg/m³ [a]	Exceed Significant Impact Level?
PM_{10}	24-Hour	5	5	No
	Annual	1	0.5	No
$PM_{2.5}$	24-Hour	1.2[d]	5.3	Yes
	Annual	0.3[d]	0.5	Yes

[a] Modeled concentrations have been rounded to the same number of significant figures as the SIL.

[b] EPA has not yet defined significance levels (SILs) for one-hour NO_2 and SO_2 impacts. However, EPA has suggested that, until SILs have been promulgated, interim values of 4 ppb (7.5 µg/m³) for NO_2 and 3 ppb (7.8 µg/m³) for SO_2 may be used (USEPA (2010b); USEPA (2010c)). These values will be used in this analysis as interim SILs.

[c] Concentration occurs during gas turbine startup; encompasses operation of the emergency diesel fire pump engine.

[d] While EPA sought and the U.S. Court of Appeals for the District of Columbia Circuit recently granted remand and vacatur of these SILs as they apply for purposes of avoiding a cumulative impacts analysis under federal PSD requirements (40 CFR § 51.166(k)(2) and § 52.21(k)(2)), EPA has retained these SILs for purposes of demonstrating whether a source locating in an attainment/unclassifiable area will be deemed to cause or contribute to a violation in a downwind nonattainment area. See Sierra Club v. EPA, No. 10-1413 (D.C. Cir. 2013), slip op. 9. Accordingly, application of these SILs for purposes of satisfying the District's requirement to ensure that the construction and operation of new or modified sources does not interfere with the attainment and maintenance of ambient air quality standard (MDAQMD Rule 1300) may be appropriate.

3.1.5.5 Screening Health Risk Assessment

A screening health risk assessment (SHRA) was conducted to determine expected impacts on public health of the noncriteria pollutant emissions from operation of the project. The potential health risks and a detailed discussion of the approach used for the screening level risk assessment, including the detailed noncriteria-pollutant calculations, are provided in Section 3.8, Public Health.

3.1.6 Consistency with Laws, Ordinances, Regulations, and Standards

This section considers consistency separately for federal, state, and local requirements.

3.1.6.1 Consistency with Federal Requirements

The MDAQMD has been delegated authority by the EPA to implement and enforce most federal requirements that may be applicable to the proposed project, including new source performance standards and new source review for nonattainment pollutants. The proposed project will also be required to comply with the Federal Acid Rain requirements (Title IV). Because the MDAQMD is delegated authority to implement Title IV through its Title V permit program, the Title V Federal Operating Permit that will be issued as a result of the proposed project will contain the necessary requirements for compliance with the Title IV Acid Rain provisions. In addition, the MDAQMD is in the processing of obtaining delegation from EPA to implement the PSD program. Until that delegation is in place, EPA Region 9 is the PSD permitting authority. As discussed below, the project does not trigger PSD review.

PSD Program. EPA has promulgated PSD regulations for areas that are in compliance with national ambient air quality standards (40 CFR 52.21). The PSD program allows new sources of air pollution to be constructed, or existing sources to be modified, while preserving the existing ambient air quality levels, protecting public health and welfare, and protecting Class I areas (e.g., specific national parks and wilderness areas). There are five principal areas of the PSD program: (1) Applicability; (2) Best Available Control Technology; (3) Preconstruction Monitoring; (4) Increments Analysis; and (5) Air Quality Impact Analysis. Although issuance of the PSD permit will be the responsibility of either the MDAQMD or EPA

Region 9 (depending on the timing for PSD delegation to the MDAQMD), the protection of Class I areas is still the responsibility of the Federal Land Managers (FLMs).

Applicability. The federal PSD requirements apply on a pollutant-specific basis to any project that is a new major stationary source or a major modification to an existing stationary source. (These terms are defined in federal regulations.) (40 CFR 52.21) Since the SEP is owned by the same parent company that owns and operates BEP, the projects are on contiguous properties and have the same SIC code, they are considered part of the same stationary source. As shown in Table 3.1-43, existing BEP is not an existing major source and SEP emissions are below major source thresholds; SEP is not a major modification to an existing major source, and SEP is not a major source itself. Consequently, the SEP is not subject to PSD review.

Table 3.1-43. Net Emission Change and PSD Applicability

Pollutant	SEP Potential to Emit (tpy)	BEP Potential to Emit (tpy)	PSD Major Source Thresholds (tpy)	Major Source/Major Modification?
NOx	85.6	97	100	No
SO_2	8.8	24	100	No
VOC	24.2	24	100	No
CO	78.0	97	100	No
PM_{10}	40.1	97[a]	100	No
$PM_{2.5}$	40.1	97[a]	100	No

Note:

[a] $PM_{10}/PM_{2.5}$ PTEs shown do not reflect the reductions proposed as part of this project.

Title V Operating Permits. MDAQMD Regulation XII implements the Title V federal operating permit program. An application for a Title V permit for the new equipment will be submitted prior to the initial operation of the new equipment in accordance with the requirements of Rule 1205 for Title V sources.

40 CFR Part 60, Subpart KKKK (Standards of Performance for Stationary Combustion Turbines). This new source performance standard applies to gas turbines with heat inputs in excess of 1 MMBtu/hr that commence construction after February 18, 2005, and therefore is applicable to the SEP CTG. Subpart KKKK limits NOx and SO_2 emissions from a new gas turbine with a heat input greater than 850 MMBtu/hr to limits of 15 ppmv @ 15% O_2 (ppmc) for NOx and 0.90 lbs/MW-hr for SOx. As shown in Table 3.1-44, the proposed CTG at SEP will comply with these limits.

Compliance with the NSPS limits must be demonstrated through an initial performance test. Because the SEP CTG will be equipped with a NOx continuous emissions monitoring system (CEMS) that will comply with NSPS requirements, the initial performance test will be met as part of the initial NOx CEMS certification testing process and ongoing annual performance testing will not be required under the NSPS.

Table 3.1-44. Compliance with 40 CFR 60 Subpart KKKK

	Project Emission Levels			
Pollutant	ppmc	lb/hr	lb/MW-hr	Subpart KKKK Limits
NOx	2.0	N/A	N/A	15 ppmc
SOx	N/A	4.9	0.0090	0.90 lb/MW-hr

40 CFR Part 60, Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines). The new emergency diesel fire pump engine will be subject to this NSPS. For emergency fire pump engines in this size range, the NSPS requires manufacturers to provide engines that are certified to meet the NSPS emission standards (depending on the year an engine is manufactured). The SEP will comply with the emission limitations of the NSPS by purchasing an engine certified to EPA Tier 3 standards for nonroad diesel engines.

The NSPS also requires engines in this size range to use fuel with a sulfur content not to exceed 15 ppm. The new emergency diesel fire pump engine will comply with this requirement by using only ARB diesel fuel.

National Emission Standards for Hazardous Air Pollutants (NESHAP). This program establishes national emission standards to limit emissions of hazardous air pollutants (HAPs, or air pollutants identified by EPA as causing or contributing to the adverse health effects of air pollution, but for which NAAQS have not been established) from major sources of HAPs in specific source categories. These standards are implemented at the local level with federal oversight. Only the NESHAPs for gas turbines (40 CFR 63 Subpart YYYY), which limit formaldehyde emissions from a CTG, are potentially applicable to the proposed project. As shown in Section 3.1.4.5, BEP and SEP will be a major source of HAPs (i.e., 10 tpy of one HAP or 25 tpy of all HAPs). However, as noted in Section 3.1.3.1, in 2004, EPA stayed the effectiveness of the NESHAP for new lean premix and diffusion flame gas-fired gas turbines. Therefore, the NESHAP does not apply to the proposed project.

3.1.6.2 Consistency with State Requirements

As discussed in Section 3.1.3.2, state law established local air pollution control districts and air quality management districts with the principal responsibility for regulating emissions from stationary sources. The proposed project is under the local jurisdiction of the MDAQMD; therefore, compliance with District regulations will assure compliance with state air quality requirements.

California Clean Air Act. AB 2595, the California Clean Air Act (CAA), was enacted by the California Legislature and became law in January 1989. The CAA requires the local air pollution control districts to attain and maintain both the federal and state ambient air quality standards at the "earliest practicable date." The CAA contains several milestones for local districts and ARB. MDAQMD was required to submit an air quality plan to ARB, with updates as necessary, defining the program for meeting the required emission reduction milestones in the Mojave Desert.

Air quality plans must demonstrate attainment of the state ambient air quality standards and must result in a five percent annual reduction in emissions of nonattainment pollutants (ozone, PM_{10}, $PM_{2.5}$, and associated precursors) in a given district (H&SC §40914). A local district may adopt additional stationary source control measures or transportation control measures, revise existing source-specific or new source review rules, or expand its vehicle inspection and maintenance program (H&SC §40918) as part of the plan. District air quality plans specify the development and adoption of more stringent regulations to achieve the requirements of the Act. The applicable regulations that will apply to SEP are shown in the discussion of District prohibitory rules in Section 3.1.3.3.

Greenhouse Gas Initiatives. In 2006, California enacted the California Global Warming Solutions Act of 2006 (AB 32). It requires ARB to adopt standards that will reduce statewide GHG emissions to statewide GHG emissions levels in 1990, with such reductions to be achieved by 2020. To achieve this, ARB has a mandate to define the 1990 emissions level and achieve the maximum technologically feasible and cost-effective GHG emission reductions.

ARB adopted early action GHG reduction measures in October 2007 and established statewide emissions caps by economic "sectors" in 2008. In December 2008, ARB adopted a scoping plan that identifies how emission reductions will be achieved from significant sources of GHG via regulations, market mechanisms, and other actions. ARB staff has developed regulations to implement its plan.

Among the applicable GHG requirements is the submittal of annual GHG emission reports to ARB for subject facilities, which must contain the project's emission rates of greenhouse gases. The project will be required to track and report GHG emissions from the gas turbine and auxiliary equipment, fuels and materials handling processes, and delivery and storage systems, as well as from all on-site secondary emission sources. The facility will also be required to participate in the cap and trade program.

SB 1368, also enacted in 2006, and regulations adopted by the CEC and the Public Utilities Commission pursuant to the bill, prohibits utilities from entering into long-term commitments with any baseload facilities that exceed the Emission Performance Standard of 0.50 metric tons of CO_2 per MW-hour (1,100 pounds CO_2/MWh). Specifically, the Emission Performance Standard (EPS) applies to base load power from new power plants, new investments in existing power plants, and new or renewed contracts with terms of five years or more, including contracts with power plants located outside of California. Compliance with the EPS is discussed further below.

GHG Emissions During Project Construction. Construction of the proposed power plant will involve the use of fuel-consuming equipment for construction and transportation and will produce greenhouse gas emissions. GHG emissions during construction are provided in Appendix 3.1C.

These small GHG emissions increases from construction activities will not be significant. The construction period is about 26 months long (including 4 months of commissioning), and the emissions will be intermittent during that period. Additionally, the mitigation measures proposed by the project owner (such as limiting idling times) will minimize GHG emissions during the construction phase of the project.

GHG Emissions During Project Operation. In the absence of established thresholds of significance or methodologies for assessing impacts, this analysis of GHG emission impacts consists of quantifying project-related GHG emissions, determining their significance in comparison to the goals of AB 32, and discussing the potential impacts of climate change within the state as well as strategies for minimizing those impacts.

As the CEC's 2007 Integrated Energy Policy Report (CEC, 2007) noted:

> New natural gas-fueled electricity generation technologies offer efficiency, environmental, and other benefits to California, specifically by reducing the amount of natural gas used—and with less natural gas burned, fewer greenhouse gas emissions. Older combustion and steam turbines use outdated technology that makes them less fuel- and cost-efficient than newer, cleaner plants… The 2003 and 2005 IEPRs noted that the state could help reduce natural gas consumption for electric generation by taking steps to retire older, less efficient natural gas power plants and replace or repower them with new, more efficient power plants. (p. 184)

The California Public Utilities Commission (CPUC) and CEC joint recommendations to ARB state that renewable integration will be a "cornerstone" of emission reductions.[35] Similarly, the ARB AB 32 scoping plan anticipates the implementation of a 33% Renewable Portfolio Standard (RPS) and contains the RPS as an emission reduction measure.[36] The current RPS requires all the state's energy service providers meet 33 percent of retail sales with renewable energy by 2020. Recently, the Governor has announced plans to seek an increase in the state's RPS target to 50% by 2030.

Most renewable energy facilities, such as those using wind or solar energy, are "intermittent resources," meaning these resources are not available to generate in all hours and thus have limited operating

[35] See: CPUC and CEC, D.06-04-009, CEC-100-2008-007-F, *Final Opinion and Recommendations on Greenhouse Gas Regulatory Strategies* Joint Recommendations to ARB (October 2008) p.1, available at: http://www.energy.ca.gov/2008publications/CEC-100-2008-007/CEC-100-2008-007-F.PDF

[36] See: California Air Resources Board, Final AB 32 Scoping Plan (Dec. 2008), available at: http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm

capacity. For example, intermittent resources can be limited by meteorological conditions on an hourly, daily, and seasonal basis. Further, most renewable resources have no ability to provide regulation—the ability to ramp up and down quickly at the system operator's direction to ensure electric system reliability. In addition, the availability of intermittent resources is often unrelated to the load profile they serve. For example, some photovoltaic resources reach peak production around 12:00 noon while the demand on California's electric system typically peaks between 5:00 p.m. and 7:00 p.m.

SEP can be operated without the limitations affecting intermittent renewable resources. The SEP gas turbine will be an efficient, fast-starting, flexible generating resource that will allow SEP to support generation from intermittent renewable resources and thus integrate renewable resources into California's generating system without affecting electric system reliability.

Much of the electricity generated by SEP is expected to be used to replace electricity currently generated by coal plants in the southwest, as coal contracts expire and cannot be renewed. As a highly efficient fast starting, and dispatchable generating resource, SEP may also replace generation from older, less efficient gas plants. SEP will also help provide "firming" sources for existing and future intermittent renewable resources in support of RPS and GHG goals. "Firming" involves the use of fast-starting, flexible generation that is always available under all operating conditions to ramp up or ramp down, as necessary, to balance load and generation. Firming power is the cornerstone of system reliability. Thus, in the context of the California Environmental Quality Act, the CEC's Integrated Energy Policy Report, and other state GHG policy documents, the SEP will not be expected to cause a significant cumulative impact. Instead, SEP supports the State's strategy to reduce overall fuel use and GHG emissions. Furthermore, even though it is possible to quantify how many gross GHG emissions are attributable to a project, it is difficult to determine whether this will result in a net increase of these emissions, and, if so, by how much. Therefore, it would be speculative to conclude that any given project results in a cumulatively significant adverse impact from GHG emissions.

The GHG CEQA Guidance encompasses the following elements:

- Quantification of GHG emissions
- Determination of whether the project may increase or decrease GHG emissions as compared to existing environmental setting
- Determination of whether the project emissions exceed a threshold of significance determined by the lead agency
- The extent to which the project complies with state, regional, or local plans for reduction or mitigation of GHGs
- Mitigation measures

Certain GHG reduction strategies will require increases in natural gas consumption; for example, some fraction of electric generation from coal-fired power plants will need to be replaced by natural gas fired generation. As the 2007 Integrated Energy Policy Report (CEC, 2007) and Presiding Member's Proposed Decision for the Avenal Energy Project (CEC, March 2009a) acknowledged, "new gas-fired power plants are more efficient than older power plants, and they displace these older facilities in the dispatch order." The CEC's 2009 Framework report (CEC, May 2009b) further discussed the role of new gas-fired power plants in displacing GHG emissions, and furthering the State's efforts to reduce GHG emissions. The 2009 Framework report concludes that as California expands renewable energy generation to achieve its GHG emissions reduction goals, it cannot simply retire natural-gas fired power plants: rather, new natural-gas fired power plants may be needed. Net GHG emissions for the integrated electric system will decline when new gas-fired power plants are added that (1) serve load growth or capacity needs more efficiently than the existing fleet; (2) improve the overall efficiency of the electric system; and/or (3) permit increased penetration of renewable generation (CEC, May 2009). Because of its

location and operational characteristics, SEP will contribute to the reduction of GHG emissions because it will achieve all of these goals.

In the 2009 CEC Siting Committee Report (CEC 2009a), the Committee established a three-part test to ensure that new natural gas fired power plants approved by the CEC will support the goals and policies of AB 32 and the related parts of California's GHG framework. The elements of this test are listed below.

(1) The project must not increase the overall system heat rate for natural gas plants.

(2) The project must not interfere with generation from existing renewable facilities nor with the integration of new renewable generation.

(3) Taking into account the factors listed in (1) and (2), the project must reduce system-wide GHG emissions and support the goals and policies of AB 32.

As a fast-starting, fast-ramping and highly efficient facility, SEP will meet all three of these criteria. Because electricity generation and demand must be in balance at all times, the energy provided by a new generating resource must simultaneously displace the same amount of energy from an existing resource. The electricity from the new generating resource will only be dispatched if it were less expensive to operate, which will occur when the new generating resource is more efficient than the existing resource. By definition, then the new resource will produce fewer GHG emissions than the resource it is replacing.[37]

Table 3.1-45 summarizes the thermal efficiency of many of the natural gas-fired combined cycle projects built in California over the past 15 years. The proposed SEP has the best thermal efficiency of any of the projects listed here.

The Rapid Response gas turbine will be capable of starting up and reaching full gas turbine load (330 MW) within 30 minutes. The SEP gas turbine will also have a very high ramp rate (up to 15 percent per minute, or 50 MW/minute).

The proposed SEP gas turbine will have an overall gross heat rate of approximately 6583 Btu/kWh (HHV, gross), which leads to an estimated GHG emission rate of 0.35 MT CO2/MWh (gross). This emission rate is well below the EPS of 0.50 MT CO2/MWh. The project's capability for fast response will provide firming capability that will support the integration of new renewable generation. By displacing older, less efficient units, the project will reduce system-wide GHG emissions.

3.1.6.3 Consistency with Local Requirements: MDAQMD

The MDAQMD has been delegated responsibility for implementing local, state, and federal air quality regulations in the Mojave Desert Air Basin. The proposed project is subject to District regulations that apply to new stationary sources, to the prohibitory regulations that specify emission standards for individual equipment categories, and to the requirements for evaluation of impacts from noncriteria pollutants. Facility compliance with applicable District requirements is evaluated below.

Table 3.1-45. Comparison of Heat Rates for Combined Cycle Plants in California

Plant Name	Capacity (MW)[a]	Year Licensed[a]	Heat Rate (Btu/kWh)[b]
Los Medanos Energy Center	555	1999	7,484
Sutter Energy Center	540	1999	7,600
Delta Energy Center	887	2000	7,463

[37] CEC, 2015, Appendix AQ-1.

Table 3.1-45. Comparison of Heat Rates for Combined Cycle Plants in California

Plant Name	Capacity (MW)[a]	Year Licensed[a]	Heat Rate (Btu/kWh)[b]
Moss Landing Power Plant	1,060	2000	7,252
Pastoria Energy Facility	750	2000	7,039
Blythe Energy Project	520	2001	7,089
Gateway Generating Station	530	2001	7,247
Metcalf Energy Center	600	2001	7,419
Otay Mesa Energy Center	590	2001	7,217
Inland Empire Energy Center	800	2003	6,967
Palomar Energy Center	546	2004	6,992
Walnut Energy Center	250	2004	7,796
Russell City	600	2007	7,215
Colusa Generation Station	660	2008	7,166
GWF Tracy Combined Cycle	145	2010	8,056[c]
NCPA Lodi Energy Center	255	2010	7,059
NRG El Segundo Units 5, 6, 7 and 8	560	2010	7,331[c]
Oakley Generating Station	624	2011	6,779[c]
Sonoran Energy Project	**544**	**tbd**	**6,583[d]**

[a] Source: CEC Status of All Projects, http://www.energy.ca.gov/sitingcases/all_projects.html

[b] Source: QFER CEC-1304 Power Plant Reporting Database, data for 2014.

[c] CEC Final Staff Assessments.

[d] Includes startup and shutdown in heat rate calculation.

New Source Review Requirements. Under the regulations that govern new sources of emissions, the proposed project is required to secure a preconstruction Determination of Compliance from the MDAQMD, as well as demonstrate continued compliance with regulatory limits when the new equipment becomes operational. The preconstruction review demonstrates that subject new equipment will use BACT, will provide any necessary emission offsets, and will perform an ambient air quality impact analysis. The requirements of each of these elements of the MDAQMD's new source review program are discussed below.

Best Available Control Technology. BACT must be applied to a new or modified emissions unit resulting in an emissions increase exceeding MDAQMD BACT threshold levels. In Table 3.1-46, the maximum daily emissions from the gas turbine, auxiliary boiler, cooling tower and emergency fire pump engine are compared with the BACT thresholds. As shown in this table, the CTG is subject to BACT for NOx, VOC, SOx, and PM_{10}. BACT review is also required for the cooling tower and for NOx emissions from the emergency fire pump engine. For the auxiliary boiler, emissions of all pollutants are below the applicable thresholds, so the boiler is not required to undergo BACT review.

Table 3.1-46. MDAQMD BACT Applicability

Pollutant	BACT Threshold (lbs/day)	CTG (lbs/day)	Auxiliary Boiler (lbs/day)	Firepump Engine (lbs/day)	Wet Cooling Tower (lbs/day)
PM_{10}	25	238	11.1	0.004	38.9
NOx	25	871	16.3	32.2	--
SOx	25	118	2.2	<0.1	--
VOC	25	278	7.5	0.9	--

BACT for the applicable pollutants was determined by reviewing a number of BACT guideline documents, including the BAAQMD and SJVAPCD BACT Guidance, the South Coast Air Quality Management District BACT Guideline Manual, and the EPA's RACT/BACT/LAER Clearinghouse. The detailed BACT analysis is included in Appendix 3.1D.

Emission Offsets. Emission offsets are required for increases in emissions of nonattainment pollutants that occur at the facility above MDAQMD offset threshold levels. Because the proposed SEP is considered a modification to the existing BEP, the facility emissions shown below are the sum of permitted emissions at BEP and SEP. Emission increases from the proposed project are compared with the District offset thresholds in Table 3.1-47. Under District Rule 1305(a)(2)(b)(ii)b.II, offsets must be provided for emissions that exceed the threshold amounts in Rule 1303(B).

Table 3.1-47. MDAQMD Nonattainment Pollutant Emission Offset Thresholds (tpy)

Pollutant	Existing BEP Emissions	Proposed Emissions, SEP	Net Reductions, BEP[a]	Total Facility Emissions (BEP+SEP)	Emission Offset Thresholds[b]	Net Increase	Emission Offsets Required
NOx	97	85.6	0.0	182.6	25	85.6	85.6[c]
SOx	24	8.8	-12.0	20.8	25	-3.2	0.0
VOC	24	24.3	0.0	48.3	25	24.3	23.3[d]
PM_{10}	97	40.1	-40.1	97.0	15	0	0.0

[a] Proposed reductions in permitted emissions from BEP.

[b] MDAQMD Rule 1303 (b)(1). CO offsets not required because MDAQMD is in attainment of the CO standards.

[c] Existing BEP NOx emissions were previously fully offset, so offsets are required only for the net increase from SEP.

[d] Per District Rule 1305(a)(2)(b)(ii)b.II, offsets must be provided for emissions that exceed the 25 tpy threshold amount (48.3 – 25 = 23.3 tpy of offsets required).

SEP is generating 40.1 tons of simultaneous PM_{10} reductions by reducing the permitted facility-wide PM_{10} emission limit at BEP from 97 to 56.9 tpy. These simultaneous AERs may be used as offsets for PM_{10} and PM_{10} precursors (including SOx) under District Rule 1305(B)(2). APHUS also owns 200 tons of NOx ERCs that will be used to provide the remaining required offsets. As required by District rules, these emission offsets will be surrendered to the MDAQMD prior to the initial operation of SEP.

Air Quality Impact Analysis. Under the MDAQMD new source review regulations, every project owner for a new or modified facility must demonstrate that the proposed emission increases will not interfere with the attainment or maintenance of an applicable ambient air quality standard. The modeling

analyses presented in Section 3.1.5 show that the proposed project will not interfere with the attainment or maintenance of the applicable air quality standards or cause additional violations of any standards, with the exception of PM_{10}, for which the state standards are already exceeded. Offsets will be provided to ensure that potential impacts are mitigated.

3.1.7 Cumulative Impacts

The project owner requested a list of projects that are within a six-mile radius of the proposed project and are currently in the permitting process, are undergoing CEQA review, or recently received an Authority to Construct (ATC) from the MDAQMD. The District responded that while there are no projects meeting these criteria, BEP should be modeled and added to monitored background to ensure that potential local cumulative impacts are adequately evaluated. The modeling results presented in Section 3.1.5 contain BEP, as requested. Potential regional cumulative impacts are addressed further in Appendix 3.1G.

3.1.7.1 Nitrogen Deposition Analysis

Nitrogen deposition is the input of NOx and ammonia (NH_3) derived pollutants, primarily nitric acid (HNO_3), from the atmosphere to the biosphere. Nitrogen deposition can lead to adverse impacts on sensitive species, including direct toxicity, changes in species composition among native plants, and enhancement of invasive species.

The total nitrogen emission levels (based on NOx and NH_3 emissions) for the project will be mitigated in part by the reduction in allowable annual NOx emissions from BEP. BEP provided offsets for 202 tons of NOx prior to first fire of the gas turbines but recently reduced allowable annual NOx emissions to 97 tpy. The net nitrogen emission change is shown below in Table 3.1-48. The detailed nitrogen emission calculations for the proposed new project and from the NOx reductions are included in Appendix 3.1B.

As shown in Table 3.1-48, the reduction in allowable NOx emissions from BEP will result in a reduction of total allowable nitrogen emissions, but there will be a net increase in total nitrogen emissions as a result of the project. The mitigation measures for this pollutant will provide NOx emission reduction credits as discussed in Section 3.1.8.

Table 3.1-48. Net Nitrogen Emissions Change for Proposed Project

Equipment	Total Nitrogen Emissions (as N)
New Equipment at SEP (Gas turbine, auxiliary boiler and fire pump engine)	93.4[a] tpy
Reduction in Permitted Emissions from BEP	(33.1 tpy)[b]
NOx ERCs provided for SEP	(32.0 tpy)
Net Emission Change	28.3 tpy

[a] Contains nitrogen associated with NOx and NH_3 emissions

[b] Reflects NOx reductions associated with the May 7, 2015, permit amendment that reduced NOx PTE for BEP from 202 to 97 tpy. While these reductions cannot be used as emission reduction credits, they can be recognized as mitigation for CEQA purposes.

3.1.8 Mitigation Measures

3.1.8.1 Construction Mitigation

MDAQMD Rule 403 governs the emissions of fugitive dust, prohibiting visible fugitive dust beyond property lines and requiring the minimization of fugitive dust emissions from excavation, grading, and land clearing operations. Construction impacts will be further minimized with the implementation of a

construction fugitive dust and diesel-fueled engine control plan. This plan will focus on reducing construction air quality impacts and will encompass the construction mitigation measures listed below.

- Applying dust suppressants to unpaved roads and disturbed areas
- Limiting onsite vehicle speeds to 10 mph and posting the speed limit
- Applying dust suppressants frequently during periods of high winds when excavation/grading is occurring
- Sweeping onsite paved roads and entrance roads on an as-needed basis
- Replacing ground cover in disturbed areas as soon as practical
- Covering truck loads when hauling material that could be entrained during transit
- Applying dust suppressants or covers to soil stockpiles and disturbed areas when inactive for more than two weeks
- Using ultra-low sulfur diesel fuel (15 ppm sulfur) in all diesel-fueled equipment
- Using Tier 3 and Tier 4 construction equipment to the extent feasible
- Maintaining all diesel-fueled equipment per manufacturer's recommendations to reduce tailpipe emissions
- Limiting diesel heavy equipment idling to less than 5 minutes, to the extent practical
- Using electric motors for construction equipment to the extent feasible

Construction emissions and mitigation are described in more detail in Appendix 3.1C.

3.1.8.2 Operational Mitigation

During operation, the appropriate mitigation measure is to reduce potential air emissions before they are emitted. This is accomplished by the careful design of the project, including the installation of the BACT to minimize air emissions. Air quality impacts will be further mitigated by providing emission offsets. The remainder of this section describes the BACT analysis and the emission offset mitigation.

The detailed per unit daily emission calculations are included in Appendix 3.1.B, Table 3.1B-6. A comparison of potential emissions with the BACT thresholds in MDAQMD Rule 1303.A was presented in Table 3.1-46. This table shows that the turbine is required to use BACT for NOx, VOC, SO_2 and PM_{10}.

A detailed analysis of BACT options for the gas turbine is provided in Appendix 3.1D. A summary of the proposed controlled emission rates is provided in Table 3.1-49.

Table 3.1-49. Proposed Controlled Emission Limits

Pollutant	Control Technology	Proposed Limit
	Gas Turbine	
NOx	dry low-NOx combustors, selective catalytic reduction	2.0 ppmc (1-hour average) 1.5 ppmc (annual average)
CO	oxidation catalyst, good combustion practices	2.0 ppmc (1-hour average) 1.5 ppmc (annual average)
VOC	good combustion practices	2.0 ppmc (3-hour average) with duct firing 1.0 ppmc (3-hour average) without duct firing
SO_2	natural gas fuel	0.5 gr/100 dscf (short-term) 0.25 gr/100 dscf (annual average)

Table 3.1-49. Proposed Controlled Emission Limits

Pollutant	Control Technology	Proposed Limit
$PM_{10}/PM_{2.5}$	natural gas fuel	10 lb/hr (3-hour average) with duct firing 8 lb/hr (3-hour average) without duct firing
	Auxiliary Boiler	
NOx	ultra-low NOx burners	7 ppmc
CO	good combustion practices	50 ppmc
VOC	good combustion practices	10 ppmc
SO_2	natural gas fuel	--
$PM_{10}/PM_{2.5}$	natural gas fuel	--
	Emergency Engine	
NOx	turbocharging/intercooling; use of Tier 3 certified engine	2.56 g/bhp-hr
	Cooling Tower	
$PM_{10}/PM_{2.5}$	high-efficiency drift eliminators	0.0005% (drift rate)

For the gas turbine, the proposed BACT for NOx emissions is the use of dry low NOx combustors with SCR to control NOx emissions to 2.0 ppmvd (1-hour average). BACT for CO emissions is good combustion practices and the installation of oxidation catalyst systems to control CO emissions to 2.0 ppmvd (1-hour). BACT for VOC emissions is good combustion practices to control VOC emissions to 2.0 ppmvd with duct firing and 1.0 ppmvd (3-hour average) without duct firing.

For the auxiliary boiler, NOx emissions will be minimized through the use of ultra-low NOx burners to achieve a controlled NOx emission rate of 7 ppmvd @ 3% O_2 (3 hours). CO and VOC emissions will be minimized through good combustion practices and emission rates of 50 and 10 ppm, respectively. Good combustion practices and pipeline-quality natural gas will be used to minimize $PM_{10}/PM_{2.5}$ and SO_2 emissions. A complete top down BACT assessment for criteria pollutants is included in Appendix 3.1D.

Emission Offsets. MDAQMD Rule 1303.B requires that projects with operational emissions above 25 tons/year of NOx, VOC, or SOx, or 15 tons/year of PM_{10}, provide emission offsets resulting from emission reductions from other sources. As shown in Table 3.1-47 above, the net increase in annual NOx and VOC emissions from the project will exceed the District's offset thresholds. Compliance with the District's offset requirements is discussed above in Section 3.1.6.3.

3.1.9 Emissions Compliance Monitoring

The gas turbine will be equipped with continuous emissions monitoring systems to monitor and record exhaust concentrations of NOx, CO, and O_2. Fuel flow and ammonia injection rate will also be continuously monitored and recorded. The project owner will develop a procedure to calculate ammonia slip using the ammonia injection rate, the exhaust flow rate (calculated from monitored fuel flow), and measured NOx emissions. The procedure will be verified during annual emissions testing.

3.1.9.1 Locations of CEMS and Emissions Test Ports

The standard requirement for locating emissions test ports and CEMS sampling locations in an exhaust stack is at least 2 diameters downstream and 0.5 diameters upstream from the nearest flow disturbance (40 CFR 60, Appendix A, Methods 1 and 8A, respectively). For the SEP gas turbine, the nearest flow disturbance will be top of the transition from the HRSG to the stack, which will be located at an elevation of 92 feet above grade. The purpose of this requirement is to ensure that there is no

stratification of the exhaust stream or cyclonic flow at the sampling location. Because the gas turbine exhaust stack has an internal diameter of 22.0 feet, the 2.0/0.5 requirement will dictate a minimum exhaust stack height of 92 feet + (2 * 22 ft) + (0.5 * 22 ft) = 147 feet.

Because of the location of the SEP near the Blythe Airport, the project owner desires to minimize the exhaust stack height of the gas turbine to the extent possible. Therefore, the project owner plans to construct a 140-foot stack and to request approval of an alternate test port location that will be approximately 1.7 diameters downstream of the last flow disturbance (the upstream distance of 0.5 stack diameters from the stack exit will be maintained). An alternative test port location can be approved, provided that the flow at the test site is shown not to experience cyclonic flow. Outlined below are the provisions of 40 CFR 60, Appendix A, Method 1 that are applicable to the proposed alternative test port location.

11.0 Procedure

11.1 Selection of Measurement Site.

11.1.1 Sampling and/or velocity measurements are performed at a site located at least eight stack or duct diameters downstream and two diameters upstream from any flow disturbance such as a bend, expansion, or contraction in the stack, or from a visible flame. If necessary, an alternative location may be selected, at a position at least two stack or duct diameters downstream and a half diameter upstream from any flow disturbance.

11.1.2 An alternative procedure is available for determining the acceptability of a measurement location not meeting the criteria above. This procedure described in section 11.5 allows for the determination of gas flow angles at the sampling points and comparison of the measured results with acceptability criteria…

11.5 The alternative site selection procedure may be used to determine the rotation angles in lieu of the procedure outlined in section 11.4.

11.5.1 Alternative Measurement Site Selection Procedure. This alternative applies to sources where measurement locations are less than 2 equivalent or duct diameters downstream or less than one-half duct diameter upstream from a flow disturbance. The alternative should be limited to ducts larger than 24 in. in diameter where blockage and wall effects are minimal. A directional flow-sensing probe is used to measure pitch and yaw angles of the gas flow at 40 or more traverse points; the resultant angle is calculated and compared with acceptable criteria for mean and standard deviation.

For the CEMS measurement location in a source subject to a NSPS (such as the gas turbine, which is subject to Subpart KKKK), 40 CFR §60.13 (Monitoring Requirements) requires CEMS to be installed and operated in accordance with the provisions of 40 CFR 60 Appendix B, Performance Specification 2 (Specifications and Test Procedures for SO_2 and NOx Continuous Emission Monitoring Systems in Stationary Sources).

8.0 Performance Specification Test Procedure

8.1 Installation and Measurement Location Specifications.

8.1.1 CEMS Installation. Install the CEMS at an accessible location where the pollutant concentration or emission rate measurements are directly representative or can be corrected so as to be representative of the total emissions from the affected facility or at the measurement location cross section Then select representative measurement points or paths for monitoring in locations that the CEMS will pass the RA test (see section 8.4). If the cause of failure to meet the RA test is determined to be the measurement location and a satisfactory correction technique cannot be established, the Administrator may require the

CEMS to be relocated. Suggested measurement locations and points or paths that are most likely to provide data that will meet the RA requirements are listed below.

8.1.2 CEMS Measurement Location. It is suggested that the measurement location be (1) at least two equivalent diameters downstream from the nearest control device, the point of pollutant generation, or other point at which a change in the pollutant concentration or emission rate may occur and (2) at least a half equivalent diameter upstream from the effluent exhaust or control device….

8.1.3 Reference Method Measurement Location and Traverse Points.

8.1.3.1 Select, as appropriate, an accessible RM measurement point at least two equivalent diameters downstream from the nearest control device, the point of pollutant generation, or other point at which a change in the pollutant concentration or emission rate may occur, and at least a half equivalent diameter upstream from the effluent exhaust or control device. When pollutant concentration changes are due solely to diluent leakage (e.g., air heater leakages) and pollutants and diluents are simultaneously measured at the same location, a half diameter may be used in lieu of two equivalent diameters. The CEMS and RM locations need not be the same.

During initial source testing, the stack flow characteristics at the reference method test port locations will be checked to ensure that they meet the "pitch" and "yaw" requirements of Part 60, Appendix A, Method 1 (cited above). The RATA will be used to demonstrate that the CEMS location is acceptable at the proposed sampling. If the procedure indicates that stratification exists at the CEMS and/or reference method test port locations, a multipoint probe will be used to ensure that representative samples are nevertheless obtained.

3.1.10 Comparison of Air Quality Impacts for the Proposed Modification

This section presents a comparison of emissions and air quality impacts of the proposed project with those of the licensed BEP II. The comparison demonstrates that:

- The air quality impacts from the proposed SEP will not result in any significant impact to public health
- The project will remain in compliance with all applicable laws, ordinances, regulations and standards
- The proposed changes to the project configuration will be beneficial to the public because the air quality impacts of the SEP will in most cases be lower than the air quality impacts of the BEP II

3.1.10.1 Impacts During Project Construction

Emissions from the SEP during project construction are quantified in Section 3.1.4.3 of the PTA. Construction of SEP is expected to take approximately 26 months, which is longer than the 16- to 20-month construction period estimated for BEP II.[38] Maximum estimated onsite criteria pollutant emissions during construction are shown for BEP II and SEP in Table 3.1-50. Estimated onsite construction emissions from SEP are below all MDAQMD CEQA significance thresholds and are lower than estimated BEP II onsite construction emissions for all pollutants except CO.

[38] Construction period is shown as 16 months in Section 5.2.3.6 and Appendix 5.2E and 20 months in Section 5.9.2.2 of the October 2009 BEP II PTA.

Table 3.1-50. Maximum Construction Emissions, SEP and BEP II

Emitting Activity	NOx	CO	VOC	PM10/PM2.5
Onsite Construction				
		Maximum Daily Emissions, lb/day		
Onsite Construction: SEP	85	169	5.1	20.2/4.3
Onsite Construction: BEP II[a]	147.2	62	20.5	85.0/23.9[b]
MDAQMD CEQA Significance Thresholds	137	548	137	82/82
		Maximum Annual Emissions, tpy		
Onsite Construction: SEP	7.4	14.5	0.4	2.5/0.5
Onsite Construction: BEP II[a]	19.43	8.18	2.7	3.51/1.5[c]
MDAQMD CEQA Significance Thresholds	25	100	25	15/15
All Project Construction, including Linear Features				
		Maximum Daily Emissions, lb/day		
Project Construction: SEP	353	651	25	58.0/18.2
Project Construction: BEP II[d]	152.8	89.7	22.9	49.2/16.4
MDAQMD CEQA Significance Thresholds	137	548	137	82/82
		Maximum Annual Emissions, tpy		
Project Construction: SEP	17	36	1.4	5.1/1.3
Project Construction: BEP II[d]	20.2	11.8	3.05	2.61/1.35
MDAQMD CEQA Significance Thresholds	25	100	25	15/15

Notes:

[a] BEP II onsite construction emissions from BEP Phase II Amendment, October 2009 (Caithness 2009), Appendix 5.2E, Tables 5.2E-1 and 5.2E-2.

[b] Shown as 47.6/15.8 lb/day in Table 5.2E-5 (Caithness 2009).

[c] Shown as 2.41/1.3 tpy in Table 5.2E-5 (Caithness 2009).

[d] BEP II onsite construction emissions from Table 5.2E-5 (Caithness 2009).

Total daily estimated construction emissions (onsite and offsite activities) for SEP are generally higher than total estimated construction emissions for BEP II. As discussed in Section 3.1.4.3, total daily estimated construction emissions for SEP will exceed the applicable NOx and CO significance thresholds, while total daily estimated construction emissions for BEP II exceed the significance threshold only for NOx. Estimated total annual emissions for both projects are below significance thresholds.

Estimated GHG emissions from SEP construction are compared with potential GHG emissions from the construction of BEP II in Table 3.1-51. Although total GHG emissions during construction of SEP are projected to be higher than those from BEP II, they remain well below the construction emissions significance threshold of 25,000 tons.

Table 3.1-51. Comparison of Estimated GHG Emissions During the Construction Period

	CO_2	CH_4	N_2O	CO_2e
SEP	7,139	1.1	0.0	7,166
BEP II[a]	4,744.8	0.29	0.18	4,806

Note:

[a] CO_2, CH_4 and N_2O emissions for BEP II from October 2009 PTA, CO2e Emissions Estimates table in Appendix 5.2E. CO_2e calculated using current GWPs.

3.1.10.2 Emissions During Project Operation

The SEP will consist of a single GE 7HA.02 gas turbine, instead of two Siemens SGT6-5000F gas turbines as permitted for BEP II. The performance and operating assumptions are compared in Table 3.1-52. Although the nominal rated output of SEP will be similar to the nominal rated output of BEP II, the total rated heat input of the two BEP II gas turbines is about 30 percent higher than the rated heat input for the SEP gas turbine. The licensed BEP II configuration was expected to use about 50 percent more fuel annually and to generate about 36 percent more electricity than the SEP.

Table 3.1-52. Comparison of Gas Turbine Performance Data and Operating Assumptions

Parameter	SEP	BEP II
Maximum heat input, MMBtu/hr (full load, ISO conditions)		
Without duct firing	3,243	2 x 2,109.6
With duct firing	3,466	2 x 2,241.2
Nominal rated output, MW (full load, ISO conditions, including steam turbine)	543	569
Expected annual heat input, MMBtu/yr	24,847,230	37,900,412
Expected annual generation, GWh net	3,790	5,142
Expected annual operating hours (including duct firing)	7,000	8,020
Expected annual duct firing hours	1,500	2,020
Expected annual startups	200	180 (each turbine)

Controlled emission limits from the SEP will be very similar to permitted limits for BEP II. The SEP proposed limits are compared with the BEP II permitted limits in Table 3.1-53 below.

Table 3.1-53. Comparison of Proposed Controlled Emission Limits

Pollutant	Control Technology	Proposed Limits, SEP	Permitted Limits, BEP II
Gas Turbine			
NOx	dry low-NOx combustors, selective catalytic reduction	2.0 ppmc (1-hour average) 1.5 ppmc (annual average)	2.0 ppmc (1-hour average)
CO	oxidation catalyst, good combustion practices	2.0 ppmc (1-hour average) 1.5 ppmc (annual average)	2.0 ppmc (1-hour average)
VOC	good combustion practices	2.0 ppmc (3-hour average) with duct firing 1.0 ppmc (3-hour average) without duct firing	2.0 ppmc (1-hour average) [a] with duct firing 1.0 ppmc (1-hour average) [a] without duct firing
SO_2	natural gas fuel	--	--
$PM_{10}/PM_{2.5}$	natural gas fuel	10 lb/hr (3-hour average) with duct firing 8 lb/hr (3-hour average) without duct firing	7.5 lb/hr for each gas turbine/HRSG, for a total of 15 lb/hr (3-hour average)

Table 3.1-53. Comparison of Proposed Controlled Emission Limits

Pollutant	Control Technology	Proposed Limits, SEP	Permitted Limits, BEP II
Auxiliary Boiler			
NOx	ultra-low NOx burners	7 ppmc (3-hour average)	9 ppmc (1-hour average)[a]
CO	good combustion practices	50 ppmc (3-hour average)	50 ppmc (1-hour average)[a]
VOC	good combustion practices	10 ppmc (3-hour average)	5 ppmc (1-hour average)[a]
SO_2	natural gas fuel	--	--
$PM_{10}/PM_{2.5}$	natural gas fuel	--	--
Emergency Diesel Fire Pump Engine			
All	turbocharging/intercooling; use of Tier 3 certified engine	--	--
Cooling Tower			
$PM_{10}/PM_{2.5}$	high-efficiency drift eliminators	0.0005% (drift rate)	0.0005% (drift rate)

Note:

[a] The MDAQMD permit indicates that these are 1-hour limits. However, since compliance is determined through source testing, compliance with the limits will actually be determined on a 3-hour average basis.

Emissions during gas turbine startup and shutdown are compared in Table 3.1-54. Although the BEP II gas turbines were designed to be fast-start units, cold starts were assumed to last up to 3 hours per gas turbine—significantly longer than the 45-minute cold startup time for the SEP gas turbine. Permitted BEP II startup and shutdown emissions are expressed on a per-unit basis, and the per-unit emissions have been doubled for this comparison since the BEP II project is a 2-on-1 design while SEP will use a single gas turbine/HRSG. Startup and shutdown emissions from SEP are expected to be significantly lower than those from BEP II for all pollutants and types of starts except for CO emissions during warm/hot starts, for which emissions are comparable.

Table 3.1-54. Comparison of Startup and Shutdown Emissions, SEP and BEP II

	Event Time, minutes	Gas Turbine Emissions, pounds per event			
		NOx	CO	VOC	$PM_{10}/PM_{2.5}$
Cold Start, SEP	45	181	132	10	6.6
Cold Start, BEP II[a]	180	241.8	280.8	101.4	45.0
Warm Start, SEP	40	146	130	10	5.9
Hot Start, SEP	21	97	123	9	3.1
Warm/Hot Start, BEP II	30	163.8	117.0	93.6	15.0
Shutdown, SEP	14	4.9	136	28	2.1
Shutdown, BEP II	30	59.4	50.6	41.8	3.6

Note:

[a] Emission limits for BEP II from MDAQMD's Authority to Construct. Permit limits are for a single turbine and have been multiplied by two for this comparison of facility emissions.

Estimated emissions during the commissioning period for the two project designs are summarized in Table 3.1-55 below. Maximum hourly NOx and CO emissions during commissioning of the SEP, which will

occur during initial commissioning activities prior to tuning of the combustors and installation of the emission control systems, are significantly higher than hourly NOx and CO emissions analyzed for BEP II, primarily because the BEP II gas turbines were assumed to be commissioned one at a time. While total NOx emissions during the commissioning period are expected to be somewhat higher than those from BEP II, emissions of CO, VOC, and $PM_{10}/PM_{2.5}$ are expected to be the same or lower.

Table 3.1-55. Estimated Emissions During the Commissioning Period, SEP and BEP II

Emitting Activity	NOx	CO	VOC	$PM_{10}/PM_{2.5}$
	Maximum Hourly Emissions, lb/hr			
Commissioning Activities, SEP	625	4919	464	8.0
Commissioning Activities, BEP II[a] (each gas turbine)	193.5	2713.0	--[b]	--[b]
	Total Emissions During the Commissioning Period, tons			
Commissioning Activities, SEP	70	22	3	4.9
Commissioning Activities, BEP II[a]	51	407	51	2.5 to 7

Note:

[a] BEP II commissioning emissions from BEP Phase II Amendment, October 2009, Table 5.2-19 and p. 38.

[b] Data not provided.

The cooling tower and auxiliary boiler proposed for SEP will be slightly larger than the corresponding units utilized for BEP. Emissions and operating parameters for the SEP and BEP II units are compared in Table 3.1-56 and 3.1-57.

Table 3.1-56. Comparison of Auxiliary Boiler Emissions and Design Parameters

Parameter	SEP	BEP II
Maximum Heat Input, MMBtu/hr	66.3	60
Emissions		
NOx, lb/hr	0.56	0.55
SOx, lb/hr	0.09	0.14
CO, lb/hr	2.43	1.85
VOC, lb/hr	0.28	0.11
PM_{10}, lb/hr	0.46	0.27

Table 3.1-57. Comparison of Cooling Tower Emissions and Design Parameters

Parameter	SEP	BEP II
Number of cells per tower	10	11
Water Circulation Rate, gal/min	129,480	108,000
Drift Rate	0.0005%	0.0005%
Water Drift (lbs/hr)	323.6	269.9
TDS Level, mg/L	5000	5050
Emissions		
PM_{10}, lb/hr	1.6	1.4
PM_{10},tpy	7.1	6.0

A comparison of hourly, daily, and annual emissions is provided in Table 3.1-58 below. Daily and annual emissions from gas turbine(s), duct burner(s), auxiliary boiler, emergency diesel fire pump engine, and cooling tower are shown. Emissions from SEP will be well below permitted levels for BEP II for all pollutants except daily CO. This is consistent with SEP's slightly higher CO emission rate during startups, as gas turbine startup emissions dominate the daily CO emissions calculation.

Table 3.1-58. Comparison of Hourly, Daily and Annual Emissions, SEP and BEP II

	NOx	SOx	CO	VOC	$PM_{10}/PM_{2.5}$
Hourly, lb/hr[a]					
Proposed Limits, SEP Gas Turbine	26.0	4.9	15.8	9.0	10
Permitted Limits, BEP II Gas Turbines[b]	35.8	6.6	21.8	12.6	15
Daily, lb/day[c]					
Proposed Limits, SEP	920	120	967	286	289
Permitted Limits, BEP II[b]	1,168	154	892	499	380
Annual, tpy[c]					
Proposed Limits, SEP	85.6	8.8	78.0	24.3	40.1
Permitted Limits, BEP II[b]	169.4	13.3	110.7	51.9	60.9

Note:

[a] Hourly emissions reflect normal operation of one gas turbine at SEP and both gas turbines at BEP II. See Table 3.1-55 for a comparison of emission rates during startup and shutdown.

[b] Emission limits for BEP II from MDAQMD's Authority to Construct.

[c] Daily and annual emissions from gas turbine startups and shutdowns.

Annual GHG emissions from SEP are expected to be lower than those estimated for BEP II, chiefly because of different assumptions regarding annual gas turbine operation and resulting fuel use (see Table 3.1-52). Estimated annual GHG emissions for the two projects are shown in Table 3.1-59.

Table 3.1-59. Comparison of Estimated Annual GHG Emissions

	CO_2	CH_4	N_2O	CO_2e[b]
SEP	1,343,028	25	3	1,344,415
BEP II[a]	1,919,424	213	5	1,926,188

Note:

[a] CO_2, CH_4 and N_2O emissions for BEP II from October 2009 PTA, Table 5.2A-14. CO_2e calculated using current GWPs.

[b] The CO_2e emissions comparison shown here does not show potential sulfur hexafluoride leakage from circuit breakers, as potential SF_6 emissions were not quantified in the BEP II licensing documents.

3.1.10.3 Impacts During Project Construction

Maximum modeled impacts during the construction of SEP are compared with those of the licensed BEP II in Table 3.1-60.

Table 3.1-60. Comparison of Maximum Modeled Impacts During Construction

Pollutant	Averaging Time	Maximum Modeled Concentrations for SEP, µg/m³ [a]	Maximum Modeled Concentrations for BEP II, µg/m³ [b]
NO_2	1-Hour	130.7	62.8
	Annual	3.6	1.65
SO_2	1-Hour	1.9	0.064
	3-Hour	1.6	0.051
	24-Hour	0.4	0.013
CO	1-Hour	1,009.2	26.4
	8-Hour	504.6	10.1
PM_{10}	24-Hour	17.1	60.8
	Annual	1.3	1.95
$PM_{2.5}$	24-Hour	2.8	12.8
	Annual	0.2	0.45

Note:

[a] SEP alone; no BEP.

[b] Source: CEC 2012a, Air Quality Table 10.

Modeled NO_2, SO_2 and CO construction impacts for SEP are higher than modeled construction impacts for BEP II; however, modeled PM_{10} and $PM_{2.5}$ impacts are lower. Total construction impacts for BEP II exceeded the 24-hour $PM_{2.5}$ standard as well as the state PM_{10} standards. Total PM_{10} impacts during construction of SEP are also projected to exceed the state PM_{10} standards because existing background concentrations already exceed the standards, but total $PM_{2.5}$ impacts will be below both state and federal standards.

3.1.10.4 Impacts During Project Operation

Maximum modeled operation impacts for the licensed BEP II and the proposed SEP are compared in Table 3.1-61.

Table 3.1-61. Comparison of Maximum Modeled Impacts During Operation

Pollutant	Averaging Time	Maximum Modeled Concentrations for SEP, µg/m³	Maximum Modeled Concentrations for BEP II, µg/m³
NO_2	1-Hour	101.6[a]	113[b]
	98th pctl	53.8	[c]
	Annual	0.2	0.338
SO_2	1-Hour	2.9	6.2
	3-Hour	1.5	3.3
	24-Hour	0.4	0.9
	Annual	0.02	0.04
CO	1-Hour	117.9[a]	213[b]
	8-Hour	9.2	19.2
PM_{10}	24-Hour	5.3	2.85
	Annual	0.5	0.666

Table 3.1-61. Comparison of Maximum Modeled Impacts During Operation

Pollutant	Averaging Time	Maximum Modeled Concentrations for SEP, µg/m³	Maximum Modeled Concentrations for BEP II, µg/m³
$PM_{2.5}$	24-Hour	5.3	2.85
	Annual	0.5	0.666

Notes:

[a] Modeled concentrations reflect gas turbine startup, as well as fire pump engine operation.

[b] Modeled concentrations reflect startup of both gas turbines but exclude emergency diesel fire pump engine operation

[c] Modeled concentration not provided for facility alone.

Maximum modeled concentrations from the proposed SEP are lower than maximum modeled concentrations from the licensed BEP II project for all pollutants and averaging periods except 24-hour average $PM_{10}/PM_{2.5}$, in spite of the lower daily $PM_{10}/PM_{2.5}$ emission rate for SEP (see Table 3.1-58). For SEP, 24-hour average PM concentrations are dominated by the impacts from the cooling tower. The SEP cooling tower is somewhat shorter than the BEP II cooling tower (42 feet compared with 50 feet), and the SEP cooling tower has a somewhat higher water circulation rate, leading to slightly higher hourly emissions. The higher modeled 24-hour average PM impact may be because of these differences in cooling tower designs.

Maximum impacts from both the proposed SEP and the licensed BEP II are predicted to occur in roughly the same locations: NO_2, CO and PM impacts for all averaging periods and annual average SO_2 impacts are immediately south of the facility fenceline, because for both projects these impacts are predominantly as a result of downwash from sources with short stacks (emergency diesel fire pump engine and cooling tower). Impacts that are predominantly a result of the gas turbine (longer-term SO_2 and NO_2 and CO impacts during gas turbine startups) occur farther from the project site.

3.1.11 Changes to the Conditions of Certification

An ATC application will be submitted to the MDAQMD within two weeks of submittal of the PTA to the CEC. MDAQMD will then issue a Determination of Compliance with final permit conditions. The project owner expects that the CEC's conditions of certification for SEP will incorporate the MDAQMD Determination of Compliance, including those conditions related to approved ERCs for the project. The project owner also expects that the CEC staff will update the BEP II staff air quality conditions (designated AQ-SC) to reflect current standard staff conditions. Suggested revisions are shown in **<u>underline</u>** and ~~strikeout~~ fonts below.

AQ-SC1 Air Quality Construction Mitigation Manager (AQCMM): The project owner shall designate and retain an on-site AQCMM who shall be responsible for directing and documenting compliance with conditions AQ-SC3, AQ-SC4 and AQ-SC5 for the entire duration of project **<u>site</u>** construction. The on-site AQCMM may delegate responsibilities to one or more AQCMM delegates. The AQCMM and AQCMM delegates shall have full access to all areas of construction on the project site, and shall have the authority to stop any or all construction activities as warranted by applicable construction mitigation conditions. The AQCMM and AQCMM delegates may have other responsibilities in addition to those described in this condition. The AQCMM shall not be terminated without written consent of the compliance project manager (CPM).

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit to the CPM for approval the name, resume, qualifications, and contact information for the on-site AQCMM and all AQCMM delegates. The AQCMM and all delegates must be approved by the CPM before the start of ground disturbance.

AQ-SC2 [No changes]

AQ-SC3 Construction Fugitive Dust Control: [No changes]

A. [No changes]

B. [No changes]

C. No vehicle shall exceed ~~5~~ **10** miles per hour on unpaved areas within the construction site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.

[No additional changes]

AQ-SC4 [No changes]

AQ-SC5 Diesel-Fueled Engine~~s~~ Control: ***

b. To meet the highest level of emissions reduction available for the engine family of the equipment, each piece of diesel-powered equipment shall be powered by a Tier 4 engine (**without add-on controls**), a Tier 4i engine (**without add-on controls**), or a Tier 3 engine with a post-combustion retrofit device verified by the ARB or the US EPA. For PM, the retrofit device shall be a particulate filter if verified, or a flow-through filter, or at least an oxidation catalyst. For NOx, the device shall meet the latest Mark level verified to be available ~~(as of January 2012, none meet this NOx requirement)~~.

[No additional changes]

AQ-SC6 [No changes]

QUARTERLY OPERATIONS REPORT

AQ-SC7 [No changes]

AQ-SC8~~9~~ The project owner shall ~~surrender the emission offset credits listed below or a modified list, as allowed by this condition, at the time, that surrender is required by Condition **AQ-18**. The ERC list shall contain evidence that the MDAQMD and the U.S. EPA have determined that the ERCs are real, enforceable, surplus, permanent, and quantifiable. The project owner may request CPM approval for any substitutions or modification of credits listed below.~~ **provide emission reductions in the form of offsets or emission reduction credits (ERCs) in the quantities of at least 85.6 tons/year NOx and 23.2 tons/year VOC emissions. The project owner shall demonstrate that the reductions are provided in the form required by the district.**

The project owner shall surrender the ERCs from among those that are listed in the district's Final Determination of Compliance Conditions or a modified list, as allowed by this condition. If additional ERCs are submitted, the project owner shall submit an updated table including the additional ERCs to the CPM. The project owner shall request CPM approval for any substitutions, modifications, or additions to the listed credits.

The CPM, in consultation with the District and the U.S. EPA, may approve any such change to the ERC list provided that the project remains in compliance with all applicable laws, ordinances, regulations, and standards, the requested change(s) clearly will not cause the project to result in a significant environmental impact, and each requested change is consistent with applicable federal and state laws and regulations.

~~MDAQMD ERC Source~~	~~ERC Identification~~	~~NOx (tpy)~~	~~VOC (tpy)~~	~~PM10 (tpy)~~
~~CRIT Road Paving~~	~~MDAQMD (pending)~~			~~126~~

~~Existing ERC Held or Owned by Caithness Blythe II, LLC~~	~~MDAQMD -0058~~	~~25~~		
~~Existing ERC Held or Owned by Caithness Blythe II, LLC~~	~~MDAQMD -0051~~	~~175~~		
~~SoCal Gas Compressor Engines~~	~~MDAQMD - 0052~~	~~250~~		

Verification: The project owner shall submit to the CPM ~~a list of ERCs to be surrendered to the District at least 60 days prior to construction. The list of ERC's shall include evidence that the U.S. EPA and California ARB concurs with the determination that the ERCs are valid, including road paving.~~ **records showing that the project's offset requirements have been met prior to initiating construction.** If the CPM, in consultation with the District, approves a substitution or modification, the CPM shall file a statement of the approval with the Energy Commission docket and mail a copy of the statement to every person on the post-certification mailing list. The CPM shall maintain an updated list of approved ERCs for the project.

3.1.12 References

Caithness Blythe II, LLC. 2009. *Petition to Amend the Blythe Energy Project Phase II (02-AFC-1C)*. October 26.

Caithness Blythe II, LLC. 2010. Blythe Energy Project Phase II Amendment, Data Responses Set II. October 1.

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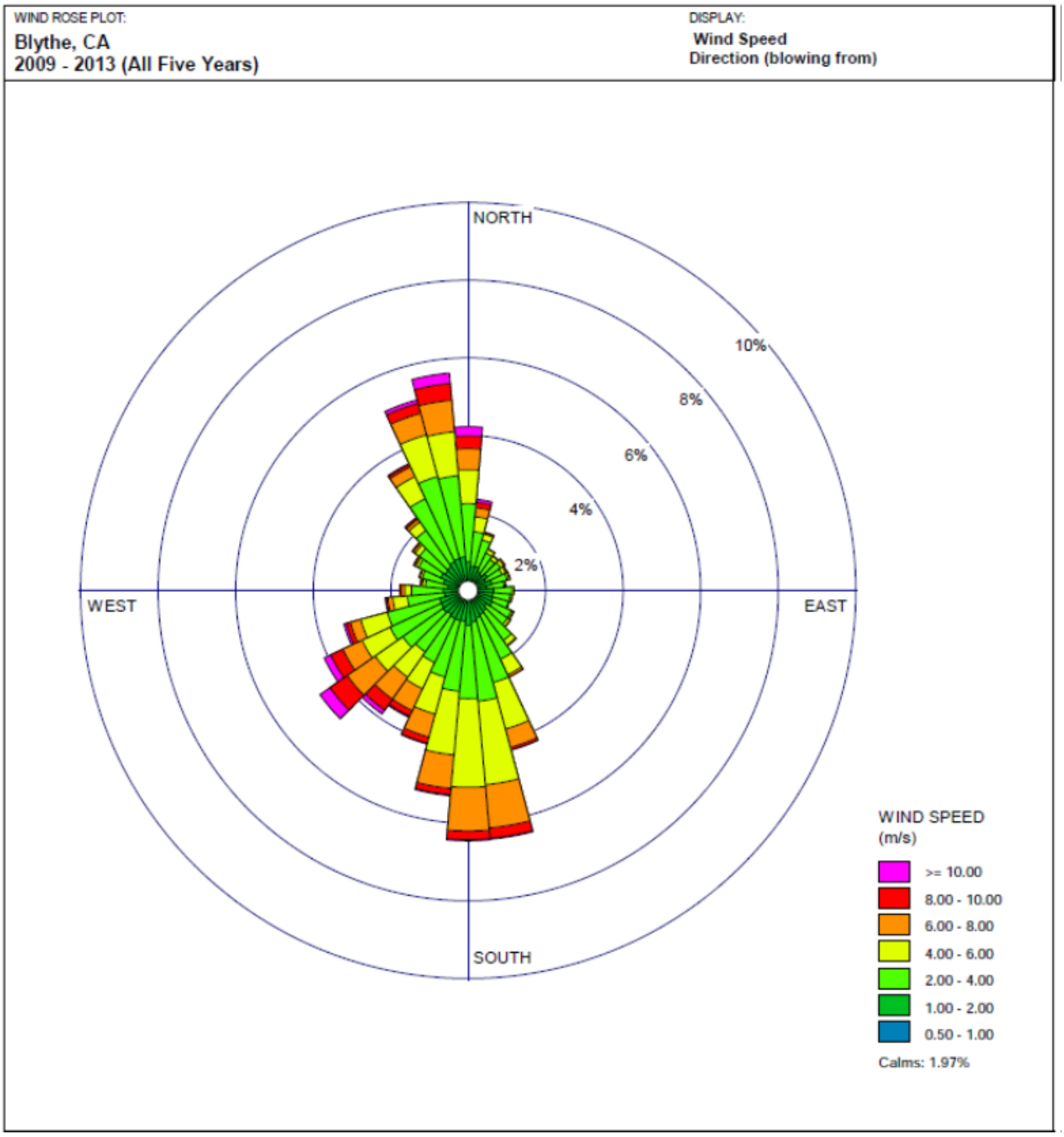

FIGURE 3.1-1
Composite Annual Wind Rose, Blythe (2009-2013)
Sonoran Energy Project
Riverside County, California

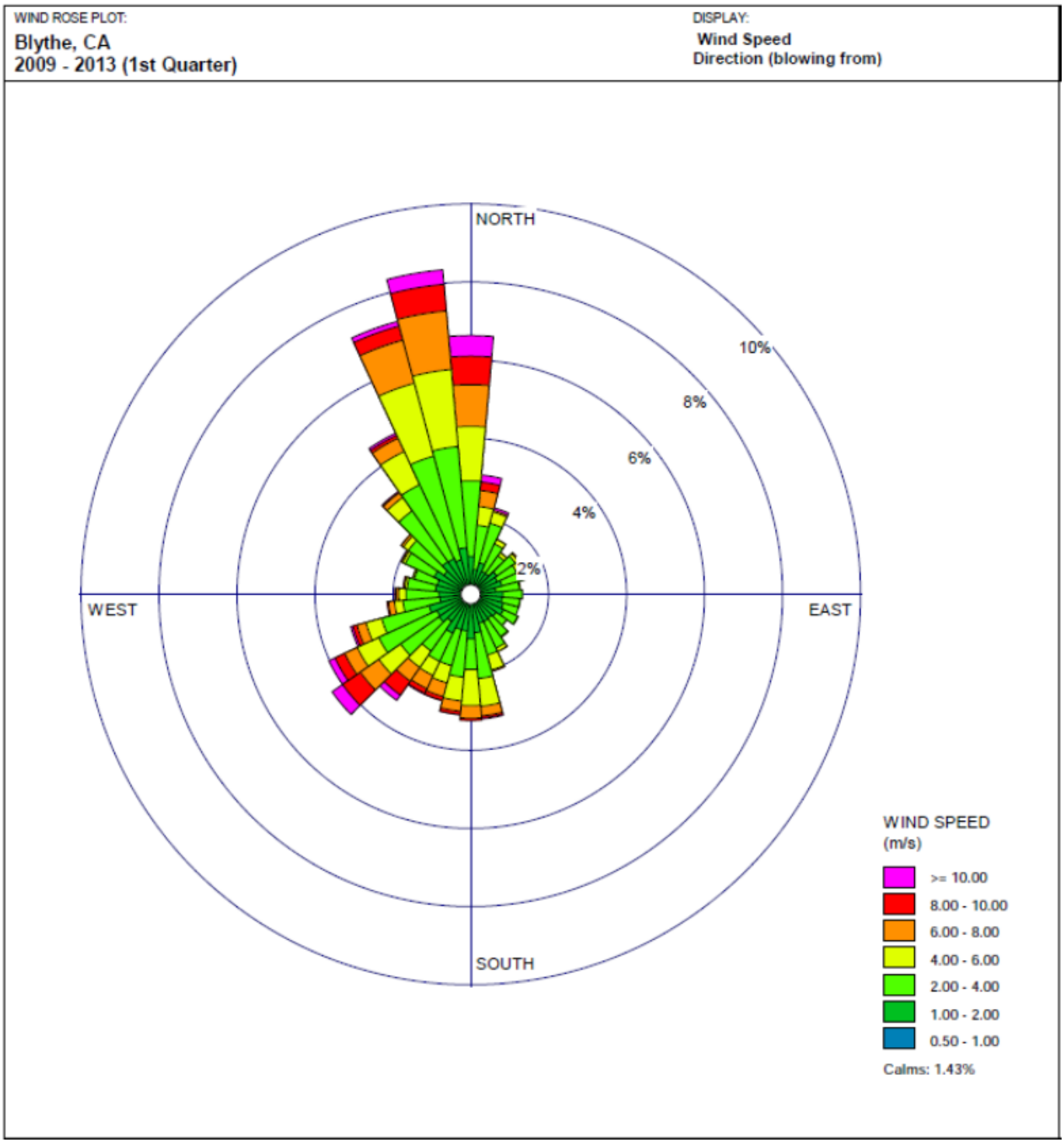

FIGURE 3.1-2
Composite Wind Rose, Q1, Blythe (2009-2013)
Sonoran Energy Project
Riverside County, California

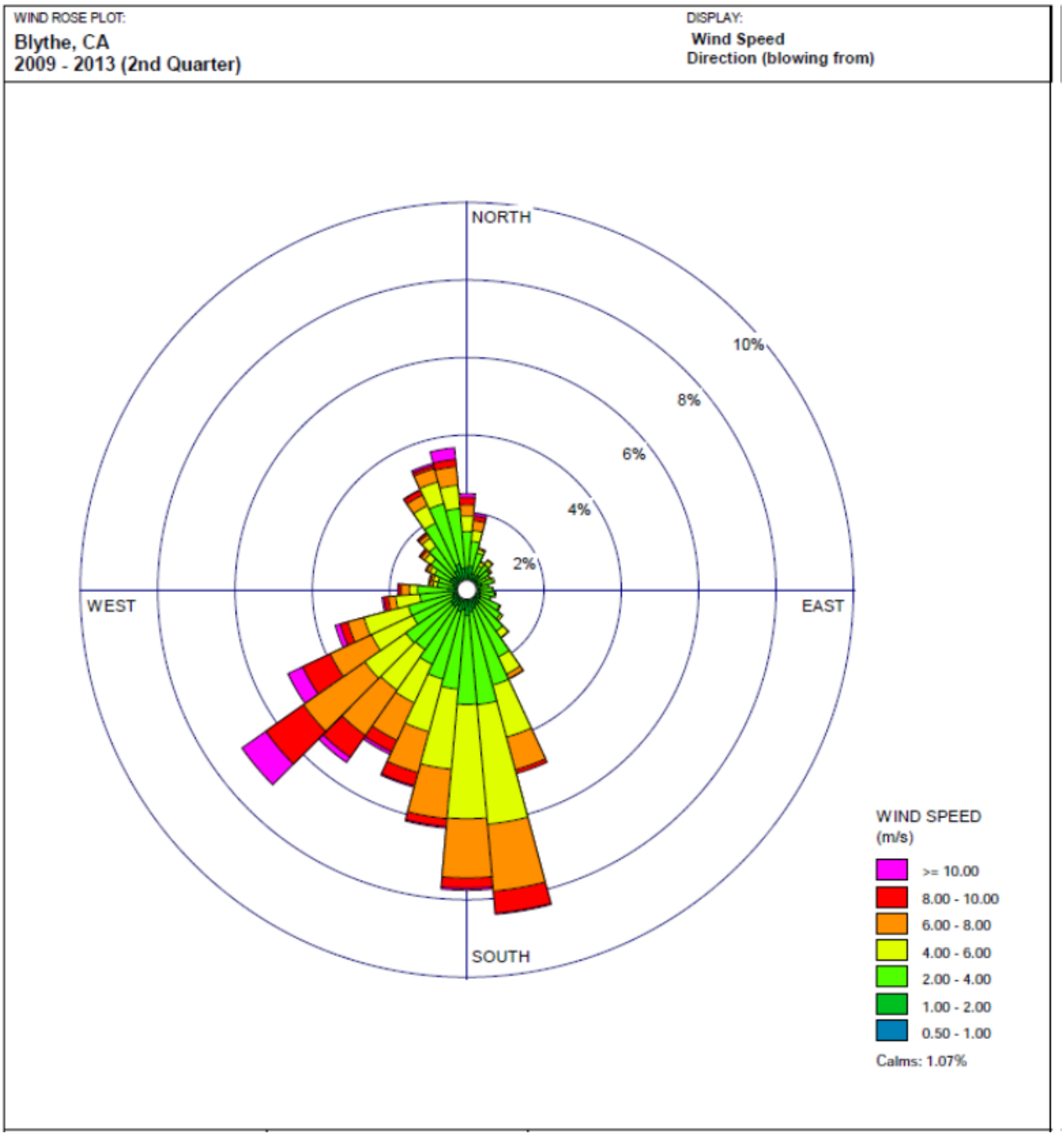

FIGURE 3.1-3
Composite Wind Rose, Q2, Blythe (2009-2013)
Sonoran Energy Project
Riverside County, California

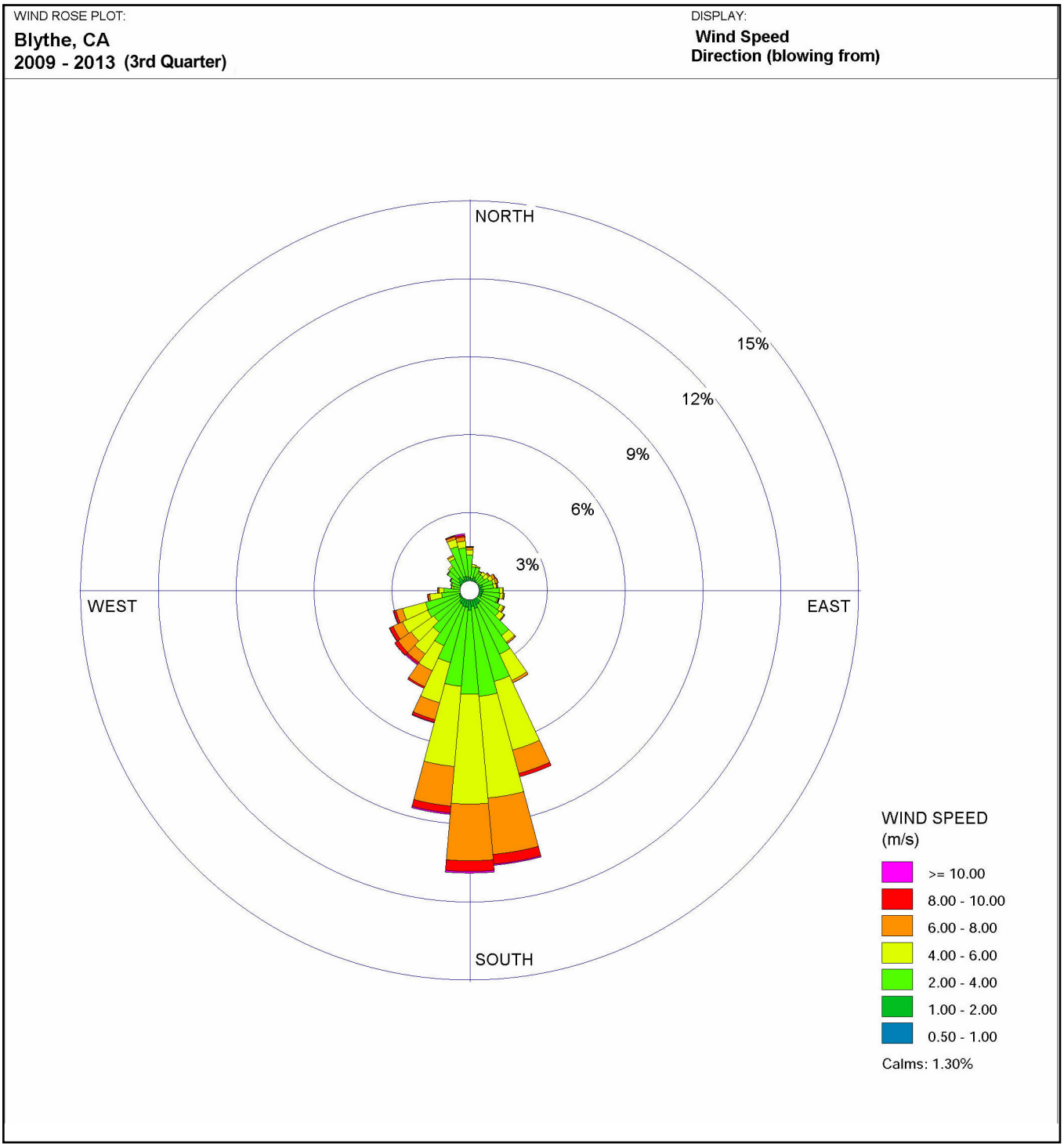

FIGURE 3.1-4
Composite Wind Rose, Q3, Blythe (2009-2013)
Sonoran Energy Project
Riverside County, California

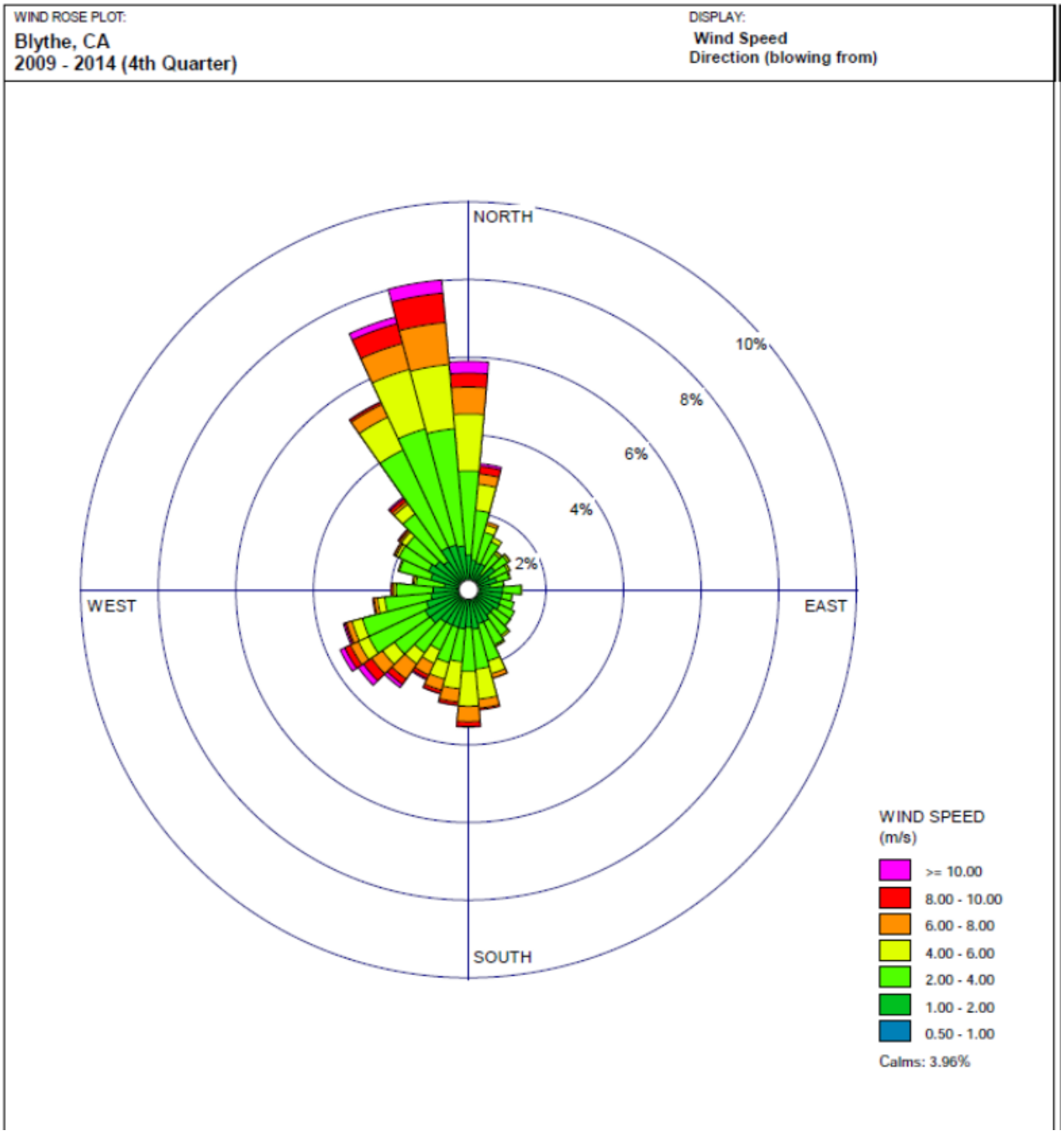

FIGURE 3.1-5
Composite Wind Rose, Q4, Blythe (2009-2013)
Sonoran Energy Project
Riverside County, California

FIGURE 3.1-6
Location of Background Air Quality Monitoring Stations
Sonoran Energy Project
Riverside County, California

3.2 Biological Resources

The project modification discussed herein will not cause additional impacts to biological resources beyond those identified in the Commission's Final Decision (02-AFC-01C), as amended. Any potential biological resource impacts associated with the proposed modification will be less than significant.

3.2.1 Environmental Baseline Information

The affected environment has not substantially changed since the Final Decision (02-AFC-01C), as amended, and potential impacts to biological resources are the same as previously analyzed. SEP is located in the City of Blythe on a previously disturbed site adjacent to the existing BEP. The project will be constructed on up to 34 acres within the existing 76-acre licensed site. The 76-acre SEP site is bounded to the north by Riverside Avenue, to the east by the existing BEP facility, and to the south by Hobsonway. There are currently no structures to the west of the proposed plant location. The project site is enclosed by a permanent exclusionary fence and is located on fill material. The electrical interconnection is via a 161-kV line connecting to the existing Buck Boulevard substation to tie into an existing transmission line. The interconnection will be built on the previously surveyed SEP site; therefore, no additional impacts to biological resources are anticipated.

3.2.2 Environmental Analysis

The project modification will not result in new impacts to biological resources beyond those identified in the Final Decision (02-AFC-01C), as amended. SEP will have a smaller footprint within the previously licensed site; therefore, impacts beyond those described in the Final Decision (02-AFC-01C), as amended, are not anticipated. Since the proposed project site is located within a permanently fenced location and the baseline conditions have not changed, a supplemental site survey was not conducted.

Updated species lists generated from queries of the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB), California Native Plant Society (CNPS), and U.S. Fish and Wildlife Service (USFWS) were reviewed. Figure 3.2-1 shows the results of the queries related to the PTA. A review of sensitive natural communities and critical habitat was also conducted (Figure 3.2-2) for the PTA. No additional sensitive biological resources were identified.

3.2.3 Cumulative Impacts

No changes to previously identified cumulative impacts in the Final Decision (02-AFC-01C), as amended, will result from the approval of this Petition.

3.2.4 Mitigation Measures

No changes to previously identified impacts to biological resources will result from the approval of this Petition. Therefore, no additional resource protection measures, beyond those required in the Final Decision (02-AFC-01C), as amended, are necessary.

3.2.5 Consistency with LORS

The project modification will comply with applicable biological resource LORS.

3.2.6 Conditions of Certification

The PTA does not require changes to the biological resources Conditions of Certification from the Final Decision (02-AFC-01C), as amended.

3.2.7 References

Caithness Blythe II, LLC. 2009. *Petition to Amend the Blythe Energy Project Phase II (02-AFC-1C)*. October 26.

California Energy Commission (CEC). 2005. *Commission Decision for the Blythe Energy Project Phase II*. Docket Number 02-AFC-01C. Sacramento, California. December.

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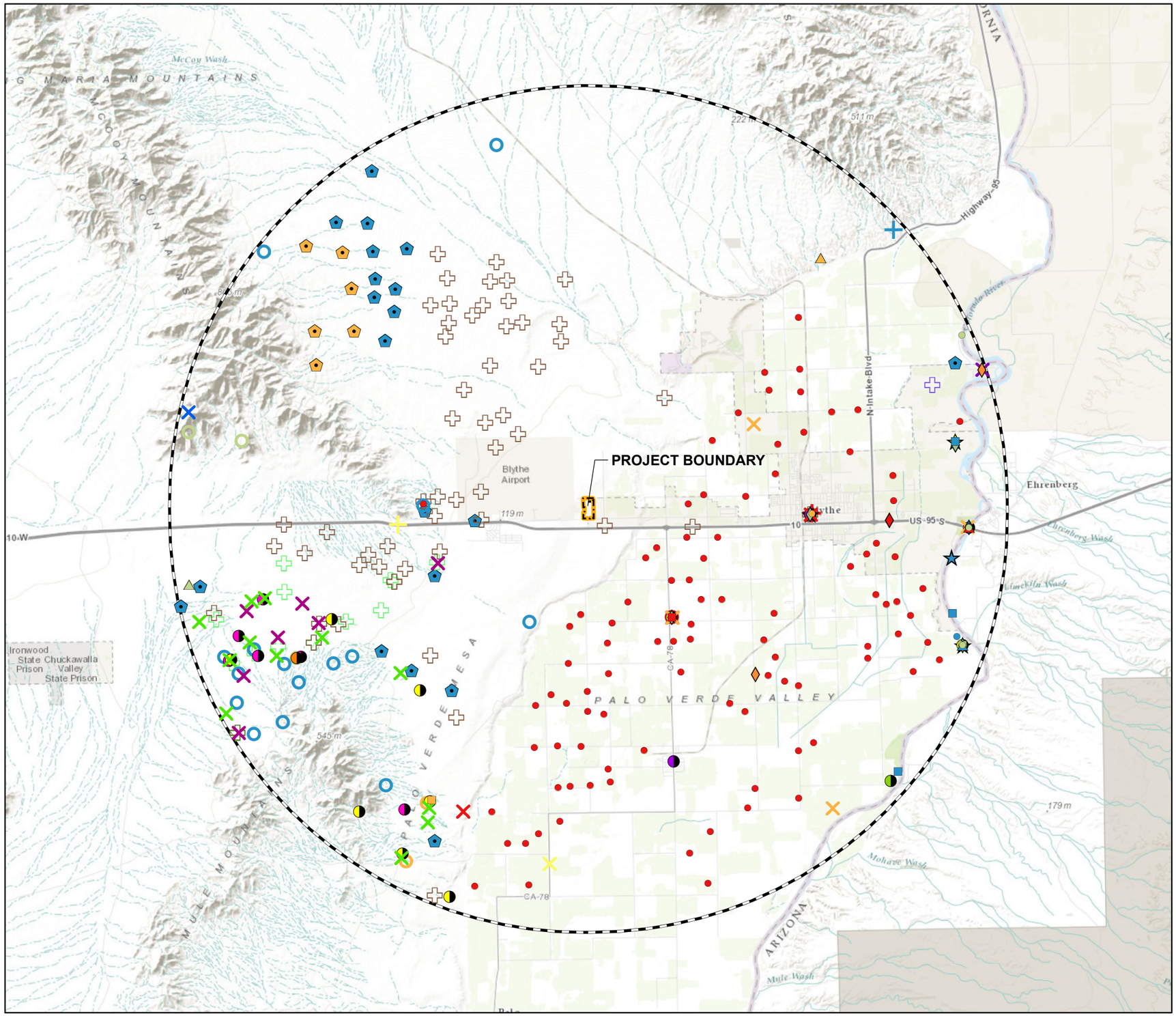
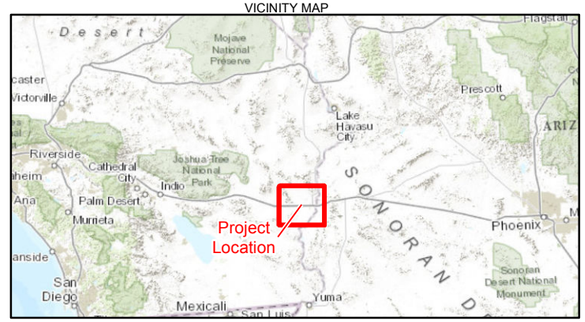


VICINITY MAP



LEGEND

Property Boundary
10-Mile Buffer

Animals

- elf owl
- razorback sucker
- mountain plover
- burrowing owl
- summer tanager
- black-tailed gnatcatcher
- Bradley's cuckoo wasp
- Yuma myotis
- Yuma clapper rail
- yellow-breasted chat
- American badger
- pallid bat
- pocketed free-tailed bat
- Gila woodpecker
- western yellow-billed cuckoo
- great blue heron
- Colorado River cotton rat
- great egret
- California Mccoy snail
- Le Conte's thrasher
- Townsend's big-eared bat
- vermilion flycatcher
- Mojave fringe-toed lizard
- Colorado Valley woodrat
- Arizona Myotis
- gilded flicker
- Crissal thrasher
- cave myotis
- loggerhead shrike
- desert tortoise
- California leaf-nosed bat
- merlin
- hoary bat
- southwestern willow flycatcher
- Sonoran yellow warbler
- western yellow bat

Plants

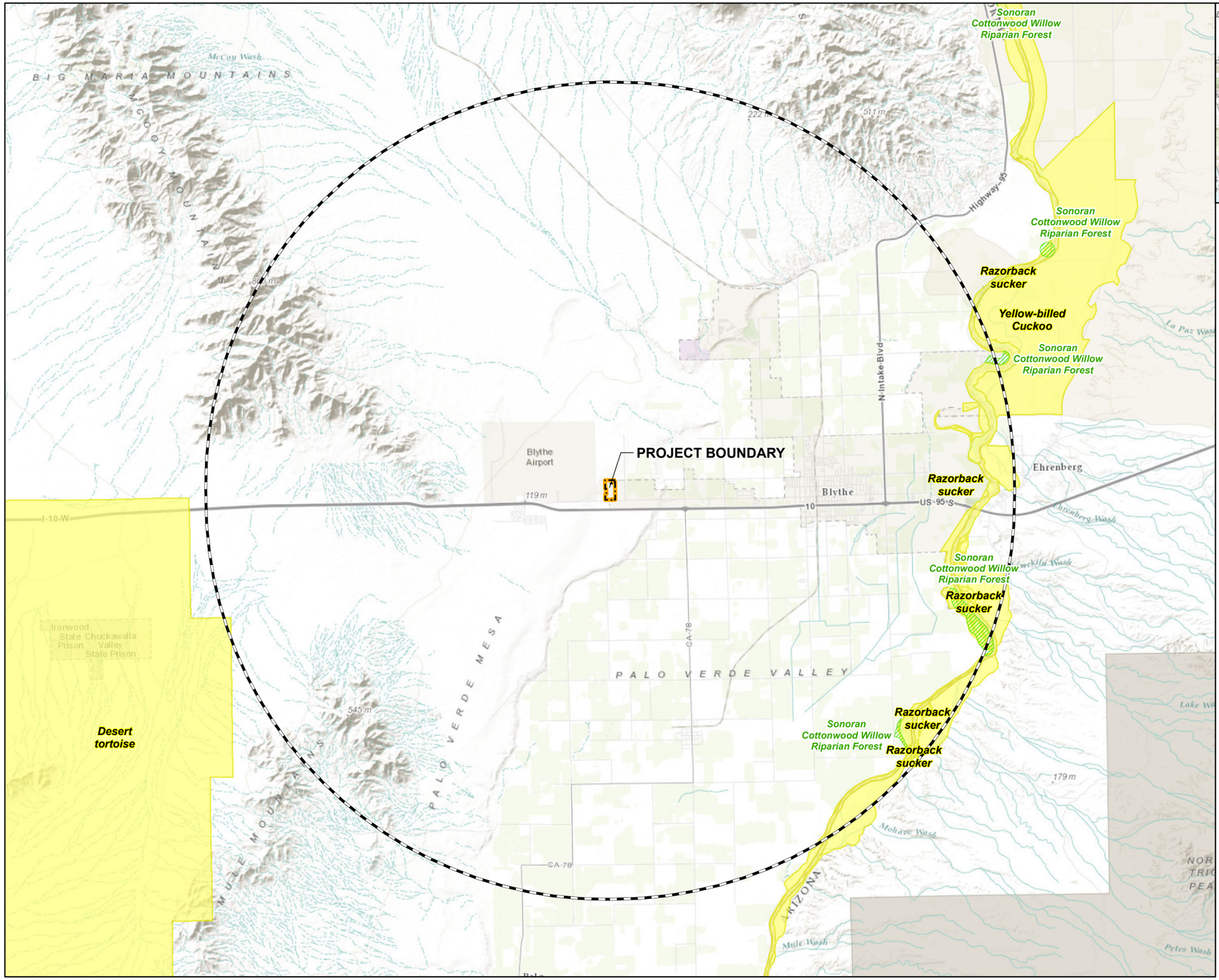
- Alverson's foxtail cactus
- gravel milk-vetch
- bitter hymenoxys
- Harwood's milk-vetch
- Harwood's eriastrum
- California satintail
- Abrams' spurge
- dwarf germander
- Las Animas colubrina
- desert beardtongue

Source:
CNDDB version 05/2015. Please Note: The occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not yet been surveyed and/or mapped. Lack of information in the CNDDB about a species or an area can never be used as proof that no special status species occur in an area.

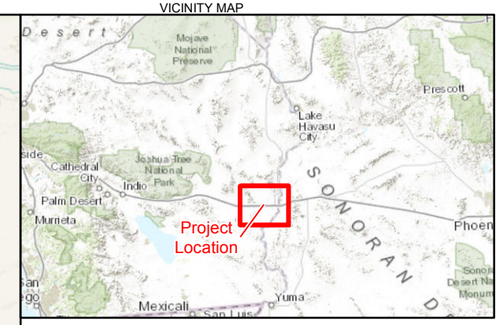
0 2.5 5
Miles

N

FIGURE 3.2-1
CNDDB Search (10 Mile Search)
Sonoran Energy Project
Riverside County, California



VICINITY MAP



LEGEND

- Property Boundary
- 10-Mile Buffer
- Sensitive Vegetation Community
- Critical Habitat

Source:
U.S. Fish and Wildlife Service 2015
CNDDB version 05/2015. Please Note: The occurrences shown on this map represent the known locations of the species listed here as of the date of this version. There may be additional occurrences or additional species within this area which have not yet been surveyed and/or mapped. Lack of information in the CNDDB about a species or an area can never be used as proof that no special status species occur in an area.

0 2.5 5
Miles

N

FIGURE 3.2-2
Critical Habitat and Natural Vegetation Communities (10 Mile Search)
Sonoran Energy Project
Riverside County, California

3.3 Cultural Resources

The project modification discussed herein will not cause additional impacts to cultural resources beyond those identified in the Commission's Final Decision (02-AFC-01C), as amended. Any potential cultural resource impacts associated with the proposed modification will be less than significant.

3.3.1 Environmental Baseline Information

The affected environment has not substantially changed since the Final Decision (02-AFC-01C), as amended, and potential impacts to cultural resources are the same as previously analyzed. SEP is located in the City of Blythe on a previously disturbed site adjacent to the existing BEP. The project will be constructed on up to 34 acres within the existing 76-acre licensed site. The 76-acre SEP site is bounded to the north by Riverside Avenue, to the east by the existing BEP facility and to the south by Hobsonway. There are currently no structures to the west of the proposed plant location. The project site is enclosed by a permanent exclusionary fence and is located on fill material. The electrical interconnection is via a 161-kV line connecting to the existing Buck Boulevard substation to tie into an existing transmission line. The interconnection will be built on the previously surveyed SEP site; therefore, no additional impacts to cultural resources are anticipated.

A new literature search was completed on November 6, 2014, and is provided in Appendix 3.3A. The material presented in the appendix was provided in electronic format from the information center and is confidential. This review involved a records search of the files at the Eastern Information Center California Historical Resources Information System (CHRIS) at the University of California, Riverside. A one-eighth mile buffer zone around all proposed disturbance areas was included in this search. The CHRIS records search contained a review of all recorded archaeological sites as well as all known cultural resource survey and excavation reports. The National Register of Historic Places (NRHP), the Office of Historic Preservation (OHP), Archaeological Determinations of Eligibility (ADOE), California Historical Landmarks, and California Points of Historical Interest, were examined, as well.

A survey was completed on November 14, 2014 by CH2M HILL for a proposed project located adjacent and north of the SEP parcel. This pedestrian survey was conducted in transects of 10 to 15 meters wide and covered all of the new interconnection that is located north of the SEP parcel, as well as a 200-foot buffer around the east, west, and north sides of new interconnection. Visibility was excellent at nearly 100 percent. No additional resources were identified as a result of this updated literature search and survey.

3.3.2 Environmental Analysis

As discussed in Section 2, Project Description, the project modification analyzed in this Petition will result in similar impacts as described in the Final Decision (02-AFC-01C), as amended. No additional ground disturbance is proposed and no impacts beyond those described in the Final Decision (02-AFC-01C), as amended, are anticipated. Therefore, the resource protection measures that are part of existing Conditions of Certification CUL-1 through CUL-10 are adequate to address potential impacts to cultural resources from SEP. Construction activities will be conducted in accordance with these Conditions of Certification and all applicable LORS.

3.3.3 Cumulative Impacts

No changes to previously identified cumulative impacts in the Final Decision (02-AFC-01C), as amended, will result from the approval of this Petition.

3.3.4 Mitigation Measures

No changes to previously identified impacts to cultural resources will result from the approval of this Petition. Therefore, no additional resource protection measures, beyond those required in the Final Decision (02-AFC-01C), as amended, are necessary.

3.3.5 Consistency with LORS

The project modification will comply with applicable cultural resource LORS.

3.3.6 Conditions of Certification

This Petition does not require changes to the cultural resources Conditions of Certification from the Final Decision (02-AFC-01C), as amended.

3.3.7 References

Caithness Blythe II, LLC. 2009. *Petition to Amend the Blythe Energy Project Phase II (02-AFC-1C)*. October 26.

California Energy Commission (CEC). 2005. *Commission Decision for the Blythe Energy Project Phase II*, *Docket Number 02-AFC-01C*. Sacramento, California. December.

California Energy Commission (CEC). 2012. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C, Amendment Order No. 12-0425-3a.* Sacramento, California. April.

3.4 Geology and Paleontology

The project modification discussed herein will not cause additional geological hazards or impacts to paleontological or geological resources beyond those identified in the Commission's Final Decision (02-AFC-01C), as amended. Any potential paleontological or geological resources impacts associated with the proposed modification will be less than significant.

3.4.1 Environmental Baseline Information

The affected environment has not substantially changed since the Final Decision (02-AFC-01C), as amended, and potential impacts to paleontological or geological resources are the same as previously analyzed. SEP is located in the City of Blythe on a previously disturbed site adjacent to the existing BEP. The project will be constructed on up to 34 acres within the existing 76-acre licensed site. The 76-acre SEP site is bounded to the north by Riverside Avenue, to the east by the existing BEP facility and to the south by Hobsonway. There are currently no structures to the west of the proposed plant location. The project site is enclosed by a permanent exclusionary fence and is located on fill material. The electrical interconnection is via a 161-kV line connecting to the existing Buck Boulevard substation to tie into an existing transmission line. The interconnection will be built on the previously surveyed SEP site; therefore, no additional impacts to paleontological or geological resources are anticipated.

3.4.2 Environmental Consequences

The paleontological and geotechnical findings remain unchanged from the Final Decision (02-AFC-01C), as amended. No new development or disturbance has occurred near the project site since its amendment that could have discovered additional paleontological resources or sensitivities. Because the planned modification will be conducted entirely on the previously surveyed project site and will connect to existing transmission lines, no new geological or paleontological field surveys were conducted. All activities associated with the planned modifications will be confined within the existing project area and thus, the site disturbance remains unchanged from the existing project. No new impacts to paleontological of geologic resources are expected. Additionally, the project site is located in

an area of low geologic hazards and not within a 100-year flood zone. Therefore, the public will not be exposed to impacts associated to geologic hazards affecting SEP.

3.4.3 Cumulative Impacts

No changes to previously identified cumulative impacts in the Final Decision (02-AFC-01C), as amended, will result from the approval of this Petition

3.4.4 Mitigation Measures

No changes to previously identified impacts to geological or paleontological resources will result from the approval of this Petition. Therefore, no additional resource protection measures, beyond those required in the Final Decision (02-AFC-01C), as amended, are necessary.

3.4.5 Consistency with LORS

Additional LORS are now in place since the initial license and subsequent amendments. The California Building Code has been updated several times since the project was licensed and these updates provide added protection to the SEP because of enhanced design standards. The project modification will comply with applicable geological or paleontological resources LORS.

3.4.6 Conditions of Certification

This Petition does not require changes to the paleontological resources Conditions of Certification from the Final Decision (02-AFC-01C), as amended.

3.4.7 References

Caithness Blythe II, LLC. 2009. *Petition to Amend the Blythe Energy Project Phase II (02-AFC-1C)*. October 26.

California Energy Commission (CEC). 2005. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C*. Sacramento, California. December.

California Energy Commission (CEC). 2012. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C, Amendment Order No. 12-0425-3a.* Sacramento, California. April.

3.5 Hazardous Materials Management

The project modification discussed herein will not cause additional impacts to hazardous materials management beyond those identified in the Commission's Final Decision (02-AFC-01C), as amended. Any potential hazardous material management impacts associated with the proposed modification will be less than significant.

3.5.1 Environmental Baseline Information

The affected environment has not substantially changed since the Final Decision (02-AFC-01C), as amended, and potential impacts to hazardous materials management are the same as previously analyzed. SEP is located in the City of Blythe on a previously disturbed site adjacent to the existing BEP. The project will be constructed on up to 34 acres within the existing 76-acre licensed site. The 76-acre SEP site is bounded to the north by Riverside Avenue, to the east by the existing BEP facility and to the south by Hobsonway. There are currently no structures to the west of the proposed plant location. The project site is enclosed by a permanent exclusionary fence and is located on fill material. The electrical interconnection is via a 161-kV line connecting to the existing Buck Boulevard substation to tie into an existing transmission line. The interconnection will be built on the previously surveyed SEP site; therefore, no additional impacts to hazardous materials management are anticipated.

The chemical list approved in the Final Decision (02-AFC-01C), as amended, has not changed substantially since there will be no new chemicals for the project. There will be a small increase in the maximum quantity of aqueous ammonia to be stored onsite (increase from 20,000 gallons to 24,000 gallons). The increase in aqueous ammonia stored onsite will not result in additional or different applicable hazardous management regulations, causing no significant change to hazardous materials management.

3.5.2 Environmental Analysis

No new significant impacts to hazardous materials will result from the proposed modifications to the existing project. The type and quantity of hazardous materials will be similar to those previously analyzed. Table 3.5-1 provides an updated list of hazardous materials for the proposed modification.

Table 3.5-1. Updated List of Hazardous Materials for the Proposed Modification

Trade Name	Chemical Name	CAS Number	Maximum Quantity Onsite
Aqueous ammonia (19% NH4 by weight)	Aqueous ammonia	7664-41-7	24,000 gal
Aqueous ammonia (29% NH4 by weight)	Aqueous ammonia	7664-41-7	
Antiscalant (e.g., NALCO PermaTreat® PC-191T)	Antiscalant	Various	250 gal
Battery electrolyte	Sulfuric acid	7664-93-9	100 lbs
Citric acid	Citric acid	77-92-9	500 lbs
Cleaning chemicals/detergents	Various	None	100 gal
Cleaning chemicals/detergents for membrane-based water treatment systems (e.g., NALCO PermaClean® PC-77, NALCO PermaClean® PC-40, and NALCO PermaClean® PC-98)	Various	None	250 gal
Sanitizing chemicals for membrane-based (MF/RO/EDI) water treatment systems (e.g., NALCO PermaClean® PC-11)	Dibromoacetonitrile	3252-43-5	650 gal
	2,2-dibromo-3-nitrilopropionamide	10222-01-2	
	Polyethylene glycol	25322-68-3	
Diesel No. 2	Diesel No. 2	68476-34-6	500 gal
Hydraulic fluid	Phosphate ester	None	600 gal
Laboratory reagents	Various	Various	20 gal
Lubrication oil	Oil	None	12,000 gal
Mineral insulating oil	Oil	8012-95-1	40,000 gal
Waste oil	Oil	None	50 gal
Sodium bisulfite (NaHSO3)	Sodium bisulfite	7631-90-5	250 gal
Sulfuric acid (93%)	Sulfuric acid	7664-93-9	8,000 gal
Sodium hydroxide (NaOH) (20 to 50%)	Sodium hydroxide	1310-73-2	6,000 gal
Sodium hypochlorite (12.5%)	Sodium hypochlorite	7681-52-9	6,000 gal
Hydrochloric acid	Hydrochloric acid	7647-01-0	10,000 gal

Table 3.5-1. Updated List of Hazardous Materials for the Proposed Modification

Trade Name	Chemical Name	CAS Number	Maximum Quantity Onsite
Sodium nitrite	Sodium nitrite	7632-00-0	500 lbs
Proprietary corrosion/scale inhibitor (e.g., NALCO TRAC107)	Inorganic salt	Proprietary	2,000 gal
	Sodium hydroxide	1310-73-2	
Proprietary nonoxidizing biocide (e.g., NALCO 7330)	5-chloro-2-methyl-4-isothiazolin-3 -one (1.1%)	26172-55-4	2,000 gal
	2-methyl-4-isothiazolin-3-one (0.3%)	2682-20-4	
Trisodium phosphate (Na_3PO_4) or phosphate/sodium hydroxide blend (e.g., NALCO BT-3400 or NALCO BT-4000)	Trisodium phosphate	7601-54-9	500 lbs
Sulfur hexafluoride	Sulfur hexafluoride	2551-62-4	200 lbs
Acetylene	Acetylene	47-86-2	540 cubic feet
Oxygen	Oxygen	7782-44-7	540 cubic feet
Propane	Propane	74-98-6	300 lbs
EPA Protocol gases	Various	Various	< 100 cubic feet
Cleaning chemicals	Various	Various	Varies (less than 25 gallons of liquids or 100 pounds solids for each chemical)
Paint	Various	Various	Varies (less than 25 gallons of liquids or 100 pounds solids for each type)

3.5.3 Cumulative Impacts

No changes to previously identified cumulative impacts in the Final Decision (02-AFC-01C), as amended, will result from the approval of this Petition.

3.5.4 Mitigation Measures

No changes to previously identified impacts to hazardous materials management will result from the approval of this Petition. Therefore, no additional resource protection measures, beyond those required in the Final Decision (02-AFC-01C), as amended, are necessary.

3.5.5 Consistency with LORS

The project modification will comply with applicable hazardous materials management LORS.

3.5.6 Conditions of Certification

This Petition does not require changes to the hazardous materials management Conditions of Certification from the Final Decision (02-AFC-01C), as amended. However, the Table in Condition HAZ-1 should be updated to reflect the information contained in Table 3.5-1 provided herein.

3.5.7 References

Caithness Blythe II, LLC. 2009. *Petition to Amend the Blythe Energy Project Phase II (02-AFC-1C)*. October 26.

California Energy Commission (CEC). 2005. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C*. Sacramento, California. December.

California Energy Commission (CEC). 2012. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C, Amendment Order No. 12-0425-3a.* Sacramento, California. April.

3.6 Land Use

The project modification discussed herein will not cause additional impacts to land use beyond those identified in the Commission's Final Decision (02-AFC-01C), as amended. Any potential land use impacts associated with the proposed modification will be less than significant.

3.6.1 Environmental Baseline Information

The affected environment has not substantially changed since the Final Decision (02-AFC-01C), as amended, and potential impacts to land use are the same as previously analyzed. SEP is located in the City of Blythe on a previously disturbed site adjacent to the existing BEP. The project will be constructed on up to 34 acres within the existing 76-acre licensed site. The 76-acre SEP site is bounded to the north by Riverside Avenue, to the east by the existing BEP facility and to the south by Hobsonway. There are currently no structures to the west of the proposed plant location. The project site is enclosed by a permanent exclusionary fence and is located on fill material. The electrical interconnection is via a 161-kV line connecting to the existing Buck Boulevard substation to tie into an existing transmission line. The interconnection will be built on the previously surveyed SEP site; therefore, no additional impacts to land use are anticipated.

The proposed SEP facility is located on land with a general plan land use designation of General Industrial (I-G) in the City of Blythe General Plan 2025 (City of Blythe, 2007). As City of Blythe land use designations are the same as the zoning designations, the property is also zoned I-G, General Industrial. The purpose of the I-G land use/zoning classification is to:

> …provide and protect industrial lands for the full range of manufacturing, agricultural and industrial processing, general service, and distribution uses. Unrelated retail and service commercial uses that could be more appropriately located elsewhere in the City would not be permitted, except for offices, RV parks and campgrounds, subject to appropriate standards (City of Blythe, 2007).

3.6.2 Environmental Analysis

No additional impacts to land use will result from the changes proposed as part of this Petition. Specifically, the proposed project modification will not physically divide an established community; conflict with applicable land use plans, policies, or regulations; or conflict with an applicable habitat conservation plan.

The proposed SEP is an industrial land use located on property with the current City of Blythe land use/zoning designation of I-G, General Industrial (City of Blythe, 2007). Figure 3.6-1 shows the City of Blythe's land use and zoning designations. The General Industrial land use/zoning designation allows a variety of manufacturing uses by right, including public maintenance services, utility operations facilities, custom manufacturing, general manufacturing, and heavy industrial uses and warehousing in accordance with (City of Blythe, 2007). The proposed project modification is consistent with the existing industrial land use/zoning designations of the property. The Commission Decision's conclusion that the

facility will be consistent with surrounding land uses and will not physically divide any elements of the local community remains valid with the proposed SEP.

The licensed project site includes land located in Airport Compatibility Zones B1 (Inner Approach/Departure Zone), C (Extended Approach/Departure Zone), and D (Primary Traffic Patterns and Runway Buffer Area) of the Riverside County Airport Land Use Compatibility Plan (ALUCP). The previously licensed project was located in Zones C and D.[39] As part of this project modification, and as Figures 3.6-2a and 3.6-2b clearly show, all SEP structures and facilities will occupy the eastern portion of the site, and fall within Compatibility Zones C and D, with the vast majority of project components situated within Zone D. The ALUCP provides that after the City's General Plan has been updated to be consistent with the ALUCP, development within an airport influence area is not subject to review by the Airport Land Use Commission (ALUCP, pp. 1-4, 1-8, and Policy 1.5.2(b)). The City's General Plan (2007) incorporates the ALUCP and is, therefore, consistent with the ALUCP (General Plan Policy 21). Pursuant to the City's General Plan and ALUCP, if not for the exclusive jurisdiction of the CEC to license thermal power plants with a nominal generating capacity of more than 50 MW, the City will review the project for consistency with the ALUCP (General Plan Policy 21, and Implementation Policy at p. 3-25).

The ALUCP sets forth general compatibility criteria for Zones C and D. Among the compatibility criteria is review for objects greater than 70 feet tall in either of these compatibility zones (Riverside County Airport Land Use Commission, 2004). However, this height criterion is for general guidance; taller objects may be acceptable if they do not pose an obstruction. Please see Section 3.11, Traffic and Transportation, for additional information. While the majority of SEP project components will be located within Zone D, the electrical interconnection to the Blythe substation requires the development of a gen-tie to be located in Compatibility Zone C (in which the Blythe substation is located). Among the general compatibility criteria set forth in the ALUCP is for objects having a height more than 70 feet in Zone C or 150 feet in Zone D (Riverside County Airport Land Use Commission, 2004). SEP's tallest structure, the HRSG exhaust stack, is expected to be 140 feet in height, which does not exceed the Zone D height limit and which the FAA has determined is not a hazard to air navigation (Appendix 3.11B). The 161-kV gen-tie located within Zone C will not exceed 70 feet in height and, therefore, will not require review.

Additional compatibility criteria that apply to the project are included in Chapter 2 of the ALUCP. SEP will be constructed on two adjacent parcels. The northern parcel (APN 824-101-013) is split by the boundaries of three Airport Compatibility Zones (B1, C, and D) while the southern parcel (APN 824-101-012) is split by the boundaries of two Airport Compatibility Zones (C and D). No development is planned to occur within Zone B1. Since SEP will contain structures that exceed 70 feet in height, the project owner has analyzed the various criteria in the ALUCP and determined that SEP structures greater than 70 feet in height will not pose an obstruction. Please see Section 3.11, Traffic and Transportation, for additional information.

ALUCP Section 3.3.5 - Parcels Lying within Two or More Compatibility Zones – specifies that a parcel that is split by Compatibility Zone boundaries be considered as if it were multiple parcels divided at the compatibility zone boundary line. As noted above, the SEP site is split by three Compatibility Zones (B1, C, and D). As such, review of ALUCP compliance is performed for each parcel bound by the Compatibility Zone. The SEP Compatibility Zone B1 parcel does not contain any development, and therefore complies with ALUCP Section 3.3.5. The electrical interconnection considered will not exceed the Compatibility Zone C 70-foot height restrictions and also complies with ALUCP Section 3.3.5. Moreover, all of the SEP

[39] The BEP II license evaluated consistency of the project with the Blythe Airport Comprehensive Land Use Plan (CLUP). The Blythe ALUCP was adopted in October 2004, which replaced and otherwise supersedes the CLUP. (Riverside County ALUC, Resolution No. 04-04). Thus, the airport influence areas specified in the ALUCP apply to this PTA.

components will be in Zone D except for the gen-tie infrastructure, whereas the licensed BEP II project contained various facility components located in both Zones C and D.

ALUCP Section 4.2.3 – Land Uses of Special Concerns - identifies safety compatibility criteria for land uses of special concern to minimize the risks associated with an off-airport aircraft accident or emergency landing. These land uses of special concern encompass critical community infrastructure, such as power plants, electrical substations, public communications facilities, and other critical community infrastructure. The ALUCP Section 4.2.3(d) specifies Compatibility Zone criteria for Critical Community Infrastructure, including power plants and electrical infrastructure and prohibits these uses within Zone A and within Zones B1 and B2 (such uses are prohibited unless no other feasible alternative site exists and the facility is designed in a manner that minimizes its susceptibility to damage from an aircraft accident). No SEP feature is located within Zones A, B1, and B2. Therefore, SEP is consistent with the ALUCP Section 4.2.3(d) safety compatibility criteria.

ALUCP Section 4.3.3 - ALUC Review of Height of Proposed Objects - provides that ALUC review is required if proposed objects will exceed 70 feet in Zones C and D. As noted above, the City's General Plan incorporates the ALUCP and is, therefore, consistent with the ALUCP. (General Plan Policy 21.) Pursuant to the City's General Plan and ALUCP, if not for the exclusive jurisdiction of the CEC to license thermal power plants with a nominal generating capacity of more than 50 MW, the City will review the project for consistency with the ALUCP (General Plan Policy 21, and Implementation Policy at p. 3-25).

ALUCP Section 4.3.4 - Height Restriction Criteria - provides that generally, there is no concern with the height of objects up to 70 feet tall within Compatibility Zones C and D unless the object is located on high ground or it is a solitary object (e.g., an antenna) more than 35 feet taller than other nearby objects. The tallest project feature is the exhaust stack, which the FAA has determined is not a hazard to air navigation and is not more than 35 feet taller than other nearby features (the HRSG is 120 feet above ground level).

ALUCP Section 4.3.7 identifies that new land uses that may cause visual, electronic, or increased bird strike hazards to aircraft in flight shall not be permitted within any airport's influence area. Specific characteristics to be avoided are sources of dust, steam, or smoke which may impair pilot visibility or any proposed use that creates an increased attraction for large flocks of birds. The project is not expected to emit visible dust during operation. Thermal plumes generated by the SEP operation of the combustion turbine, auxiliary boiler, and cooling tower are not expected to pose a threat to aviation. An analysis of thermal plumes from each of the sources has been performed and is detailed in Section 3.11, Traffic and Transportation. Further analysis of SEP's thermal plumes and compliance with ALUCP Section 4.3.7 is included in Section 3.11. Visible plume impacts to aviation are expected to be the same or less than the licensed project. The 2012 Commission Order approved an 11-cell cooling tower while SEP proposes a 10-cell cooling tower. Visible plumes are not expected from the combustion turbine or auxiliary boiler stacks. The SEP steam cycle has steam vents for safety purposes. The operation of these vents occurs during emergency conditions and is not expected to result in visible plumes.

As part of the licensed project, the Commission also reviewed the possibility of the evaporation ponds attracting birds, which could impact aviation safety. The licensed project contained two evaporation ponds totaling 6.5 acres and SEP's two evaporation ponds total approximately 5 acres. Therefore, the potential aviation safety impacts because of SEP's evaporation ponds are expected to be the same or less than the licensed project.

Although SEP will not have features over 200 feet above ground level, the project owner filed a FAA Form 7460-1, Notice of Proposed Construction or Alteration. The FAA determined that there is no hazard to air navigation. Please see Section 3.11, Traffic and Transportation, for additional information.

3.6.3 Cumulative Impacts

No changes to previously identified cumulative impacts in the Final Decision (02-AFC-01C), as amended, will result from the approval of this Petition.

3.6.4 Mitigation Measures

No changes to previously identified impacts to land use will result from the approval of this Petition. Therefore, no additional resource protection measures, beyond those required in the Final Decision (02-AFC-01C), as amended, are necessary.

3.6.5 Consistency with LORS

The project modification will comply with applicable land use LORS.

3.6.6 Conditions of Certification

This Petition requires editorial change to the land use Conditions of Certification Land-5 from the Final Decision (02-AFC-01C), as amended.

> **LAND-5:** The project owner shall obtain the necessary approval(s) from the City and complete any lot merger or lot line adjustments necessary to ensure that the proposed project, including associated facilities and improvements, but excluding linear facilities, will be located on a single legal ~~lot~~**parcel** and owned by one entity. The ~~BEP II~~**project** facilities shall be constructed substantially as shown on the drawings submitted to and approved by the City of Blythe. It shall remain a single ~~lot~~**parcel** for the life of the power plant.
>
> **Verification:** At least 30 days prior to the start of construction, the project owner shall provide the CPM with proof of completion of the above adjustments or satisfactory evidence that no such adjustments are necessary. Prior to submitting an application to the City, the project owner shall submit the proposed ~~lot~~**parcel** configuration to the CPM for review and approval.

3.6.7 References Cited

Caithness Blythe II, LLC. 2009. *Petition to Amend the Blythe Energy Project Phase II (02-AFC-1C)*. October 26.

California Energy Commission (CEC). 2005. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C*. Sacramento, California. December.

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City of Blythe. 2013. Code of Ordinances Title 17 Zoning. Accessed online at: https://www.municode.com/library/ca/blythe/codes/code_of_ordinances?nodeId=CD_ORD_TIT17ZO.

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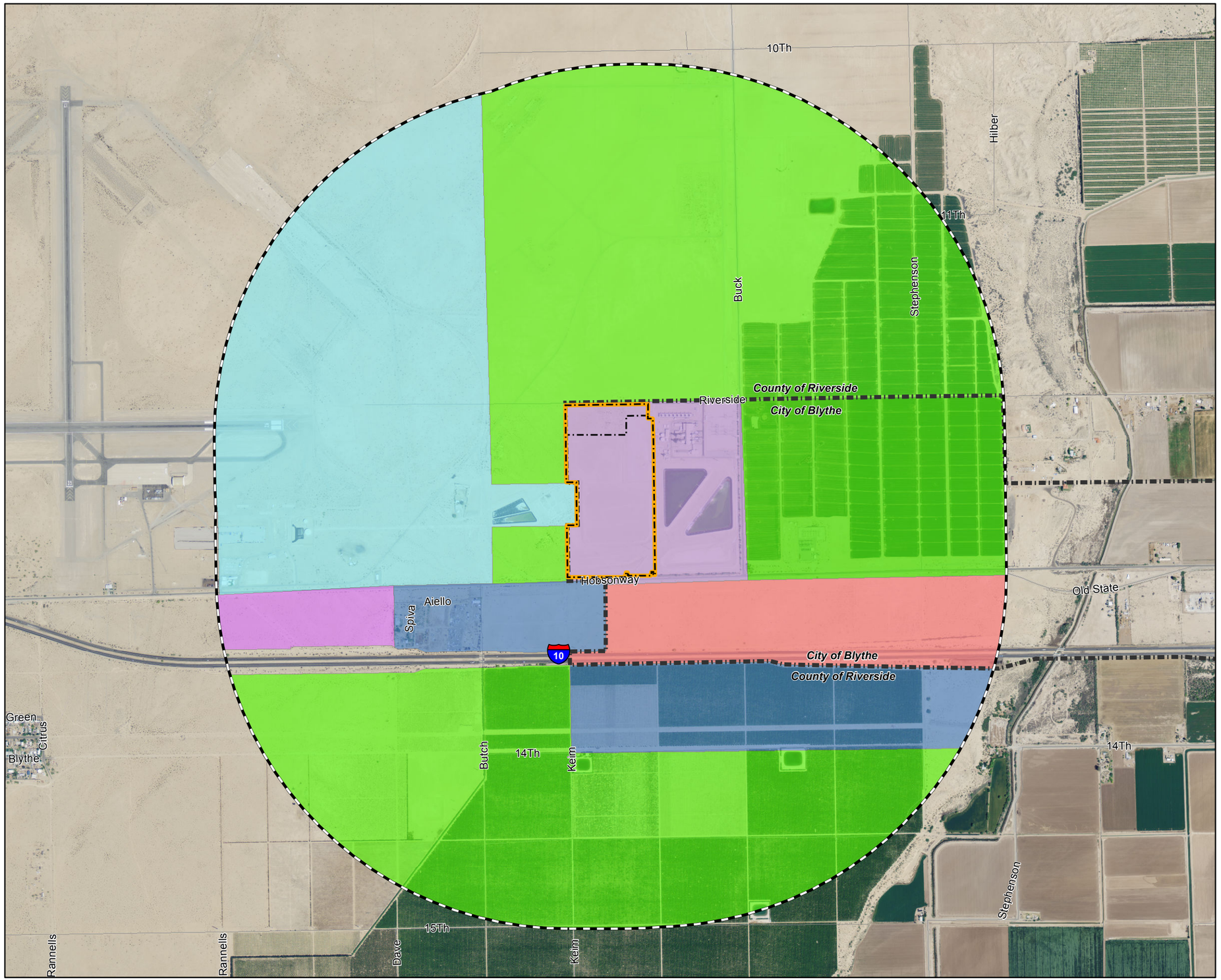
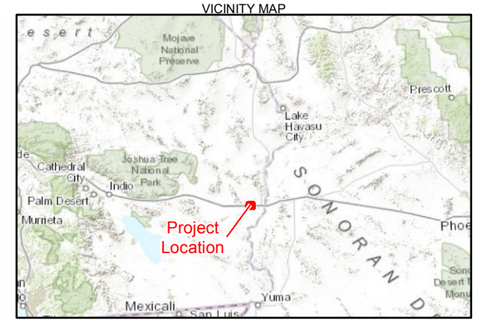


VICINITY MAP



LEGEND

- Property Boundary
- 1-Mile Buffer
- City of Blythe

Riverside County

- Agriculture
- Light Industrial
- Public Facilities
- Rural Community – Estate Density Residential
- Rural Community – Very Low Density Residential

City of Blythe

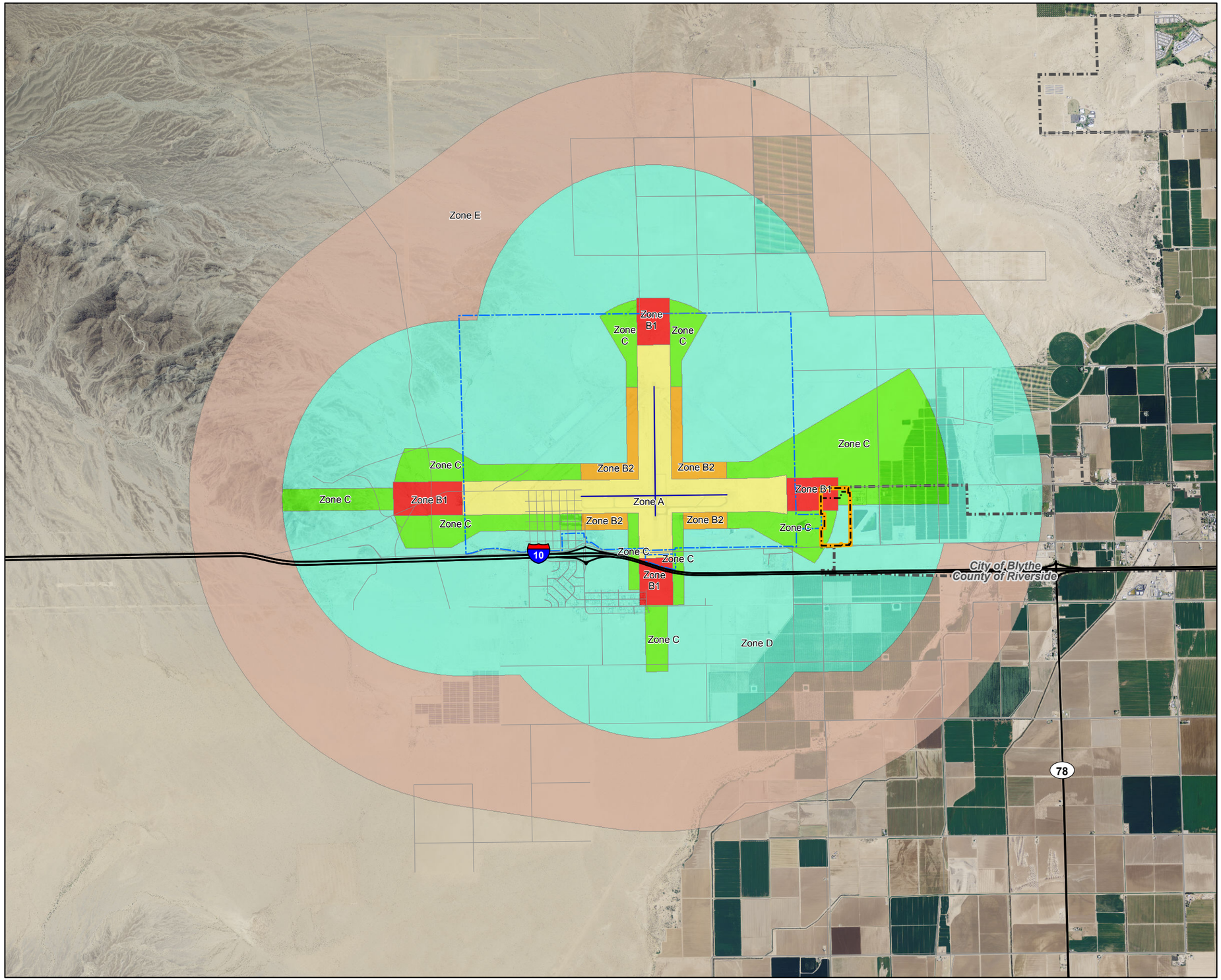
- Agriculture
- General Industrial
- Service Industrial

Image Source: NAIP 2012
Riverside County GIS, March 2014
City of Blythe, 2008

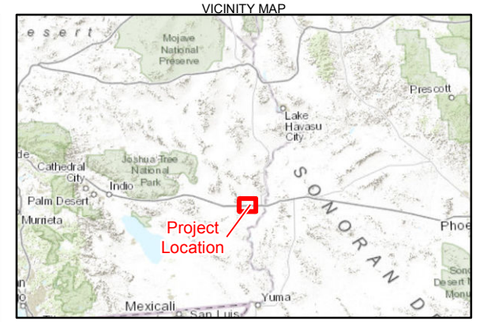
N

0 1,500 3,000
Feet

FIGURE 3.6-1
City of Blythe Land Use and Zoning Designations
Sonoran Energy Project
Riverside County, California



VICINITY MAP



LEGEND
Compatibility Zones

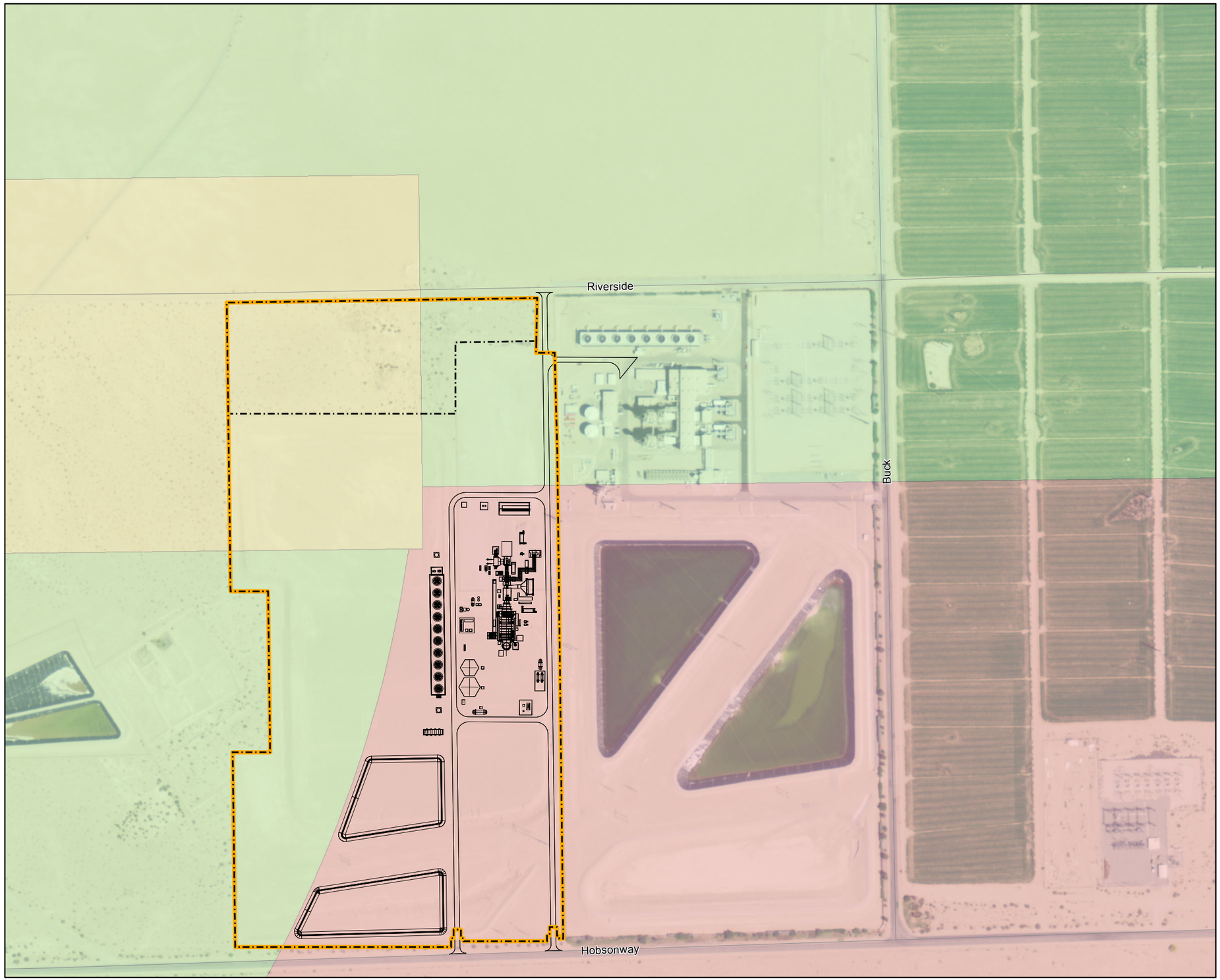
- Zone A
- Zone B1
- Zone B2
- Zone C
- Zone D
- Zone E
- Property Boundary
- Airport Property Line
- Runways
- City of Blythe

Image Source: NAIP 2012
Riverside County GIS, March 2014

0 4,500 9,000
Feet

N

FIGURE 3.6-2A
Airport Land Use Compatibility
Sonoran Energy Project
Riverside County, California



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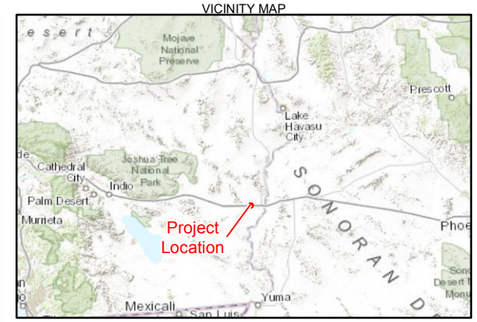

LEGEND

- Property Boundary

Airport Compatibility Zones

- Zone B1
- Zone C
- Zone D

Image Source: NAIP 2012

N

0 400 800

Feet

FIGURE 3.6-2B
Airport Land Use Compatibility
Sonoran Energy Project
Riverside County, California

3.7 Noise and Vibration

The project modification discussed herein will not cause additional impacts to noise beyond those identified in the Commission's Final Decision (02-AFC-01C), as amended. Any potential noise impacts associated with the proposed modification will be less than significant.

3.7.1 Environmental Baseline Information

The affected environment has not substantially changed since the Final Decision (02-AFC-01C), as amended, and potential impacts to noise are the same as previously analyzed. SEP is located in the City of Blythe on a previously disturbed site adjacent to the existing BEP. The project will be constructed on up to 34 acres within the existing 76-acre licensed site. The 76-acre SEP site is bounded to the north by Riverside Avenue, to the east by the existing BEP facility, and to the south by Hobsonway. There are currently no structures to the west of the proposed plant location. The project site is enclosed by a permanent exclusionary fence and is located on fill material. The electrical interconnection is via a 161-kV line connecting to the existing Buck Boulevard substation to tie into an existing transmission line. The interconnection will be built on the previously surveyed SEP site.

Land uses in the vicinity of the project consist predominantly of agricultural and industrial uses. Blythe Airport is located to the west, beyond which is vacant and agricultural land. To the south is I-10, the main transportation corridor in the area. The site is adjacent to the operational existing BEP. Several solar energy projects are planned in the broader area, including Blythe Mesa Solar Project, Blythe Airport Solar I Project, and Palo Verde Mesa Solar Project.

The nearest noise sensitive use is a residence located at 16531 Hobsonway, about 2,700 feet from the site and outside of the City of Blythe's limits. This residence was previously evaluated as it was, and remains, the closest sensitive receptor to the project site.

3.7.2 Environmental Analysis

The anticipated construction activities associated with the project remain unchanged from those analyzed previously. Similarly, the project owner anticipates that the change in turbine technology does not alter the project's ability to comply with the existing conditions of certification, including NOISE-6, which establishes a 49 dBA sound level limit at the closest residence. As such, the project owner proposes no material changes to the existing conditions of certification governing construction or operational noise.

A sound level of 49 dBA is consistent with the City of Blythe's General Plan requirements of 60 dBA Ldn at the boundary of noise-sensitive land uses. Although the County standards do not apply to projects within the City of Blythe, the Final Staff Assessment (FSA) and compliance noise surveys for the existing BEP (2004) document that the existing levels of 47 dBA $L_{90(4\ hr)}$ at the closest noise sensitive receptor already exceed the County of Riverside's most stringent guideline of 45 dBA at night (10 p.m. to 7 a.m.), using either the Leq metric referenced by the County General Plan and Municipal Code or the maximum level referenced in Ordinance No. 847.[40] The County Municipal Code states that when the ambient levels exceed those specified, "the allowable noise exposure standard shall be increased in five decibel increments in each category as appropriate to encompass the ambient noise level." A project sound level of 49 dBA is consistent with one 5-dBA increment and given the level of existing noise, additional

[40] It should also be noted that establishment of an Lmax limit of 45 dBA is not typical and the intent may have been to limit the maximum Leq rather than the Lmax. The Lmax metric represents the loudest 1/8 of second during a measurement period. This level can be readily exceeded by ambient sources, such as wind blowing through vegetation. In addition, establishing that an Lmax is conclusively associated with the source interest as opposed to other ambient source can be very challenging.

5-dBA increments will be allowed. A project level of 49 dBA will also result in an increase of less than 10 dBA, consistent with the County's CEQA thresholds applied to the Blythe Solar Mesa Solar Project.

3.7.3 Cumulative Impacts

No changes to previously identified cumulative impacts in the Final Decision (02-AFC-01C), as amended, will result from the approval of this Petition.

3.7.4 Mitigation Measures

No changes to previously identified noise impacts will result from the approval of this Petition. Therefore, no additional resource protection measures, beyond those required in the Final Decision (02-AFC-01C), as amended, are necessary.

3.7.5 Consistency with LORS

The project modification will comply with applicable noise LORS.

The project site is located within the City of Blythe and the City's noise regulations are unchanged from those analyzed in the previous Commission Decision.[41] As previously analyzed, Blythe Municipal Code 17.28.010 is the City ordinance that addresses noise. Section 17.28.010 establish a nuisance style limit as follows:

> No use shall be established which causes or emits any dust, gas, smoke, fumes, odors, noise or vibrations which are or may be detrimental to other properties in the neighborhood or to the occupants thereof. (Ord. 595 §5.00, 1982)

The City of Blythe Noise Element contains a policy prohibiting new development of industrial, commercial or other noise-generating land uses if resulting noise levels exceed 60 dBA Ldn or CNEL at the boundary of areas containing or planned and zoned for residential or other noise-sensitive land uses.

Although the City General Plan has since been adopted and is applicable to the project, compliance with County noise LORS is also addressed because the FSA discussed County noise LORS. The County of Riverside regulations have been revised since the Commission Decision and the revised County regulations are summarized below for completeness.

Riverside County. The Riverside County General Plan's Noise Element (2007) provides noise compatibility guidelines for various land uses. The Land Use Compatibility Guidelines state that the normally acceptable sound level for residential low density, single family, duplex, and mobile homes is 60 dBA day-night average sound level (Ldn) or CNEL and 70 dBA Ldn is considered conditionally acceptable. For a steady-state source that operates 24 hours a day, a 60 dBA Ldn is equivalent to 54 dBA Leq and 70 dBA Ldn is equivalent to 64 dBA Leq.

The General Plan also outlines multiple noise policies, several of the more pertinent policies are summarized below:

- Policy N1.2. Guide noise-tolerant land uses into areas irrevocably committed to land uses that are noise-producing, such as transportation corridors or within the projected noise contours of any adjacent airports.
- Policy N 1.4. Determine if existing land uses will present noise compatibility issues with proposed projects by undertaking site surveys.

[41] The Draft Blythe General Plan was analyzed by staff in the FSA and has now been formally adopted by the City. The Noise Element of the 2025 General Plan (2007) provides that new development of industrial, commercial or other noise-generating land uses will not be permitted if resulting noise levels will exceed 60 dBA Ldn (or CNEL) at the boundary of areas containing or planned and zoned for residential or other noise-sensitive land uses.

- Policy N 2.2. Mitigate exterior and interior noises to the levels listed in Table 3.7-1 to the extent feasible, for stationary sources:

Table 3.7-1 Stationary Source Land Use Noise Standards [a]

Land Use	Interior Standards	Exterior Standards
Residential		
10:00 pm to 7:00 am	40 L_{eq} (10 minute)	45 L_{eq} (10 minute)
7:00 am to 10 pm	55 L_{eq} (10 minute)	65 L_{eq} (10 minute)

[a] These are only preferred standards; final decision will be made by the Riverside County Planning Department and Office of Public Health.

- Policy N 3.3. Ensure compatibility between industrial development and adjacent land uses. To achieve compatibility, industrial development projects may be required to contain noise mitigation measures to avoid or minimize project impacts on adjacent uses.
- Policy N 3.7. Encourage noise-tolerant land uses such as commercial or industrial to locate in areas already committed to land uses that are noise producing.
- Policy N4.1. Prohibit facility-related noise, received by any sensitive use, from exceeding the following worst-case noise levels:
    a. 45 dBA 10-minute Leq between 10:00 p.m. and 7:00 a.m.
    b. 65 dBA 10-minute Leq between 7:00 a.m. and 10:00 p.m.
- Policy N4.7. Evaluate noise producers for the possibility of pure-tone producing noises. Mitigate any pure tones that may be emitted from a noise source.
- Policy N 12.1. Minimize the impacts of construction noise on adjacent uses within acceptable practices.
- Policy N 12.2. Ensure that construction activities are regulated to establish hours of operation in order to prevent and/or mitigate the generation of excessive or adverse noise impacts on surrounding areas.
- Policy N12.4. Require that all construction equipment utilizes noise reduction features (e.g. mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer.

Title 7 of the Riverside Municipal Code, “Noise Control” establishes what constitutes a public nuisance or are otherwise prohibited. Chapter 7.25 provides the following limits:

Table 7.25.010A

Exterior Noise Standards		
Land Use Category	**Time Period**	**Noise Level**
Residential	Night (10 p.m. to 7 a.m.) Day (7 a.m. to 10 p.m.)	45 dBA 55 dBA
Office/commercial	Any time	65 dBA
Industrial	Any time	70 dBA
Community support	Any time	60 dBA
Public recreation facility	Any time	65 dBA
Nonurban	Any time	70 dBA

Table 7.25.010B

Land Use Category/Zoning Matrix	
Land Use Category	**Underlying Zone**
Residential	RE, RA-5, RR, RC, R-1-1/2 acre, R-1-13000, R-1-10500, R-1-8500, R-1-7000, R-3-2500, R-3-4000, R-3-3000, R-3-2000, R-3-1500, R-4
Office/commercial	O, CRC, CR-NC, CR, CG
Industrial	BMP, I, AIR
Community support	Any permitted zone
Nonurban	Any permitted zone

(Ord. 6967 § 5, 2007; Ord. 6273 § 1 (part), 1996)

The code states that "Unless a variance has been granted as provided in this chapter, it shall be unlawful for any person to cause or allow the creation of any noise which exceeds the following:

1. The exterior noise standard of the applicable land use category, up to five decibels, for a cumulative period of more than thirty minutes in any hour [L50]; or
2. The exterior noise standard of the applicable land use category, plus five decibels, for a cumulative period of more than fifteen minutes in any hour [L25]; or
3. The exterior noise standard of the applicable land use category, plus ten decibels, for a cumulative period of more than five minutes in any hour [L8.3]; or
4. The exterior noise standard of the applicable land use category, plus fifteen decibels, for the cumulative period of more than one minute in any hour [L1.67]; or
5. The exterior noise standard for the applicable land use category, plus twenty decibels or the maximum measured ambient noise level, for any period of time.

In addition, the codes notes that: "If the measured ambient noise level exceeds that permissible within any of the first four noise limit categories, the allowable noise exposure standard shall be increased in five decibel increments in each category as appropriate to encompass the ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise."

Chapter 7.35 of the code provides the following limitations for construction activities as follows:

> Construction: Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, grading or demolition work between the hours of 7:00 p.m. and 7:00 a.m. on week days and between 5 p.m. and 8 a.m. on Saturdays or

> at any time on Sunday or federal holidays such that the sound therefrom creates a noise disturbance across a residential or commercial property line or at any time exceeds the maximum permitted noise level for the underlying land use category, except for emergency work or by variance.

In addition, Chapter 7.35 notes that the following are exempted from Title 7 and Chapter 7.40 provides for a variance procedure:

> Federal or State Preempted Activities. The provisions of this Chapter shall not apply to any other activity the noise level of which is regulated by state or federal law.

Chapter 15.04(F) of the County Code establishes time restrictions for construction activities in unincorporated areas as follows:

1. Whenever a construction site is within one-quarter of a mile of an occupied residence or residences, no construction activities shall be undertaken between the hours of 6:00 p.m. and 6:00 a.m. during the months of June through September and between the hours of 6:00 p.m. and 6:00 a.m. during the months of October through May. Exceptions to these standards shall be allowed only with the written consent of the building official.
2. The generation of construction noise other than as permitted in subsection (F)(1) of this section, shall be a violation of this title, and the building official or his or her designee shall have the authority to undertake enforcement actions in accordance with the procedures, remedies and penalties for violations as provided for in Riverside County Ordinance No. 725 (Chapter 1.16 of this code), which is incorporated into this chapter by reference.

Riverside County's Ordinance No. 847 provides additional noise regulations. Namely a maximum noise level limit of 45 dBA. The ordinance provides for several specific exemptions, including

- Private construction projects located one-quarter of a mile or more from an inhabited dwelling
- Private construction projects located within one-quarter of a mile from an inhabited dwelling, provided that:
    1. Construction does not occur between the hours of 6 p.m. and 6 a.m. during the months of June through September.
    2. Construction does not occur between the hours of 6 p.m. and 7 a.m. during the months of October through May.

In addition the above exemptions, the ordinance provides for the following exceptions:

> Continuous Events Exceptions. An application for a continuous events exception shall be made to the Planning Director on forms provided by the Planning Department and shall be accompanied by the appropriate filing fee. Upon receipt of an application for a continuous events exception, the Planning Director shall set the matter for public hearing before the Planning Commission, notice of which shall be given as provided in Section 18.26.c. of Riverside County Ordinance No. 348. Notwithstanding the above, an application for a continuous events exception that is associated with an application for a land use permit shall be processed concurrently with the land use permit in the same manner that the land use permit is required to be processed.

In considering such exception request, the ordinance outlines the following factors to consider prior to approving an exception:

> Requirements for Approval. The appropriate decision-making body or officer shall not approve an exception application unless the project owner demonstrates that the activities described in the application will not be detrimental to the health, safety, or

> general welfare of the community. In determining whether activities are detrimental to the health, safety or general welfare of the community, the appropriate decision making body or officer shall consider such factors as the proposed duration of the activities and their location in relation to sensitive receptors. If an exception application is approved, reasonable conditions may be imposed to minimize the public detriment, including, but not limited to, restrictions on sound level, sound duration and operating hours.

Ordinance No. 847 specifically states: "This ordinance is not intended to establish thresholds of significance for the purpose of any analysis required by the California Environmental Quality Act and no such thresholds are hereby established." As noted by Riverside County in the recent Blythe Mesa Solar Project EIR/EA (June 2014), "[a]ccordingly, noise in excess of the standards set in Ordinance 847 does not necessarily create a significant impact." In establishing the CEQA significance criteria for the Blythe Mesa Solar Project, the County states that "[t]ypically, an increase in noise level of at least 5 A-weighted decibels (dBA) is noticeable by most people and in a residential setting would not be a substantial adverse impact. An increase in noise level of 10 dBA is judged by most people as a doubling of the sound level, which would be considered a substantial adverse impact."

3.7.6 Conditions of Certification

Proposed modification of Conditions of Certification NOISE-6 is presented below. The modification to NOISE-6 contains a clarification for the numeric noise limit and the post-construction noise monitoring procedures. No changes are proposed to the Verification.

NOISE-6

The project design and implementation shall contain appropriate noise mitigation measures adequate to ensure that the noise level produced by operation of the project will not exceed an hourly average noise level (Leq) of more than 49 dBA, measured at any **existing** residence.

No new pure tone components may be introduced. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints. Steam relief valves shall be adequately muffled to preclude noise that draws legitimate complaints.

Within 30 days of the project's first achieving a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct a 25-hour community noise survey at or near the residence at 16531 Hobsonway. The noise survey shall also contain short-term measurement of one-third octave band sound pressure levels to ensure that no new pure- tone noise components have been introduced. If the results from the noise survey indicate that the noise level as a result of the plant operations exceeds the noise standard listed above for any given hour during the 25-hour period, mitigation measures shall be implemented to reduce noise to a level of compliance with these limits. If the results from the noise survey indicate that pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.

The measurement of power plant noise for the purposes of demonstrating compliance with this condition of certification may alternatively be made at a location, acceptable to the CPM, closer to the plant (e.g., 400 feet from the plant boundary) and this measured level then mathematically extrapolated to determine the plant noise contribution at the affected residence. The character of the plant noise shall be evaluated at the affected residential locations to determine the presence of pure tones or other dominant sources of plant noise.

3.7.7 References

Caithness Blythe II, LLC. 2009. *Petition to Amend the Blythe Energy Project Phase II (02-AFC-1C)*. October 26.

California Energy Commission (CEC). 2005. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C*. Sacramento, California. December.

California Energy Commission (CEC). 2012. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C, Amendment Order No. 12-0425-3a.* Sacramento, California. April.

3.8 Public Health

This section presents the methodology and results of a human health risk assessment performed to assess potential impacts and public exposure associated with airborne emissions from the construction and operation of SEP.

Emissions of combustion byproducts that have established NAAQS and CAAQS (referred to as "criteria pollutants") are addressed in Section 3.1, Air Quality. Discussion of the potential health risks associated with these criteria pollutants is presented in this section.

The quantities of hazardous materials proposed to be stored onsite, a description of their uses, and the potential concerns regarding these materials are presented in Section 3.5, Hazardous Materials Management. A discussion of the potential concerns associated with electromagnetic field exposure is presented in Section2.3,Transmission Line Safety and Nuisances. To ensure worker safety during operation and construction, safe work practices will be followed (see Section 3.15, Worker Safety and Fire Protection).

3.8.1 Setting

SEP is located within the City of Blythe, approximately 5 miles west of the center of the city. The SEP site is a 76-acre parcel immediately adjacent to the existing, operational BEP.[42] SEP was acquired from Caithness Blythe II, LLC, by AltaGas Sonoran Energy Inc. in 2014. SEP was originally licensed by the CEC in 2000 as the Blythe II Energy Project.

SEP is a nominal 569-MW, combined-cycle power plant consisting of a GE 7HA.02 gas turbine, one supplemental-fired HRSG, one ST, an induced-draft cooling tower, an auxiliary steam boiler, an aqueous ammonia storage tank, an emergency diesel fire pump and ancillary facilities. This new proposed configuration will completely replace the licensed project configuration.

Construction of SEP will require onsite laydown and construction parking areas. Approximately 13.5 acres of construction laydown will be required. Construction worker parking for SEP will also be provided onsite. Construction worker parking will be located south of the construction area while the laydown areas will be located west and north of the construction area.

3.8.1.1 Project Overview as it Relates to Public Health

Air will be the dominant pathway for potential public exposure to noncriteria pollutants released by SEP. Emissions to the air will consist primarily of combustion by-products produced by the gas turbine/HRSG and auxiliary boiler. Potential health risks from combustion emissions will occur almost entirely by direct inhalation. To be conservative, additional pathways for dermal absorption, soil ingestion, mother's milk ingestion and homegrown produce ingestion were part of the health risk modeling. The health risk assessment for SEP was conducted in accordance with guidance established by the California Office of Environmental Health Hazard Assessment (OEHHA)[43] and the ARB in 2015. [44] The new OEHHA guidance

[42] 99-AFC-8C

[43] OEHHA. Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, February 2015.

[44] ARB. Consolidated Table of OEHHA/ARB-Approved Risk Assessment Health Values, May 15, 2015, http://www.arb.ca.gov/toxics/healthval/contable.pdf.

incorporates numerous changes, including age-specific cancer potency factors, breathing rates, and exposure durations. Sensitivity studies performed by the San Joaquin Valley Air Pollution Control District, the SCAQMD, and others have indicated that application of the new OEHHA risk guidance results in calculated risks that are two to three times higher than OEHHA's previous methodology for identical sources.

SEP will use new, efficient combined-cycle technology to minimize emissions of pollutants per unit of electric energy generated, thus minimizing potential effects on public health. It is beyond the scope of this analysis to describe the public health benefits that derive from the generated electric power that is provided to homes, businesses, hospitals, and other societal institutions.

3.8.2 Affected Environment

The CEC defines sensitive receptors as infants and children, the elderly, the chronically ill, and any other members of the general population who are more susceptible to the effects of exposure to environmental contaminants than the population at large.[45] Therefore, schools (public and private), daycare facilities, convalescent homes, and hospitals are of particular concern.

Because sensitive individuals may be located at any residential site, risk-based standards apply not only to sensitive receptors, but also to existing residences and places where residences may be built without a change in zoning. If project impacts are protective of sensitive individuals at the point of maximum impact, they are protective at all locations. Identification of sensitive receptors is typically done to ensure that notice of possible impacts is provided to the community.

In accordance with guidance from the CEC, a search was conducted for sensitive receptors within 6 miles of the project site. Based on the EDR *Offsite Receptor Report,*[46] sensitive receptors located within a 6-mile radius of the project area are as follows:

- 14 preschool/daycare centers
- 0 nursing homes
- 7 schools
- 24 hospitals, clinics, and/or pharmacies
- 1 college

Daycare, hospital, park, preschool, and school receptors found within 6 miles are shown in Figure 3.8-1A. The nearest sensitive receptor is Palo Verde College, located more than 2 miles northeast of the project site. The nearest existing residence is approximately 2700 feet west-southwest of the facility, south of W. Hobsonway. There are also two state prisons located approximately 13 miles west-southwest of the proposed project. The locations of the residence and the state prisons relative to the project site are shown in Figure 3.8-1B. The names, locations, and receptor numbers for all of the sensitive receptors are listed in Appendixes 3.8A and 3.8B.

In accordance with the requirements of CEC siting regulation Appendix B (g)(9)(c), the project owner conducted a search of available health studies concerning the potentially affected populations within a 6-mile radius. While there are no ambient monitors measuring TACs in the MDAB, there is an ambient monitor in Riverside County in the upwind South Coast Air Basin (SoCAB).[47] Air quality and health risk data presented by ARB in the *California Almanac of Emissions and Air Quality – 2009 Edition* (ARB, n.d.) for Riverside County show that over the period 1990 through 2005, the average concentrations for the

[45] Siting regulation Appendix B (g)(9)(E)(i)

[46] The EDR receptor report was prepared for a site, also owned by APHUS, adjacent to SEP. Because SEP will be located farther away from the city of Blythe than the adjacent APHUS site, the sensitive receptors identified in the EDR report as being within 6 miles of the project are actually somewhat farther away.

[47] Air pollution transport from the SoCAB to the MDAB is discussed in Title 17 CCR Section 75000, Transport Identification.

top ten TACs have been substantially reduced, and the associated health risks are showing a steady downward trend as well.[48] ARB-estimated emissions inventory values for the top 10 TACs for 2012 for Riverside County and ambient levels and associated potential risks for Riverside County in the upwind SoCAB in 2013 are presented in Table 3.8-1.

Table 3.8-1. Top 10 TACs Emitted by All Sources in the Project Area

		2013 Levels and Risks, Riverside County[a]	
TAC	**2012 Emissions, MDAB Portion of Riverside County (tons/year)**	**Annual Average Concentration (ppbv)**	**Potential Carcinogenic Risk[b] (in 1 million)**
Acetaldehyde	24	1.27	6
Benzene	21	0.307	28
1,3-Butadiene	23	0.065	24
Carbon tetrachloride	0.00	0.082	22
Chromium, hexavalent	0.00	0.058 ng/m^3	9
Para-Dichlorobenzene	1	0.15 (2006)	10 (2006)
Formaldehyde	49	3.57	26
Methylene chloride	6	1.33	5
Perchloroethylene	2	0.02	<1
DPM[c]	539	2.4 µg/m^3 (2000)	720 (2000)
Total Health Risk[d]	--	--	131

Source: Emissions data provided by ARB staff, extracted from the CEIDARS. Air Quality Planning and Science Division, Sacramento, CA - Rundate: September 22, 2014. TAC and Risk data from ARB Annual Toxic Site Summaries, http://www.arb.ca.gov/adam/toxics/toxics.html.

Notes:

[a] There are no ambient monitors in the MDAB that measure air toxics, so data from the Rubidoux, Riverside County ambient monitor in the SoCAB, which is upwind of the MDAB, is provided as a conservative estimate of background concentrations and health risks.

[b] Health Risk represents the number of excess cancer cases per million people based on a 70-year exposure to the annual average concentration. Health risk represents only the compounds listed in this table and only those with data for the year. There may be other significant compounds for which monitoring and health risk information is not available. The para-dichlorobenzene concentration and risk in 2006 are used for 2013. Para-dichlorobenzene was composed of values below the LOD for the later years; therefore, ARB stopped monitoring for para-dichlorobenzene in March 2007.

[c] The diesel particulate matter (DPM) concentrations are estimates for the SoCAB based on receptor modeling and are available only for selected years.

[d] Total Health Risk shown excludes DPM because DPM concentrations are not available for 2013.

ARB = California Air Resources Board
CEIDARS = California Emission Inventory Development and Reporting System
µg/m3 = micrograms per cubic meter
ng/m3 = nanograms per cubic meter
ppbv = parts per billion by volume
MDAB = Mojave Desert Air Basin
SoCAB = South Coast Air Basin
TAC = toxic air contaminant

[48] Although ARB released an updated issue of the almanac in 2014, with the exception of (DPM), the updated version does not contain data on TACs.

A variety of studies have been published regarding cancer and respiratory illnesses and diseases in Riverside County and in the broader MDAB. In addition, the local public health department, Riverside County Health and Human Services, provides information on its website regarding public health issues for county residents (Riverside County, 2013). Asthma diagnosis rates in Riverside County are higher than average rates throughout the state for adults but slightly lower than the statewide average for children. The percentage of adults who have been diagnosed with asthma was 16.4 percent in 2007 through 2009, compared with 13.3 percent of the population statewide. Rates for children were 11.1 percent compared with 11.9 percent statewide for the same time period. According to the Centers for Disease Control (CDC), asthma is triggered by a variety of factors including dust, pollen, smoke, smog, and insects such as cockroaches.[49]

Cancer death rates in Riverside County remained relatively stable between 2006 and 2010, averaging 171.2 per 100,000. However, cancer death rates in the County remain slightly higher than the statewide average of 151.8 per 100,000 population (CDC, 2011).[50]

An additional respiratory illness for the area is the disease of Valley Fever (Coccidioidomycosis), which is found in six southwestern states including California. Riverside County is a suspected endemic area for Coccidioidomycosis according to the CDC (CDC, 2015c). In a recent study on the impact of Valley Fever in Riverside County between 2006 and 2010, the county had 305 reported cases, with 16 reported deaths. However, the County states that "At just over three cases for every 100,000 people, Coccidioidomycosis does not create an excess disease burden in Riverside County" (Riverside County, 2012).

3.8.3 Environmental Analysis

3.8.3.1 Air Toxics Exposure Assessment

This public health section discusses the sources and different kinds of air emissions associated with construction and operation of the project (see Section 3.1, Air Quality), the methodology used in performing the screening-level health risk assessment, and the results of the assessment of potential health risks from the project.

Project emissions to the air will consist of combustion byproducts from the natural-gas-fired gas turbine, auxiliary boiler, and cooling tower and from routine testing of the emergency diesel fire pump engine. Inhalation is the main pathway by which air pollutants can potentially cause public health impacts. Other pathways, including dermal absorption and ingestion of soil, homegrown vegetables, and mother's milk, are also evaluated for potential exposure. As discussed below, these health impacts will not be significant.

Construction emissions are presented in detail in Section 3.1, Air Quality, and Appendix 3.1C, along with an air dispersion analysis demonstrating that with the exception of the state 24-hour PM_{10} standard (which is already being exceeded), ambient air quality standards will not be exceeded during project construction. The dominant emission with potential health risk is DPM from combustion of diesel fuel in construction equipment (e.g., cranes, dozers, excavators, graders, front-end loaders, backhoes). The analysis presented in Appendix 3.1F demonstrates that the potential incremental carcinogenic risk of DPM emissions during construction of SEP will be less than significant.

To evaluate potential health risks during project operation, the measures of these risks are first described in terms of the types of public health effects and the significance criteria and thresholds for those effects.

[49] CDC, "Common Asthma Triggers," http://www.cdc.gov/asthma/triggers.html

[50] CDC, "U.S. Cancer Statistics," http://apps.nccd.cdc.gov/DCPC_INCA/DCPC_INCA.aspx. Statistic is death rate for all cancer sites combined, male and female, all races.

3.8.3.2 Significance Criteria

Significance criteria exist for both cancer and noncancer risks, and are discussed separately below.

Incremental Cancer Risk

Cancer risk is the probability or chance of contracting cancer over a human lifespan (assumed to be 70 years). Carcinogens are assumed to have no threshold below which there will be no human health impact. Any exposure to a carcinogen is assumed to have some probability of causing cancer: the lower the exposure, the lower the cancer risk (i.e., a linear, no-threshold model). For previous power plant projects the CEC has used an incremental cancer risk greater than 10 in one million as a significance threshold for public health. The 10-in-one-million risk level is also used by the Air Toxics "Hot Spots" (AB 2588) program and California's Proposition 65 as the public notification level for air toxic emissions from existing sources.

Animal studies or human epidemiological studies (often based on workplace exposures) are used to estimate the relationship between the dose of a particular carcinogen and the resulting excess cancer risk. The cancer potency factor for that carcinogen is the slope of that dose-response relationship. Cancer risk is estimated by multiplying the dose of a particular carcinogen by its cancer potency factor. The dominant exposure pathway is inhalation; however, additional exposure pathways are considered in this screening HRA.

Noncancer Health Impacts

Noncancer health effects can be either long-term (chronic) or short-term (acute). In determining potential noncancer health risks from air toxics, it is assumed there is a dose of the TAC below which there will be no human health impact. The air concentration corresponding to this dose is called the Reference Exposure Level (REL). A noncancer health impact is measured in terms of a health hazard quotient for each TAC, which is the modeled maximum annual concentration of each TAC divided by its REL. Health hazard quotients for TACs affecting the same target organ are typically summed, with the resulting totals expressed as health hazard indices for each organ system. A health hazard index of less than 1.0 is considered by the regulatory agencies to be a less-than-significant health risk. For this HRA, as a conservative assumption that will tend to overpredict risk, all hazard quotients were summed regardless of target organ. This methodology leads to a conservative (upper bound) assessment.

Chronic toxicity is defined as adverse health effects from prolonged chemical exposure, caused by chemicals accumulating in the body. Because chemical accumulation to toxic levels typically occurs slowly, symptoms of chronic effects usually do not appear until long after exposure commences. The lowest no-effect chronic exposure level for a noncarcinogenic air toxic is the chronic REL. Below this threshold, the body is capable of eliminating or detoxifying the chemical rapidly enough to prevent its accumulation. Chronic RELs have been established for 8-hour and 1-year periods. The chronic health hazard indices were calculated as the sum of the chronic health hazard quotients, each of which is calculated as the chronic TAC concentration for the appropriate averaging period, divided by the chronic REL of the TAC.

Acute toxicity is defined as adverse health effects caused by a brief chemical exposure of no more than 24 hours. For most chemicals, the air concentration required to produce acute effects is higher than the level required to produce chronic effects because the duration of exposure is shorter. Because acute toxicity is predominantly manifested in the upper respiratory system at threshold exposures, all acute health hazard quotients are typically summed to calculate the acute health hazard index. This method leads to an upper-bound assessment.

The maximum 1-hour average concentrations of each TAC with acute health effects is divided by the specific TAC's acute 1-hour REL to obtain the 1-hour health hazard quotient for health effects caused by relatively high, short-term exposure to air toxics.

3.8.3.3 Construction Impacts

Construction of SEP, from site preparation and grading to commercial operation, is expected to take place from the second quarter of 2016 to the second quarter of 2018 (22 months of construction activity followed by up to approximately 4 months of commissioning activities).

No significant public health effects are expected during construction. Strict construction practices that incorporate safety and compliance with applicable LORS will be followed. In addition, mitigation measures to reduce air emissions from construction impacts will be implemented as described in Section 3.1, Air Quality.

Temporary air emissions from construction are presented in detail in Appendix 3.1C, along with a criteria pollutant air dispersion analysis that demonstrates with the exception of the state 24-hour PM_{10} standard (which is already being exceeded), ambient air quality standards will not be exceeded during project construction. The dominant emission with potential health risk is DPM from combustion of diesel fuel in construction equipment (e.g., cranes, dozers, excavators, graders, front-end loaders, backhoes). DPM emissions from on-site construction are summarized in Table 3.8-2.

Table 3.8-2. Maximum Onsite DPM Emissions During Construction

Emitting Activity	Pounds per Day	Tons per Year
Construction Equipment	0.51	0.05

The potential cancer risk of DPM emissions during project construction was evaluated using the annual emission rate in Table 3.8-2 and the HARP2 model. The incremental cancer risk based on the 22-month construction period is 0.03 in one million, well below the significance threshold of 10 in one million. This HRA was performed in accordance with OEHHA guidance, which recommends adjusting the 30-year lifetime exposure risk for the actual exposure period of 22 months.

Ambient air modeling for PM_{10}, CO, SO_2, and NO_2 was performed as described in Section 3.1.5 and Appendix 3.1F. Construction-related criteria pollutant emission impacts are temporary and localized, resulting in no long-term significant health impacts to the public.

Small quantities of hazardous waste may be generated during construction of the project. Hazardous waste management plans will be in place so the potential for public exposure is minimal. Refer to Section 3.13, Waste Management, for more information. No acutely hazardous materials will be used or stored onsite during construction (see Section 3.5, Hazardous Materials Management). To ensure worker safety during construction, safe work practices will be followed (see Section 3.15, Worker Safety and Fire Protection).

3.8.3.4 Operation Impacts

Potential human health impacts associated with the project result from exposure to air emissions from operation of the natural gas-fired gas turbine, auxiliary boiler, and wet cooling tower and from routine testing of the new emergency diesel fire pump engine. The noncriteria pollutants emitted from the project encompass certain VOCs and polycyclic aromatic hydrocarbons (PAHs) from the combustion of natural gas, ammonia from the SCR NOx control system, and DPM from combustion of diesel fuel in the emergency diesel fire pump engine. These pollutants are listed in Table 3.8-3, and the detailed emission summaries and calculations are presented in Air Quality Appendix 3.1B.

For criteria pollutants, the proposed project will encompass the use of BACT as required under MDAQMD rules. Emissions of criteria pollutants will not cause or contribute significantly to violations of the NAAQS or CAAQS as discussed in Section 3.1, Air Quality.

Air dispersion modeling results (see Section 3.1.5.4) show that emissions will not result in ambient concentrations of criteria pollutants that exceed the ambient air quality standards, with the exception of the state PM_{10} standard. For this pollutant, existing 24-hour average PM_{10} background concentrations already exceed ambient standards. These standards are intended to protect the general public with a wide margin of safety. Therefore, the project will not have a significant impact on public health from emissions of criteria pollutants.

The screening HRA containing potential impacts associated with emissions of noncriteria pollutants to the air from the project is presented in below. The HRA was prepared using the latest version (HARP 2) of the ARB's HARP model (ARB, 2015), the May 2015 health database (OEHHA/ARB, 2015), and the OEHHA Hot Spots Program Guidance Manual (OEHHA, 2015).

Table 3.8-3. Pollutants Emitted to the Air from the Project

Criteria Pollutants	
Carbon monoxide	Oxides of sulfur
Oxides of nitrogen	Volatile organic compounds
Particulate matter	
Noncriteria Pollutants	
Acetaldehyde	Hexane
Acrolein	Naphthalene
Ammonia	PAHs
Benzene	Propylene
1,3-Butadiene	Toluene
Ethylbenzene	Xylene
Formaldehyde	

3.8.3.5 Public Health Impact Study Methods

Emissions of noncriteria pollutants from the project were analyzed using emission factors previously approved by ARB and the EPA. Air dispersion modeling combined the emissions with site-specific terrain and meteorological conditions to analyze short-term and long-term arithmetic mean concentrations in air for use in the HRA. The EPA-recommended air dispersion model, AERMOD, was used along with five years (2009–2013) of compatible meteorological data from the Blythe airport meteorological station. The meteorological data combined surface measurements made at Blythe with upper air data from Elko, Nevada. The HARP 2 model was used with the air dispersion modeling output from the required air dispersion model, AERMOD, to perform the risk assessment.

Risk Analysis Method

The criteria pollutant modeling analysis was performed using the AERMOD model, the five-year meteorological data set described above, specific receptor grids, and the stack parameters for the combustion equipment (see Section 3.1, Air Quality). Receptors were also placed at the locations of the sensitive receptors shown in Figures 3.8-1A and 3.8-1B. The highest annual, 8-hour, and 1-hour average concentrations were used to determine cancer risk and acute health hazard index, and 8-hour and 1-year chronic health hazard indices, as appropriate. Health risks potentially associated with the estimated concentrations of pollutants in air were characterized in terms of potential lifetime

incremental cancer risk (for carcinogenic substances), or comparison with RELs for noncancer health effects (for noncarcinogenic substances).

Health risks were evaluated for a hypothetical Maximally Exposed Individual (MEI) located at the Point of Maximum Impact (PMI), as well as risks to the MEI at residential locations (MEIR). The cancer risk to the MEI at the PMI is referred to as the Maximum Incremental Cancer Risk, or MICR. Human health risks associated with emissions from the project are unlikely to be higher at any other location than at the PMI. If there is no significant impact associated with concentrations in air at the PMI location, it is assumed to be unlikely that there will be significant impacts in any other location. Health risks were also evaluated at the nearest residence. The PMI (and thus the MICR) is not necessarily associated with actual exposure because in many cases the PMI is in an uninhabited area. Therefore, the MICR is generally higher than the cancer risk to the nearest existing resident. Both risks are based on 24 hours per day, 365 days per year, 30-year lifetime exposure, consistent with the new OEHHA guidance.

Health risks are also assessed for the hypothetical Maximally Exposed Individual Worker (MEIW) at the PMI. This assessment reflects potential workplace risks, which have a shorter duration than residential risks. Workplace risks reflect 8 hours per day, 245 days per year, 25-year exposure, consistent with the new OEHHA guidance.

Health risks potentially associated with concentrations of carcinogenic pollutants in air were calculated as estimated incremental lifetime cancer risks. The total cancer risk at any specific location is found by summing the contributions from each carcinogen.

The inhalation cancer potency factors and RELs used to characterize health risks associated with modeled concentrations in air are taken from the *Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values* (ARB, 2015) and are presented in Table 3.8-4.

Table 3.8-4. Risk Assessment Health Values for Air Toxic Substances

Compound	Inhalation Cancer Potency (mg/kg-d) $^{-1}$	Chronic Inhalation Reference Exposure Level (µg/m^3)	Acute Inhalation Reference Exposure Level (µg/m^3)
Acetaldehyde	0.010	140	470 (1-hr) 300 (8-hr)
Acrolein	—	0.35	2.5 (1-hr) 0.7 (8-hr)
Ammonia	—	200	3,200
Benzene	0.10	3.0	27 (1-hr) 3.0 (8-hr)
1,3-Butadiene	0.60	2.0	660 (1-hr) 9.0 (8-hr)
Ethyl Benzene	0.0087	2,000	—
Formaldehyde	0.021	9	55 (1-hr) 9 (8-hr)
Hexane	—	7,000	—
Naphthalene	0.12	9.0	—

Table 3.8-4. Risk Assessment Health Values for Air Toxic Substances

Compound	Inhalation Cancer Potency (mg/kg-d) $^{-1}$	Chronic Inhalation Reference Exposure Level (µg/m^3)	Acute Inhalation Reference Exposure Level (µg/m^3)
PAHs (as BaP)	3.9	—	—
Propylene	—	3,000	—
Propylene oxide	0.013	30	3,100
Toluene	—	300	37,000
Xylenes	—	700	22,000
Diesel Particulate Matter	1.1	5.0	--

Notes:
µg/m3 = microgram(s) per cubic meter
mg/kg-d = milligram(s) per kilogram per day

3.8.3.6 Characterization of Risks from Toxic Air Pollutants

The estimated potential maximum cancer risks for the MICR and the MEIW at the location of maximum impact (PMI), and for the MEIR, are shown in Table 3.8-5. The residential incremental cancer risks are shown for 30-year exposure, as recommended by OEHHA guidance. The incremental cancer risk based on 70-year exposure is also shown in parentheses to provide supplemental information about potential risks for longer-than-average exposure.[51] The incremental workplace cancer risks are shown for 25-year exposure, again as recommended by OEHHA guidance.

The maximum incremental cancer risk for the maximally exposed individual based on a 30-year exposure period is slightly above the 1-in-one-million threshold that triggers the use of toxics best available control technology (T-BACT), but is well below the CEC's 10–in-one-million threshold of significance. Potential cancer risk exceeds 1 in one million only at receptors along the southern fenceline of the project, along Hobsonway. Maximum incremental cancer risk at all other receptors, including sensitive, residential and workplace locations, is well below 1 in one million, even for a 70-year exposure period. The modeled incremental cancer risk is predominantly a result of DPM from the emergency diesel fire pump engine, which is assumed to operate for 200 hours per year. In reality, the emergency diesel fire pump engine will likely operate less than half that number of hours, with a proportionally lower cancer risk. The use of a Tier 3 engine is considered T-BACT.

Cancer risks potentially associated with the project were also assessed in terms of cancer burden. Cancer burden is a hypothetical upper-bound estimate of the additional number of cancer cases that could be associated with emissions from the project. Cancer burden is calculated as the maximum product of any potential carcinogenic risk greater than 1 in one million and the number of individuals at that risk level. Although the MICR is above 1 in one million, there are no residents or offsite workplaces within the area of exceedance so the potential cancer burden is zero.

[51] OEHHA guidance, Section 8.2.3.

Table 3.8-5. Summary of Estimated Maximum Potential Health Risks

Receptor	Carcinogenic Risk[a] (per million)	Cancer Burden	Acute Health Hazard Index	Chronic Health Hazard Index	
				8-hour	Annual
Maximally Exposed Individual (MEI) at PMI	1.3 in one million (1.5 in one million)	0	$2.4x10^{-2}$	$1.5x10^{-3}$	$3.0x10^{-3}$
Maximally Exposed Individual Resident (MEIR)[b]	0.07 in one million (0.08 in one million)	0	$5.0x10^{-3}$	$2.5x10^{-4}$	$4.5x10^{-4}$
Maximally Exposed Individual Worker (MEIW)	0.09 in one million[c]	0	--[d]	--[b]	--[b]
Significance Level	10	1.0	1.0	1.0	1.0

[a] Derived (OEHHA) Method used to determine cancer risks. Values in parentheses reflect 70-year exposure. See text.

[b] Risks at MEIR represent maximum risk at any sensitive receptor. Sensitive receptors may also be residences or workplaces.

[c] A worker is assumed to be exposed at the work location for 8 hours per day, instead of 24; for 250 days per year, instead of 365; and for 25 years, instead of 30.

[d] Acute analysis is always done as a single point exposure and is not affected by the type of analysis or exposure duration.

The maximum potential acute noncancer health hazard index for 1-hour exposure associated with concentrations in air is shown in Table 3.8-5. The acute noncancer health hazard index for all target organs falls well below 1.0, the threshold of significance.

The maximum potential chronic noncancer health hazard indices associated with concentrations in air are also shown in Table 3.8-5. The chronic noncancer health hazard indices also fall below 1.0, the CEC threshold of significance used for recent projects.

The estimates of cancer and noncancer risks associated with chronic or acute exposures are below thresholds used for regulating emissions of TACs to the air. Historically, exposure to any level of a carcinogen has been considered to have a finite risk of inducing cancer. There is no threshold for carcinogenicity. Because risks at low levels of exposure cannot be quantified directly by either animal or epidemiological studies, mathematical models have estimated such risks by extrapolation from high to low doses. This modeling procedure is designed to provide a highly conservative estimate of incremental cancer risks based on the most sensitive species of laboratory animal for extrapolation to humans (i.e., the assumption being that humans are as sensitive as the most sensitive animal species). Therefore, the risk is not likely to be higher than risks estimated using inhalation cancer potency factors and is most likely lower, and could even be zero (EPA, 1991).

The analysis of potential cancer risk described in this section employs methods and assumptions generally applied by regulatory agencies for this purpose. Given the importance of assuring public health, this analysis uses highly conservative methods and assumptions, meaning they tend to overpredict the potential for adverse effects. Conservative methodology and assumptions are outlined below.

- The analysis encompasses representative weather data over a period of 5 years to ensure that the least favorable conditions producing the highest ground-level concentration of power plant emissions are part of the analysis. The analysis then assumes that these worst-case weather conditions, which in reality occurred only once in 5 years, will occur continuously for 30-70 years.
- The project is assumed to operate at the hourly, daily, and annual emission conditions that produce the highest ground-level concentrations.
- The location of the highest ground-level concentration of project emissions is identified, and the analysis then assumes that a sensitive individual resides at this location 24 hours a day, 7 days a week over the entire 30-70 year period, even though these assumptions are physically impossible.

- The analysis addresses the new procedures and assumptions in the OEHHA guideline that increase risk (uses the new age-specific sensitivity factors and breathing rates) and some of the factors that reduce it (reduces residential and worker exposure time as recommended). On balance, the new OEHHA guidance has been found to increase the stringency of the cancer risk assessment by a factor as high as three.

Taken together, these methods and assumptions create a scenario that is more potentially adverse to human health than conditions that exist in the real world. For example, if the worst-case weather conditions could occur only on a winter evening but the worst-case emission rates could occur only on a summer afternoon, the analysis nonetheless assumes that these events occur at the same time. The point of using these conservative assumptions is to consciously overstate the potential impacts of the project. No one individual will experience exposures as great as those assumed for this analysis. By determining that even this highly overstated exposure will not be significant, the analysis provides a high degree of confidence that the much lower exposures that actual persons will experience will not result in any significant increase in cancer risk. In short, the analysis ensures that there will not be any significant public health impacts at any location, under any weather condition, under any operating condition.

3.8.3.7 Hazardous Materials

Hazardous materials will be used and stored at the facility. The hazardous materials stored in significant quantities onsite and descriptions of their uses are presented in Section 3.5, Hazardous Materials Management. Use of chemicals at the project site will be in accordance with standard practices for storage and management of hazardous materials; therefore, normal use of hazardous materials will not result in significant impacts on public health. Best management practices will be used, and mitigation measures will be in place to prevent releases. However, if an accidental release migrated offsite, potential impacts to the public could result.

The California Accidental Release Prevention (CalARP) Program regulations and Code of Federal Regulations (CFR) Title 40 Part 68 under the Clean Air Act establish emergency response planning requirements for acutely hazardous materials. These regulations require, among other things, preparation of a Risk Management Program (RMP), which is a comprehensive program to identify hazards and predict the areas that may be affected by a release of a program-listed hazardous material.

3.8.3.8 Operation Odors

The fuel used at SEP will be natural gas. Combustion contaminants and other exhaust constituents, including ammonia, will not be present at concentrations that could produce a significant odor.

3.8.3.9 Electromagnetic Field Exposure

Onsite the SEP will be electric power-handling transformers and associated equipment, which are discussed in more detail in Section 2.3, Transmission Line Safety and Nuisances. Based on findings of the National Institute of Environmental Health Sciences (NIEHS, 1999), electromagnetic field exposures from the electric power generating and handling equipment and associated transmission lines will not result in a significant impact on public health. The NIEHS report to the U.S. Congress found that “the probability that EMF exposure is truly a health hazard is currently small. The weak epidemiological associations and lack of any laboratory support for these associations provide only marginal scientific support that exposure to this agent is causing any degree of harm.” (NIEHS, 1999).

3.8.3.10 Summary of Impacts

Results from the HRA based on emissions modeling indicate that there will be no significant incremental public health risks from construction or operation of SEP. Results from criteria pollutant modeling for routine operation indicate that potential ambient concentrations of NO_2, CO, SO_2, and PM_{10} will not exceed ambient air quality standards, with the exception of the state PM_{10} standards. For this pollutant,

existing background concentrations already exceed applicable standards, and the project will not add a significant contribution. The ambient air quality standards protect public health with a margin of safety for the most sensitive subpopulations (Section 3.1).

3.8.4 Cumulative Effects

CEQA requires an analysis of potential cumulative air quality impacts that may result from the project and other past, present, and reasonably foreseeable projects. The project owner submitted a letter to MDAQMD requesting the following information regarding other projects that qualify for review under the cumulative air quality impact analysis:[52]

- Projects located within a 6-mile radius of the SEP project site
- Projects issued a new Authority to Construct permit after January 1, 2012

MDAQMD has responded that no projects meeting these criteria have been identified, other than the existing, adjacent BEP. Potential cumulative impacts of other development projects within 6 miles of the project site, including the existing, adjacent BEP, are discussed in Appendix 3.1G.

In contrast with the approach used to estimate impacts for criteria pollutants, the significance thresholds developed for TACs are set sufficiently stringent so as to preclude the potential for any significant cumulative impacts. Thus, a separate cumulative impacts analysis for TACs is not required.

3.8.5 Mitigation Measures

The project has been designed to minimize TAC emissions and impacts. No additional mitigation measures are needed for the project TAC emissions because the potential air quality and public health impacts are less than significant.

3.8.6 Consistency with Laws, Ordinances, Regulations, and Standards

A demonstration of compliance with applicable LORS is presented in this section.

3.8.6.1 Federal LORS

Clean Air Act

The Clean Air Act requires large projects (new or modified sources at major stationary sources) to go through a federal permitting process that ensures that the project will not cause or contribute to a violation of a national ambient air quality standard. The emissions from SEP are below the thresholds for applicability of the federal permitting requirements.

40 CFR Part 63 (National Emission Standards for Hazardous Air Pollutants)

The federal National Emission Standards for Hazardous Air Pollutants (NESHAP) program establishes national emission standards to limit emissions of hazardous air pollutants (HAPs, or air pollutants identified by EPA as causing or contributing to the adverse health effects of air pollution, but for which NAAQS have not been established) from major sources of HAPs in specific source categories. The NESHAPs for gas turbines (Subpart YYYY) and for reciprocating IC engines (Subpart ZZZZ) are potentially applicable to the proposed project. Compliance with the applicable NESHAPs is discussed in Section 3.1, Air Quality.

40 CFR Part 68 (Risk Management Plan)

Facilities storing or handling significant amounts of acutely hazardous materials are required to prepare and submit risk management plans. No regulated substance will be present in quantities exceeding the applicability thresholds.

[52] Copies of the correspondence are provided in Appendix 3.1G.

3.8.6.2 State LORS

Health and Safety Code 25249.5 et seq. (Safe Drinking Water and Toxic Enforcement Act of 1986—Proposition 65)

Activities that expose the public to significant levels of chemicals that are carcinogenic or that can cause reproductive harm must provide warnings. Based on an HRA that follows ARB/OEHHA guidelines, noncriteria pollutant emission rates and resulting doses and carcinogenic risks will not exceed thresholds that require Proposition 65 exposure warnings.

Health and Safety Code, Article 2, Chapter 6.95, Sections 25531 to 25541; CCR Title 19 (Public Safety), Division 2 (Office of Emergency Services), Chapter 4.5 (California Accidental Release Prevention Program)

Facilities storing or handling significant amounts of acutely hazardous materials are required to prepare and submit risk management plans.

An RMP will be prepared to address potentially hazardous materials stored or used at SEP.

Health and Safety Code Sections 44360 to 44366 (Air Toxics "Hot Spots" Information and Assessment Act—AB 2588)

Under this program, facilities with emissions of TACs are prioritized based on emissions. If the facility's priority score is high enough, the facility is required to prepare an HRA. High-risk facilities may be required to provide notification to neighbors or to develop and implement a risk reduction plan.

Based on the emission estimates described in this report, SEP will not be a high-priority facility.

3.8.6.3 Local LORS

New Source Review Requirements for Air Toxics

MDAQMD Rule 1320 describes the requirements and standards for evaluating the potential impact of TACs from facilities that emit TACs. The rule requires a demonstration that a new or modified source will not exceed the applicable health risk thresholds.

Based on the results of the HRA described in this section, the project will not exceed the applicable health risk thresholds.

MDAQMD Rule 1320 also describes the requirements, procedures, and standards for evaluating the potential impact of TACs from new sources and modifications to existing sources that are major sources of HAPs. Based on the emissions estimates described in this Petition, SEP will be a major source of hazardous air pollutants because the project is considered part of the same stationary source as the existing BEP. Therefore, the project will be subject to the rule requirements for federal Toxic New Source Review (Federal T-NSR) and will be subject to MACT requirements. Because the proposed gas turbine will utilize an oxidation catalyst, the MACT requirements are expected to be satisfied.

3.8.7 Comparison of Public Health Impacts for the Proposed Modification

This section presents a comparison of project emissions and risks related to public health impacts of the proposed project with those of the licensed BEP II.

3.8.7.1 Construction Impacts

Emissions and ambient air quality impacts for criteria pollutants from construction of SEP were compared with emissions and impacts from construction of BEP II in Section 3.1.5.4. Construction of SEP is expected to take approximately 26 months, including 4 months of commissioning, compared with 16 to 20 months for BEP II. Noncriteria emissions of concern to public health during project construction are DPM, which are emitted on and near the project site by diesel-fueled construction equipment. DPM

emissions from onsite construction activities were estimated for both projects and are compared in Table 3.8-1.

Table 3.8-1. Comparison of Maximum Onsite DPM Emissions During Construction

Emitting Activity	Pounds per Day	Tons per Year
Construction Equipment: SEP	0.51	0.05
Construction Equipment: BEP II	7.4	0.98

Potential incremental cancer risk from DPM emitted during onsite construction was not evaluated for BEP II. Potential incremental cancer risk from DPM from SEP construction is approximately 0.03 in one million; refer to the discussion in Section 3.8.3.2.

3.8.7.2 Impacts During Project Operation

A comparison of the results of the screening health risk assessment for SEP and BEP II is presented in Table 3.8-7. This comparison shows that cancer risk for both projects, which is driven by the emergency diesel fire pump engine, is well below the 10 in one million significance threshold. The acute and chronic health hazard indices are also well below the significance threshold of 1 for both projects.

Table 3.8-7. Summary of Estimated Maximum Potential Health Risks

Receptor	Carcinogenic Risk[a] (per million)	Cancer Burden	Acute Health Hazard Index	Chronic Health Hazard Index	
				8-hour	Annual
Maximally Exposed Individual (MEI) at PMI, SEP	1.3 in one million (1.5 in one million)	0	$2.4x10^{-2}$	$1.5x10^{-3}$	$3.0x10^{-3}$
Maximally Exposed Individual (MEI) at PMI, BEP II[b]	1.81 in one million 0.7 in one million	0.0032 n/a	0.348	--[c]	0.0295
Significance Level	10	1.0	1.0	1.0	1.0

[a] Derived (OEHHA) Method used to determine cancer risks. Values in parentheses reflect 70-year exposure. See text.

[b] All BEP II health risk values from BEP Phase II Amendment; Appendix 5.2D, Table 5.2D-3, shows cancer risk as 1.81 in one million and the cancer burden as "n/a," while the text of Section 5.9.2.5 states that the cancer risk is $7x10^{-7}$ and the cancer burden is ~0.0032. The cancer burden will by definition be zero if the cancer risk is less than 1 in one million, so these results are internally inconsistent.

[c] No 8-hour chronic risk was presented for BEP II.

3.8.8 Changes to the Conditions of Certification

The original BEP II license included a public health-related Condition of Certification requiring annual visual inspections of the cooling tower drift eliminators and an inspection by the cooling tower vendor's field representative prior to initial operation. The condition also permitted the CPM to require periodic source testing of the PM_{10} emissions from the cooling tower.

The project owner believes that these conditions are duplicative of the cooling tower-related conditions that were imposed by the MDAQMD and incorporated into the Air Quality Conditions of Certification for the currently licensed project (see Condition of Certification AQ-38 through AQ-43 of the BEP II license). These conditions will ensure that the cooling tower drift eliminators are constructed and maintained in a manner that will minimize cooling tower drift. Therefore, the project owner requests that Condition PH-1 be removed.

3.8.9 References

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U.S. Environmental Protection Agency (EPA). 2005. *Guideline on Air Quality Models*, 40 CFR, Part 51, Appendix W, November.

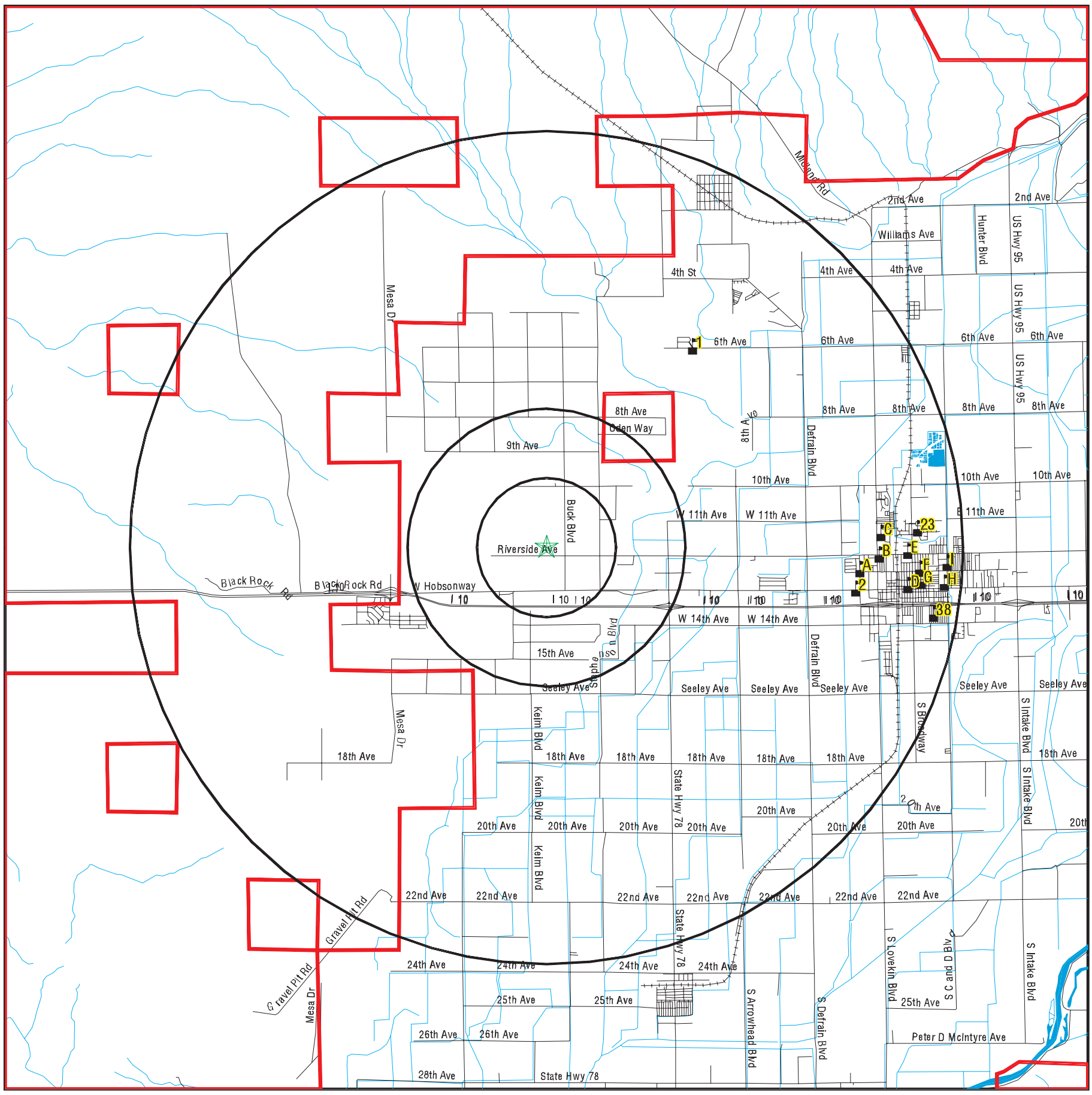
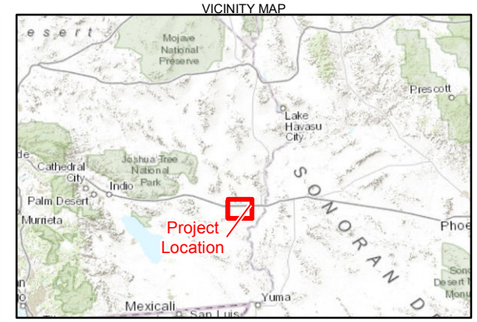


FIGURE 3.8-1A
Sensitive Receptors
Sonoran Energy Project
Riverside County, California

VICINITY MAP



LEGEND

- Additional Sensitive Receptor
- Property Boundary

Image Source: NAIP 2012

N

0 1.25 2.5
Miles

FIGURE 3.8-1B
Additional Sensitive Receptors
Sonoran Energy Project
Riverside County, California

3.9 Socioeconomics

The project modification discussed herein will not cause additional socioeconomic impacts beyond those identified in the Commission's Final Decision (02-AFC-01C), as amended. Any potential socioeconomic impacts associated with the proposed modification will be less than significant.

3.9.1 Environmental Baseline Information

The affected environment has not substantially changed since the Final Decision (02-AFC-01C), as amended, and potential impacts on socioeconomics are the same as previously analyzed. SEP is located in the City of Blythe on a previously disturbed site adjacent to the existing BEP. The project will be constructed on up to 34 acres within the existing 76-acre licensed site. The 76-acre SEP site is bounded to the north by Riverside Avenue, to the east by the existing BEP facility, and to the south by Hobsonway. There are currently no structures to the west of the proposed plant location. The project site is enclosed by a permanent exclusionary fence and is located on fill material. The electrical interconnection is via a 161-kV line connecting to the existing Buck Boulevard substation to tie into an existing transmission line. The interconnection will be built on the previously surveyed SEP site.

Since issuance of the Final Decision (02-AFC-01C), as amended, there have been changes to the baseline population and economy.

3.9.1.1 Population

Blythe, with an estimated January 1, 2014 population of 18,992, is the one of the smallest cities in Riverside County (California Department of Finance [DOF], 2014b). The City of Blythe was incorporated in 1916 (City of Blythe, 2014a). Historical population data for Blythe, Riverside County, and the state of California are summarized in Table 3.9-1. Annual average compounded population growth rates are summarized in Table 3.9-2. During the 2000s, Riverside County's population increased at an average annual rate of 3.5 percent. The average annual growth rate for the four years from 2010 to 2014 was -2.3 percent for Blythe and one percent for Riverside County.

Table 3.9-1. Historical and Projected Populations

Area	2000[a]	2010[b]	2014[b]	2020(p)[c]	2030(p)[c]	2040(p)[c]
City of Blythe	20,465	20,817	18,992	NA	NA	
Riverside County	1,545,387	2,189,641	2,279,967	2,593,211	3,046,064	3,462,256
California	33,873,086	37,253,956	38,340,074	40,643,643	44,279,354	47,690,186

[a] DOF, 2014a
[b] DOF, 2014b
[c] DOF, 2014c

Notes: Population projections rounded to nearest 100.

(p) = projected
NA = Not Available

Table 3.9-2. Historical and Projected Annual Average Compounded Population Growth Rates

Area	2000-2010 (%)	2010-2014 (%)	2014-2020 (%)	2020-2030 (%)	2030-2040 (%)
City of Blythe	0.2	-2.3	N/A	N/A	N/A
Riverside County	3.5	1.0	2.2	1.6	1.3
California	1.0	0.7	1.0	0.9	0.7

3.9.1.2 Housing

As of January 1, 2014, Riverside County and the City of Blythe had a total of 817,008 and 5,472 housing units, respectively (DOF, 2014b). Within Riverside County, single-family homes accounted for 606,485 units; multiple-family dwellings accounted for 131,296 units; and mobile homes accounted for 79,227 units (DOF, 2014b). Within Blythe, single-family homes accounted for 3,333 units; multiple-family dwellings accounted for 1,517 units; and mobile homes accounted for 622 units. Table 3.9-3 summarizes these estimates. New housing authorizations for Riverside County totaled 4,557 units in 2010, of which about 88 percent were single-family units and 12 percent were multi-family units (DOF, 2014d). These authorizations were valued at $1,079,639,000. The median home price in the City of Blythe and Riverside County in September 2014 was $120,750 and $295,000, respectively (DataQuick, 2014).

As of January 1, 2014, vacancy rates for Riverside County and Blythe were 14.3 percent and 17.5 percent, respectively (DOF, 2014b). As such, housing supply is not considered to be limited in Blythe, based on the federal standard vacancy rate of 5.0 percent.

Table 3.9-3. Housing Estimates by City, County, and State as of January 1, 2014

Area	Total Units	Single-Family	Multi-Family	Mobile Homes	Percent Vacant
City of Blythe	5,472	3,333	1,517	622	17.5
Riverside County	817,008	606,485	131,296	79,227	14.3
California	13,845,281	9,011,193	4,274,082	560,000	8.0

Source: DOF, 2014a

3.9.1.3 Economy and Employment

Riverside County is part of Riverside-San Bernardino-Ontario Metropolitan Statistical Area (MSA). Between 2008 and 2013, employment in the Riverside-San Bernardino-Ontario MSA decreased by 17,600 jobs, or about 1.4 percent. This decrease contrasts with the increase of about 16 percent in total employment at the state level over the same six-year period (California Employment Development Department [CEDD], 2014a). The Services, Retail Trade, and Government sectors were the largest contributors to employment in 2008 through 2013. These three sectors accounted for a little over two thirds of the total industry employment in the MSA.

Employment losses were experienced in all sectors except the Wholesale Trade, Transportation, Warehousing and Utilities, and Services sectors. As shown in Table 3.9-4, on an average annual growth rate basis, the Transportation, Warehousing and Utilities sector experienced the largest average annual increase (at two percent) in employment while the Information sector had the largest reduction (at -5.3 percent).

Table 3.9-4. Employment Distribution in the Riverside-San Bernardino-Ontario MSA, 2008 through 2013

	2008		2013		2008-2013	
Industry	Number of Employees	Employment Share	Number of Employees	Employment Share	Percentage Change	Average Annual Compound Growth Rate
Agriculture	15,900	1.3%	14,600	1.2%	-8.2%	-1.7%
Mining and Logging	1,200	0.1%	1,200	0.1%	0.0%	0.0%
Construction	90,700	7.2%	69,300	5.6%	-23.6%	-5.2%
Manufacturing	106,900	8.5%	86,800	7.0%	-18.8%	-4.1%
Wholesale Trade	54,100	4.3%	56,000	4.5%	3.5%	0.7%

Table 3.9-4. Employment Distribution in the Riverside-San Bernardino-Ontario MSA, 2008 through 2013

Industry	2008		2013		2008-2013	
	Number of Employees	Employment Share	Number of Employees	Employment Share	Percentage Change	Average Annual Compound Growth Rate
Retail Trade	168,600	13.4%	164,800	13.3%	-2.3%	-0.5%
Transportation, Warehousing and Utilities	70,200	5.6%	78,600	6.3%	12.0%	2.3%
Information	14,800	1.2%	11,300	0.9%	-23.6%	-5.3%
Financial Activities	46,100	3.7%	42,000	3.4%	-8.9%	-1.8%
Services	459,300	36.5%	491,600	39.6%	7.0%	1.4%
Government	231,000	18.4%	225,000	18.1%	-2.6%	-0.5%
Total Employment	**1,258,800**	**100.0%**	**1,241,200**	**100.0%**	**-1.4%**	**-0.3%**

Source: CEDD, 2014a

Table 3.9-5 provides details on the characteristics of the labor force. It shows 2013 annual employment data for Blythe and Riverside County compared to California. Blythe and Riverside County had higher unemployment rates than the state. The CEDD does not project future unemployment rates; therefore, a projection of the future unemployment rates for Blythe and Riverside County are not available.

Table 3.9-5. Employment Data, 2013

Area	Labor Force	Employment	Unemployment	Unemployment Rate
City of Blythe	7,400	6,500	900	12.4%
Riverside County	953,200	855,300	97,900	10.30%
California	18,596,800	16,933,300	1,663,500	8.9%

Source: CEDD, 2014b; 2014c

3.9.1.4 Construction Phase Impact

Construction Workforce. Construction of SEP will take place over approximately 26 months, including 4 months of commissioning, compared to the 16 to 20 months previously analyzed. Table 2-6 identifies the construction workforce for the proposed revised project. Construction personnel requirements will peak at approximately 325 workers in month 12 of the construction period instead of 387 in month 12 as previously analyzed during project licensing.

Available skilled labor in the Riverside-San Bernardino-Ontario MSA was evaluated by surveying the Building and Trades Council (Table 3.9-6) and contacting CEDD (Table 3.9-7). Both sources show that the workforce in Riverside-San Bernardino-Ontario MSA will be adequate to fulfill SEP's construction labor requirements. Therefore, the project will not place an undue burden on the local workforce. Additionally, workforce requirements by SEP are not expected to place undue burden on the local and regional workforce because Blythe is within the Riverside-San Bernardino-Ontario MSA, and is close to the San Diego-Carlsbad-San Marcos MSA and the El Centro MSA (Imperial County), both of which have a large available construction workforce. Finally, the SEP peak construction needs are less than one percent of the total of the regionally available construction workforce shown in Table 2-6. As a

result, the construction activities associated with SEP will not result in a significant adverse impact on the construction labor supply in the area.

Table 3.9-6. Labor Union Contacts in Riverside County

Labor Union	Contact	Phone Number
San Bernardino/Riverside Building Trades Council	William Perez, Executive Secretary-Business Manager	(951) 955-2400

Table 3.9-7. Available Labor by Skill in Riverside-San Bernardino-Ontario MSA, 2010-2020

Occupational Title	Annual Averages		Absolute Change	Percentage Change	Average Annual Compounded Growth Rate (%)
	2008	2018			
Carpenters	10,140	10,450	310	3.1	-0.3%
Cement Masons and Concrete Finishers	2,420	2,570	150	6.2	-0.6%
Painters, Construction, and Maintenance	4,320	4,570	250	5.8	-0.6%
Sheet Metal Workers	1,440	1,580	140	9.7	-0.9%
Electricians	4,000	4,520	520	13.0	-1.2%
Industrial Truck and Tractor Operators	7,810	9,660	1,850	23.7	-2.1%
Operating Engineers and Other Construction Equipment Operators	2,510	3,030	520	20.7	-1.9%
Helpers, Construction Trades	2,000	2,280	280	14.0	-1.3%
Construction Laborers	11,870	13,380	1,510	12.7	-1.2%
Plumbers, Pipefitters, and Steamfitters	3,160	3,570	410	13.0	-1.2%
Administrative Services Managers	1,870	2,210	340	18.2	-1.7%
Mechanical Engineers	1,050	1,150	100	9.5	-0.9%
Electrical Engineers	660	740	80	12.1	-1.1%
Engineering Technicians	1,860	2,040	180	54.6	-0.9%
Plant and System Operators	1,770	1,910	140	7.9	-0.8%

Source: CEDD, 2014d

Fiscal Resources. The total construction cost of the project is estimated to be approximately $443.6 million, of which $45.3 million will be paid out as wages and salaries, including benefits (estimated using an average of $87 per hour). Local products subject to county taxes will be purchased during the construction process. Local governments will not realize property tax revenue, which reflects the value of the completed facility, until after construction is complete. However, sales tax revenue will be realized when the construction period begins. Approximately $67.6 million of total local product purchases will be taxed during project construction. The sales tax rate in City of Blythe is 8 percent (as of October 1, 2014). The total tax revenue from the sale of local products during construction will be approximately $5.4 million.

3.9.1.5 Operation Phase Impacts

The facility will require fewer operation and maintenance workers – 9 operational and maintenance workers compared to the 20 previously analyzed for BEP II.

3.9.2 Environmental Analysis

No significant impacts to socioeconomics will result from the approval of this Petition. The impacts from the revised project are likely to be less than those previously analyzed because the number of construction and O&M workers is fewer. Additionally, the project will not cause an influx of a significant number of construction or operation workers into the local area; will not have an adverse effect on employment, housing, schools, medical, tax revenues, and fire and police protection; will result in increased revenue from sales taxes because of construction activities; and will recruit employees and purchase materials within the City of Blythe and the greater Riverside County area to the greatest extent possible.

3.9.3 Cumulative Impacts

No changes to previously identified cumulative impacts in the Final Decision (02-AFC-01C), as amended, will result from the approval of this Petition.

3.9.4 Mitigation Measures

No changes to previously identified socioeconomic impacts will result from the approval of this Petition. Therefore, no additional resource protection measures, beyond those required in the Final Decision (02-AFC-01C), as amended, are necessary.

3.9.5 Consistency with LORS

The project modification will comply with applicable socioeconomic LORS.

3.9.6 Conditions of Certification

The modified project does not require changes to the Socioeconomics Conditions of Certification from the Final Decision (02-AFC-01C), as amended and will comply with the existing Socioeconomics Conditions of Certification.

3.9.7 References

Caithness Blythe II, LLC. 2009. *Petition to Amend the Blythe Energy Project Phase II (02-AFC-1C)*. October 26.

California Department of Finance (DOF). 2014a. E-4 Revised Historical City, County and State Population Estimates, 1991-2000, with 1990 and 2000 Census Counts. Internet site: http://www.dof.ca.gov/research/demographic/reports/estimates/e-4/1991-2000/. Accessed 11/19/2014.

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California Energy Commission (CEC), 2005. Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C. Sacramento, California. December.

California Energy Commission (CEC). 2012. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C, Amendment Order No. 12-0425-3a.* Sacramento, California. April.

California Employment Development Department (CEDD). 2014a. Employment by Industry Data, Historical Annual Average Data. Internet site: http://www.labormarketinfo.edd.ca.gov/LMID/Employment_by_Industry_Data.html. Accessed 10/22/2014.

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DataQuick, 2014. DQNews – California Home Sale Price Medians by County and City, Home Sales Recorded in September 2014. Internet site: http://www.dqnews.com/Charts/Monthly-Charts/CA-City-Charts/ZIPCAR.aspx. Accessed 11/19/2014.

3.10 Soils

The project modification discussed herein will not cause additional impacts to soil beyond those identified in the Commission's Final Decision (02-AFC-01C), as amended. Any potential soil impacts associated with the proposed modification will be less than significant.

3.10.1 Environmental Baseline Information

The affected environment has not substantially changed since the Final Decision (02-AFC-01C), as amended, and potential impacts to soil are the same as previously analyzed. SEP is located in the City of Blythe on a previously disturbed site adjacent to the existing BEP. The project will be constructed on up to 34 acres within the existing 76-acre licensed site. The 76-acre SEP site is bounded to the north by Riverside Avenue, to the east by the existing BEP facility, and to the south by Hobsonway. There are currently no structures to the west of the proposed plant location. The project site is enclosed by a permanent exclusionary fence and is located on fill material. The electrical interconnection is via a 161-kV line connecting to the existing Buck Boulevard substation to tie into an existing transmission line. The interconnection will be built on the previously surveyed SEP site; therefore, no additional impacts to soils are anticipated.

As described in the Final Decision (02-AFC-01C), soils in the region are primarily derived from alluvial and colluvial deposits and range from coarse to moderately fine in texture. On the Palo Verde Mesa, soils tend to be well to excessively drained, coarse grained, sands, gravels and loam with relatively low erosion hazards. The soils at the site are primarily made up of four soil types with textures ranging from moderately fine to coarse. The water erosion hazard is expected to be slight at the SEP site and along the transmission lines. The wind erosion potential for most of these soils is moderate to high (CEC, 2005).

3.10.2 Environmental Consequences

The soil findings remain unchanged from the Final Decision (02-AFC-01C), as amended. There will be no increased impacts to soil from construction as previously licensed. An updated Phase I ESA was conducted in April 2015 and is provided in Appendix 3.10A. As similar to the original Phase I ESA from the Final Decision (02-AFC-01C), as amended, the updated Phase I ESA did not identify any new environmental concerns. Although unlikely, if previously discovered subsurface contamination is encountered during earth moving activities appropriate hazardous wastes procedures will be followed (see Section 3.5, Hazardous Materials Management, for how hazardous waste will be handled). No new significant impacts to soils will result from the new point of electrical interconnection and the other proposed modifications to the project.

3.10.3 Cumulative Impacts

No changes to previously identified cumulative impacts in the Final Decision (02-AFC-01C), as amended, will result from the approval of this Petition.

3.10.4 Mitigation Measures

No changes to previously identified impacts to soils will result from the approval of this Petition. Therefore, no additional resource protection measures, beyond those required in the Final Decision (02-AFC-01C), as amended, are necessary.

3.10.5 Consistency with LORS

The project modification will comply with applicable soil LORS.

3.10.6 Conditions of Certification

This Petition does not require changes to the Conditions of Certification from the Final Decision (02-AFC-01C), as amended.

3.10.7 References

Caithness Blythe II, LLC. 2009. *Petition to Amend the Blythe Energy Project Phase II (02-AFC-1C)*. October 26.

California Energy Commission (CEC). 2005. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C*. Sacramento, California. December.

California Energy Commission (CEC). 2012. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C, Amendment Order No. 12-0425-3a.* Sacramento, California. April.

3.11 Traffic and Transportation

The project modification discussed herein will not cause additional impacts to traffic and transportation beyond those identified in the Commission's Final Decision (02-AFC-01C), as amended. Any potential traffic and transportation impacts associated with the proposed modification will be less than significant. Traffic volumes in the region have had limited changes since the preparation of the Commission's Final Decision (02-AFC-01C), as amended. The surrounding roadways continue to operate at acceptable levels of service (LOS) and can accommodate the minimal construction traffic required for the proposed modification. Roadways will still be within Riverside County and California Department of Transportation's (Caltrans) established range of acceptable operations.

3.11.1 Environmental Baseline Information

The affected environment has not substantially changed since the Final Decision (02-AFC-01C), as amended, and potential impacts to traffic and transportation are the same as previously analyzed. SEP is located in the City of Blythe on a previously disturbed site adjacent to the existing BEP. The project will be constructed on up to 34 acres within the existing 76-acre licensed site. The 76-acre SEP site is bounded to the north by Riverside Avenue, to the east by the existing BEP facility, and to the south by Hobsonway. There are currently no structures to the west of the proposed plant location. The project site is enclosed by a permanent exclusionary fence and is located on fill material. The electrical interconnection is via a 161-kV line connecting to the existing Buck Boulevard substation to tie into an existing transmission line. The interconnection will be built on the previously surveyed SEP site.

No major changes to the transportation infrastructure or roadway capacity have occurred in the vicinity of the project site since the Final Decision (02-AFC-01C), as amended. Current highway volumes (Caltrans, Traffic Data Branch, 2014) were reviewed against the traffic volumes evaluated in 02-AFC-01C. This review confirmed minimal changes on all previously evaluated roadway segments. The roadways currently operate at LOS A, which is within County and Caltrans minimum acceptable LOS standards for roadways. Table 3.11-1 is a summary of the daily traffic volumes and V/C ratios for existing conditions. Primary access to the SEP site will be provided via the north entrance off Riverside Avenue. The existing BEP entrance will be connected to the SEP entrance via a new access road. A secondary SEP access road will be off Hobsonway.

Table 3.11-1. Existing Roadway LOS Summary

Study Roadway	Between	And	AADT	Maximum Two-Way Traffic Volume[a]	Volume to Capacity Ratio (V/C)	LOS
I-10	Wiley's Well Road	Mesa Drive	23,500	61,200	0.38	A
	Mesa Drive	SR-78	23,000	61,200	0.38	A
	SR-78	Lovekin Blvd.	25,000	61,200	0.41	A
SR-78	Ripley/Broadway Street	I-10	2,800	10,400	0.27	A
	I-10	Hobsonway	2,800	10,400	0.27	A

[a] Capacity based on maintaining LOS C.

3.11.2 Environmental Consequences

3.11.2.1 Roadways

The impact of the proposed modifications is measured by the potential change in the traffic operations of surrounding intersections and roadways. Traffic associated with the project during construction and

operation are expected to decrease from the traffic and transportation impacts considered in the Final Decision (02-AFC-01C), as amended.

3.11.2.2 Construction Trip Generation

The amount of construction traffic generated by the proposed modifications was estimated based on the anticipated construction schedule, activities, and workforce, including the number of employees and anticipated daily vehicle activity at the site as shown in Table 3.11-2. The vehicle trips associated with the project were separated into construction worker trips (generally auto trips) and delivery trips (truck trips). The number of construction workers will fluctuate throughout the 26-month construction period (including 4 months of commissioning), with the peak construction effort onsite occurring during Month 12, when 325 workers are projected to be onsite. As a conservative estimate it assumed that none of the construction workers will carpool. Therefore, the construction workforce will generate 650 average daily trips (ADT), 325 AM peak hour trips, and 325 PM peak hour trips.

The average number of deliveries and hauling per day are estimated to be 25 and 40, respectively. It is assumed that the truck trips will be spread evenly throughout the day, beginning at 8:00 AM and ending at 4:30 PM.

The average daily vehicle trips during construction of SEP, including haul, delivery, and construction workforce is 273.

The 2009 Petition to Amend Application identified that 227 vehicles will access the site during construction[53]. As such, the traffic and transportation impacts for the proposed project modification will be expected to be comparable to those analyzed and approved in the April 2012 Commission Decision.

Table 3.11-2. Construction Project Trip Generation

Trip Type	Daily Trips (Peak Construction)	Daily Trips (Average)	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Delivery Trucks	69	48	41	41	82	28	28	56
Hauling Trucks	100	25	25	25	50	25	25	50
PCE (1.5)	254	110	99	99	198	80	80	160
Workforce	650	163	325	0	325	0	325	325
Total Construction Traffic in PCE	904	273	424	99	523	80	405	485

Notes: Construction schedule and personnel power loading provided by project owner. Construction activity assumed to occur 10 hours per day; 6 days per week; 23 days per month. All worker and delivery truck travel assumed to travel to the project site.
PCE = passenger car equivalent

3.11.2.3 Aviation

SEP is located approximately 4,500 feet due east of the Blythe airport runway 26 (eastern end of runway 26). Planning for the area surrounding the Blythe airport is dictated by the Riverside County Airport Land Use Commission's ALUCP. The ALUCP defines airport influence area as an area where future airport-related noise, overflight, safety, or airspace protection factors may significantly affect land uses or necessitate restrictions on those uses. The ALUCP identifies that new land uses that may cause visual, electronic, or increased bird strike hazards to aircraft in flight shall not be permitted within any airport's influence area. Sources of dust, steam, or smoke which may impair pilot visibility or any

[53] Blythe Energy Project Phase II Amendment, October 26, 2009, Attachment 5.2E-1 BEP II Construction Support Data, page 8.

proposed use that creates an increased attraction for large flocks of birds are specific characteristics to be avoided. The airport influence area constitutes the area within which certain land use actions are subject to ALUC review. The airport influence area is separated into six Compatibility zones, which contains specific provisions for approving land uses within these zones.

As noted in Section 3.6, Land Use, the licensed project site includes land located in Airport Compatibility Zones B1, C, and D of the Riverside County ALUCP. The previously licensed project was located in Zones C and D. As part of this project modification, all SEP structures and facilities will occupy only the eastern portion of this parcel, and fall within Compatibility Zones C and D, with the vast majority of project components situated within Zone D. The ALUCP provides that after the City's General Plan has been updated to be consistent with the ALUCP, development within an airport influence area is not subject to review by the Airport Land Use Commission (ALUCP, pp. 1-4, 1-8, and Policy 1.5.2(b)). The City's General Plan (2007) incorporates the ALUCP and is, therefore, consistent with the ALUCP. (General Plan Policy 21.) Pursuant to the City's General Plan and ALUCP, if not for the exclusive jurisdiction of the CEC to license thermal power plants with a nominal generating capacity of more than 50 MW, the City will review the project for consistency with the ALUCP (General Plan Policy 21, and Implementation Policy at p. 3-25).

The ALUCP sets forth general compatibility criteria for Zones C and D. Among the compatibility criteria is review for objects greater than 70 feet tall in either of these compatibility zones (Riverside County Airport Land Use Commission, 2004). However, this height criterion is for general guidance; taller objects may be acceptable if they do not pose an obstruction (ALUCP at Table 2A, fn. 15, incorporated in its entirety into the City's General Plan (2007)). The FAA has determined that the project poses no hazard to air navigation.

SEP is located within the airport influence area, and development is located within the ALUC Compatibility Zones C and D. Figure 3.6-2B presents the ALUC Compatibility Zones for the project area. Most of SEP's new development occurs within Compatibility Zone D, with only the gen-tie and access road located within Compatibility Zone C.

ALUCP section 4.3.7 identifies that new land uses that may cause visual, electronic, or increased bird strike hazards to aircraft in flight shall not be permitted within any airport's influence area. Sources of dust, steam, or smoke which may impair pilot visibility or any proposed use that creates an increased attraction for large flocks of birds are specific characteristics to be avoided. The project is not expected to emit visible dust during operation. Thermal plumes generated by the SEP operation of the combustion turbine, auxiliary boiler, and cooling tower are not expected to pose a threat to aviation.

Thermal Plume Analysis. A thermal plume analysis was performed for the combustion turbine, auxiliary boiler, and cooling tower. The analysis for the combustion turbine and auxiliary boiler was performed at low, annual average and high ambient temperatures (39 °F, 74 °F, and 110 °F) from the stack/aperture height to 2,800 feet. This analysis is presented in Appendix 3.11A. The cooling tower analysis assumed the low and average ambient temperatures. The results of this analysis indicate that the maximum plume velocities occur during cold temperature operation (39°F). Under these cold ambient conditions, the average vertical velocity for the gas turbine exhaust plume will exceed the critical velocity of 4.3 meters per second (m/s) at elevations up to 660 feet above stack top (800 feet above the ground).[54] The analysis also indicates that the average vertical velocity for the combined cooling tower plumes[55] is conservatively predicted to exceed the critical velocity of 4.3 m/s at elevations up to 1,046 feet above stack top (1,088 feet above the ground) under these worst-case (cold ambient) conditions.

[54] Gas turbine stack is 140 feet tall; top of cooling tower cones is 42 feet above grade.

[55] This represents the combined impact of all of the SEP cooling tower cells.

This prediction is conservative because it is based on worst-case exhaust velocities and exhaust temperature of the cooling tower. Under these cold temperature conditions, the cooling tower plumes are expected to be visible to pilots. The visibility of the plumes will make pilots aware of the potential for thermal plumes and will allow them to avoid overflight. Therefore, in the unlikely event that the cooling tower operates in this manner under these conditions, the presence of the cooling tower plumes is not expected to pose a threat to aviation.

The maximum plume velocities occur under average temperature conditions (74°F). Under these ambient conditions, the gas turbine exhaust plume will be less than 4.3 m/s at elevations above 535 feet above stack top (675 feet above the ground). Under average ambient conditions, the elevation at which the average vertical velocity of the combined cooling tower plumes is predicted to fall below 4.3 m/s is significantly lower than under cold temperature conditions: approximately 444 feet above stack top (486 feet above the ground).

The Commission also reviewed the possibility of the evaporation ponds attracting birds, which could impact aviation safety. The licensed project included two ponds totaling 6.5 acres and SEP's two evaporation ponds totaling approximately 5 acres. Therefore, the potential aviation safety impacts as a result of SEP's evaporation ponds will be the same or less then the licensed project. See also Section 3.6, Land Use.

Federal Aviation Administration (FAA) Regulations, 14 CFR Part 77, establish standards for determining obstructions in navigable airspace and set forth requirements for notification of proposed construction. These regulations require FAA notification for construction over 200 feet above ground level. Although SEP will not contain features over 200 feet above ground level, the project owner filed a FAA Form 7460-1, a Notice of Proposed Construction or Alteration. The FAA determined that the project poses no hazard to air navigation. Appendix 3.11B presents a copy of this determination.

3.11.3 Cumulative Impacts

No changes to previously identified cumulative impacts in the Final Decision (02-AFC-01C), as amended, will result from the approval of this Petition.

3.11.4 Mitigation Measures

No changes to previously identified impacts to the local or regional traffic and transportation network will result from the approval of this Petition. No significant impacts beyond those previously addressed for the BEP II will result from the approval of this amendment. The project owner believes that the combination of existing mitigation measures and the proposed change in location of the cooling tower provide adequate mitigation, and that additional mitigation measures beyond those already implemented are not necessary. Therefore, no additional resource protection measures, beyond those in the Final Decision (02-AFC-01C), as amended, are necessary.

3.11.5 Consistency with LORS

The project modification will comply with applicable traffic and transportation LORS.

3.11.6 Conditions of Certification

The ASOS advisory (Condition of Certification TRANS-9.1) has already been implemented, along with other mitigation measures designed to make pilots aware of the presence of the power plants. Based on the analysis contained herein, no additional mitigation measures related to thermal plumes are necessary, however, the project owner will comply with TRANS-9 as revised below.

TRANS-9 The project owner shall **provide documentation that a request for implementation of the following measures has been submitted to the FAA, the City of Blythe, the Riverside Airport Land Use Commission, and/or the**

airport owner as appropriate ~~documentation~~ **prior** to ~~not~~ commenc~~i~~ng construction of ~~BEP II~~**the project** ~~until the following are accomplished~~:

1. A remark is placed on the Airport's Automated Surface Observation System (ASOS), or equivalent broadcast, advising pilots to avoid low-altitude direct overflight of the power plant;
2. The VFR traffic pattern to runway 26 is changed from left-hand turns to right-hand turns; and
3. A runway, other than runway 26, is designated as the primary calm wind runway.

Verification: At least 60 days prior to the start of rough grading or construction, the project owner shall submit to the CPM documentation demonstrating ~~the implementation of~~ compliance with this condition.

3.11.7 References

Caithness Blythe II, LLC. 2009. *Petition to Amend the Blythe Energy Project Phase II (02-AFC-1C)*. October 26.

California Energy Commission (CEC). 2005. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C.* Sacramento, California. December.

California Energy Commission (CEC). 2012. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C.* Sacramento, California. April.

Caltrans. 2014*. 2013 Traffic Volumes on the California State Highway System. http://traffic-counts.dot.ca.gov/.*

City of Blythe. 2007. City of Blythe General Plan 2025 Land Use Element. Accessed online at: http://www.cityofblythe.ca.gov/DocumentCenter/View/295.

Riverside County Airport Land Use Commission (RCALUC). 2004. Riverside County Airport Land Use Compatibility Plan. Accessed online at: http://www.rcaluc.org/plan_new.asp.

3.12 Visual Resources

The project modification discussed herein will not cause additional impacts to visual resources beyond those identified in the Commission's Final Decision (02-AFC-01C), as amended. Any potential visual resource impacts associated with the proposed modification will be less than significant.

3.12.1 Environmental Baseline Information

The affected environment has not substantially changed since the Final Decision (02-AFC-01C), as amended, and potential impacts to visual resources are the same as previously analyzed. SEP is located in the City of Blythe on a previously disturbed site adjacent to the existing BEP. The project will be constructed on up to 34 acres within the existing 76-acre licensed site. The 76-acre SEP site is bounded to the north by Riverside Avenue, to the east by the existing BEP facility, and to the south by Hobsonway. There are currently no structures to the west of the proposed plant location. The project site is enclosed by a permanent exclusionary fence and is located on fill material. The electrical interconnection is via a 161-kV line connecting to the existing Buck Boulevard substation to tie into an existing transmission line. The interconnection will be built on the previously surveyed SEP site; therefore, no additional impacts to visual resources are anticipated.

The proposed SEP will have a smaller footprint within the licensed site and slightly taller features compared with licensed BEP II. Specifically, the single SEP HRSG exhaust stack will be approximately 140 feet in height compared with the 130-foot height of the two previously licensed BEP II HRSG stacks. The single SEP HRSG will be 120 feet in height, compared with the two 93-foot-tall HRSGs licensed for BEP II. The HRSG and the exhaust stack are the two tallest SEP components. The cooling tower will remain approximately the same size as analyzed for BEP II. While SEP contains some features taller than those approved for BEP II, such features will appear within an objectively smaller development area within the 76-acre site.

The visual effects resulting from development of SEP are described below, including how the visibility of the proposed SEP will differ from the Key Observation Points (KOPs) used in Staff's analysis of BEP II.

3.12.2 Environmental Analysis

This analysis focuses on the CEQA significance criterion related to visual character or quality: "Would the project substantially degrade the existing visual character or quality of the site and its surroundings?" SEP will not result in significant effects related to any of the other three CEQA significance criteria: there are no officially designated scenic vistas in the project's viewshed; there are no designated State Scenic highways in the project vicinity; and SEP, like BEP II, will not be a source of substantial, new light or glare (implementation of Condition of Certification VIS-6 ensures the minimization of light and glare from the project).

Locations for each of the KOPs described below are shown in FSA Visual Resources Figure 1. Existing and simulated views for BEP II, which serve as a basis for this analysis, are shown in FSA Figure 2 through Figure 8 (figures are located in Appendix 3.12A).

3.12.3 KOP 1 – Eastbound Interstate 10

The FSA concluded that BEP II will result in a low-to-moderate level of overall visual change in views from KOP 1. The visual impact was concluded to be adverse but less than significant with the effective implementation of Conditions of Certification. This segment of I-10 was identified as a proposed "Scenic Highway" in the City of Blythe General Plan that was current at the time the FSA was written (City of Blythe, 1989). No such reference is made to I-10 or any other proposed scenic routes in the current General Plan (City of Blythe, 2007). However, the segment of I-10 that passes by the project site is identified in the Riverside County General Plan as a "County Eligible" scenic highway (Riverside County, 2003).

SEP will appear slightly farther away from the viewpoint than BEP II, and will result in a similarly low-to-moderate level of overall visual change. The smaller footprint of the project will narrow the horizontal space occupied by the power plant, allowing for more of the more distant existing BEP to be visible from this vantage point. While the project will contrast moderately with the surrounding landscape, it will contrast much less with the more visible existing BEP. The height of the SEP HRSG stack will make it the most prominently visible structure beyond the highway corridor in views from KOP I; it will be co-dominant with the more visible existing BEP and the roadway in the immediate foreground. View blockage will be low-to-moderate; the SEP HRSG stack will extend slightly farther into the sky than BEP II will have, but the smaller development area will likely reduce slightly the amount of mountain backdrop blocked in this view, compared with BEP II.

The FSA identified the overall visual sensitivity in this area as being moderate, given the low-to-moderate visual quality, low-to-moderate visual concern, and moderate-to-high degree of viewer exposure relative to the existing landscape and viewing characteristics. These conditions remain at present. Given the low-to-moderate visual change that will be perceived from KOP 1, SEP will result in an adverse but less than significant visual impact with effective implementation of Conditions of Certification VIS-4 and VIS-5.

3.12.3.1 KOP 2 – Eastbound Hobsonway

The FSA concluded that BEP II will result in a moderate-to-high level of overall visual change in views from KOP 2. The visual impact was concluded to be adverse but less than significant with the effective implementation of Conditions of Certification. This segment of Hobsonway was identified as a proposed "Scenic Highway" in the City of Blythe General Plan that was current at the time the FSA was written (City of Blythe, 1989). No such reference is made to Hobsonway or any other proposed scenic routes in the current General Plan (City of Blythe, 2007).

Because of its smaller footprint, SEP will likely not obscure a large portion of the existing BEP, as BEP II would have (see FSA Figure 3). Rather, it will appear within a horizontal space already occupied by an industrial-appearing facility. Thus, the project's visual contrast with its surroundings will be moderate. The height of SEP's HRSG exhaust stack will result in a moderate presence in the landscape, as was concluded in the FSA for BEP II. However, the location of the smaller SEP farther to the northeast compared with the proposed location for BEP II will result in a smaller portion of the Big Maria Mountains backdrop being obscured. View blockage will therefore be low-to-moderate.

The FSA identified the overall visual sensitivity in this area as being moderate, given the low-to-moderate visual quality, low-to-moderate visual concern, and moderate-to-high degree of viewer exposure relative to the existing landscape and viewing characteristics. These conditions remain at present. Given the moderate visual change that will be perceived from KOP-2, SEP will result in an adverse but less than significant visual impact with effective implementation of Conditions of Certification VIS-4 and VIS-5.

3.12.3.2 KOP 3 – Mesa Verde

The FSA concluded that BEP II will result in a low level of overall visual change in views from KOP 3. The visual impact was concluded to not be significant with the effective implementation of Conditions of Certification.

SEP will appear narrower and slightly taller than BEP II and will have views from Mesa Verde, resulting in a low-to-moderate level of overall visual change. The area along the horizon within which the project area will be visible will be smaller than that for the existing BEP. Other features visible in this view, namely nearby utility poles, encroach upon the same skyline, but SEP will appear as the most prominent of the valley floor structures to do so. As such, view blockage will be low-to-moderate. The project will otherwise appear as subordinate to the larger landscape from this distance, and color and forms of the facility from this distance will result in a low degree of visual contrast.

The FSA identified the overall visual sensitivity in this area as being moderate, given the low-to-moderate visual quality, moderate visual concern, and moderate degree of viewer exposure relative to the existing landscape and viewing characteristics. These conditions remain at present. Given the low-to-moderate visual change that will be perceived from KOP 3, SEP will result in an adverse but less than significant visual impact with effective implementation of Conditions of Certification VIS-4 and VIS-5.

3.12.3.3 KOP 4 – Central Blythe

The FSA concluded that BEP II will not result in any visual change in views from KOP 4 because it will not be visible as a result of substantial viewing distance and screening provided by intervening vegetation. No significant visual impacts were anticipated.

SEP will be similarly obscured by intervening vegetation, which remains generally as it was when the FSA was written in terms of height and density. Views toward this portion of the skyline show interruptions by transmission poles and trees located in the project vicinity and in the eastern edge of the mesa, between Blythe and the project site. Although the SEP HRSG stack may protrude above the mountains, from this distance, however, where it will be discernible but not necessarily identifiable, it will result in only a low level of visual change. Visual contrast and view blockages will also be low, and the project will be subordinate in views to the broader landscape, in which the agricultural foreground and taller portions of the McCoy Mountains are the dominant visual features.

The FSA identified the overall visual sensitivity in this area as being low-to-moderate, given the low-to-moderate visual quality, low degree of visual concern, and moderate degree of viewer exposure relative to the existing landscape and viewing characteristics. These conditions remain at present. Given the low visual change that will be perceived from KOP 4, SEP will result in an adverse but less than significant visual impact with effective implementation of Conditions of Certification VIS-4.

3.12.3.4 KOP 5 – Blythe Municipal Golf Course and Residences

The FSA concluded that BEP II will result in a low level of overall visual change in views from KOP 5. The visual impact was concluded to be not significant.

From this distance and elevation, SEP will appear as part of the same faintly detectable cluster of development on the valley floor as BEP II will have, resulting in a similarly low level of overall visual change. The slightly taller HRSG stack will be visually absorbed by the surrounding landscape and will not be a prominently visible feature in views from this location along the Palo Verde Mesa bluffs. The relatively dark backdrop of the Mule Mountains will further absorb any features protruding above the mesa floor in this view from the north. Visual contrast will be low at this level of project discernibility, and, as noted in the FSA for BEP II and the existing BEP, the project will appear small in size in a wide field of view, and will be subordinate in relation to the level valley and mesa and mountainous backdrop. View blockage will similarly be low; while the SEP HRSG stack may occupy a slightly larger space above the valley floor, obstruction of views toward the lower portions of the mountain backdrop from this distance will be minimal.

The FSA identified the overall visual sensitivity in this area as being moderate-to-high, given the moderate-to-high visual quality and visual concern, and low-to-moderate degree of viewer exposure relative to the existing landscape and viewing characteristics. These conditions remain at present. Given the low degree of visual change that will be perceived from KOP 5, SEP will result in an adverse but less than significant visual impact with effective implementation of Conditions of Certification VIS-4.

3.12.3.5 KOP 6 – Westbound Hobsonway

The FSA concluded that BEP II will result in a moderate-to-high level of overall visual change in views from KOP 6. The visual impact was concluded to be adverse but less than significant with the effective implementation of Conditions of Certification. This segment of Hobsonway was identified as a proposed "Scenic Highway" in the City of Blythe General Plan that was current at the time the FSA was written

(City of Blythe, 1989). No such reference is made to Hobsonway or any other proposed scenic routes in the current General Plan (City of Blythe, 2007).

SEP will appear more compact and slightly to the north of where BEP II was proposed to be located on the 76-acre site, though its high degree of visibility and height will result in a similarly moderate-to-high level of overall visual change. While the project will be located within a broader landscape characterized by power generation and transmission, direct views toward SEP will represent a moderate-to-high degree of visual contrast, similar to BEP II. At this close proximity, vegetation planted as landscaping in the foreground – currently mature and fuller, if not taller than when BEP II was analyzed– will not reduce this contrast. SEP's reduced width and slightly increased height will offset each other to the extent that SEP will be co-dominant with other natural landforms and built features. The SEP HRSG stack will be the tallest feature in the landscape. However, this single stack and the overall reduction in project footprint will result in a lower, though still moderate, degree of blockage views, specifically with regard to the mountain backdrop.

The FSA identified the overall visual sensitivity in this area as being low-to-moderate, given the low-to-moderate visual quality, low-to-moderate visual concern, and moderate degree of viewer exposure relative to the existing landscape and viewing characteristics. These conditions remain at present. Despite the moderate-to-high visual change that will be perceived from KOP 6, SEP will result in an adverse but less than significant visual impact with effective implementation of Conditions of Certification VIS-4 and VIS-5.

3.12.3.6 KOP 7 – Westbound Interstate 10

The FSA concluded that BEP II will result in a moderate-to-high level of overall visual change in views from KOP 7. The visual impact was concluded to be adverse but less than significant with the effective implementation of Conditions of Certification. This segment of I-10 was identified as a proposed "Scenic Highway" in the City of Blythe General Plan that was current at the time the FSA was written (City of Blythe, 1989). No such reference is made to I-10 or any other proposed scenic routes in the current General Plan (City of Blythe, 2007). However, the segment of I-10 that passes by the project site is identified in the Riverside County General Plan as a "County Eligible" scenic highway (Riverside County, 2003).

As the view from SEP will appear more compact and slightly to the north of where BEP II was proposed to be located on the 76-acre site, SEP will be to the right of the BEP II location in this view. This will result in a moderate-to-high degree of overall visual change. Because SEP will appear much closer to the existing BEP in this view, viewers from KOP 7 will likely perceive a larger area within which industrial-appearing facilities have been located, rather than a completely separate facility. The height of SEP's features will present a somewhat different form, however, in comparison with the proportions of the existing power plant or even the distant mountain ranges. As such, the visual contrast associated with SEP from this viewpoint will be moderate-to-high, and the project will be co-dominant with other natural and built features. Given the projected location of BEP II in views from KOP 7, view blockage will be low-to-moderate with SEP; its reduced scale will result in less of the mountain backdrop being obscured.

The FSA identified the overall visual sensitivity in this area as being moderate, given the low-to-moderate visual quality, low-to-moderate visual concern, and moderate degree of viewer exposure relative to the existing landscape and viewing characteristics. These conditions remain at present. Despite the moderate-to-high visual change that will be perceived from KOP 7, SEP will result in an adverse but less than significant visual impact with effective implementation of Conditions of Certification VIS-4 and VIS-5.

Summary. While the slightly taller SEP HRSG stack may result in greater general visibility of the project, and affect visual quality to a somewhat greater degree in certain views compared with what was determined for BEP II, it will also have a smaller footprint and will therefore not result in substantially greater impacts to visual resources than the previously evaluated and approved BEP II. With

implementation of Conditions of Certification originally identified for BEP II, SEP will result in an overall adverse but less than significant impact to visual quality and character in all views.

Table 3.12-1 summarizes the differences between views from each of the seven KOPs as analyzed in the FSA for BEP II and here for SEP.

Table 3.12-1. Summary Comparison of Effects to Visual Character or Quality in Views from KOPs

KOP	Visual Contrast	Project Dominance	View Blockage	Overall Visual Change
1 – Eastbound I-10				
BEP II	Low-to-moderate	Co-dominant	Low-to-moderate	Low-to-moderate
SEP	Moderate	Co-dominant	Low-to-moderate	Low-to-moderate
2 – Eastbound Hobsonway				
BEP II	Moderate-to-high	Dominant	Moderate	Moderate-to-high
SEP	Moderate	Dominant	Low-to-moderate	Moderate
3 – Mesa Verde				
BEP II	Low	Subordinate	Low	Low
SEP	Low	Subordinate	Low-to-moderate	Low-to-moderate
4 – Central Blythe				
BEP II	N/A	N/A	N/A	N/A
SEP	Low	Subordinate	Low	Low
5 – Blythe Municipal Golf Course and Residences				
BEP II	Low	Subordinate	Low	Low
SEP	Low	Subordinate	Low	Low
6 – Westbound Hobsonway				
BEP II	Moderate-to-high	Co-dominant to dominant	Moderate	Moderate-to-high
SEP	Moderate-to-high	Co-dominant	Moderate	Moderate-to-high
7 – Westbound I-10				
BEP II	Moderate-to-high	Co-dominant to dominant	Moderate	Moderate-to-high
SEP	Moderate-to-high	Co-dominant	Low-to-Moderate	Moderate-to-high

3.12.4 Cumulative Impacts

No changes to previously identified cumulative impacts in the Final Decision (02-AFC-01C), as amended, will result from the approval of this Petition.

3.12.5 Mitigation Measures

No changes to previously identified impacts visual resources will result from the approval of this Petition. Therefore, no additional resource protection measures, beyond those required in the Final Decision (02-AFC-01C), as amended, are necessary.

3.12.6 Consistency with LORS

With the exception of any offsite transmission lines, SEP is located within the City of Blythe. The FSA for BEP II found that the proposed project will be consistent with all applicable LORS. Table 3.12-2 lists LORS with policies or guidance applicable to the portion of the SEP project site with potential visual effects. Both General Plan (City of Blythe, 2007) and Zoning Ordinance (City of Blythe, 2013) have been updated since the FSA was written and the Zoning Ordinance has been updated since BEP II was amended in 2012. This section evaluates consistency of SEP with applicable policies and restrictions, as presented in Table 3.12-3. No locally designated scenic roadways are identified in the current General Plan.

Table 3.12-2. Laws, Ordinances, Regulations, and Standards for Visual Resources

LORS	Requirements/Applicability	Administering Agency	Petition to Amend Section Explaining Conformance
City of Blythe General Plan 2025 (2007)	Sets forth the goals, policies and directions the City will take in managing its future.	City of Blythe Planning Department	Section 3.6.2
City of Blythe Code of Ordinances, Title 17 (2013)	"Zoning Ordinance;" regulates land use development within the City.	City of Blythe Planning Department	Section 3.6.2

Table 3.12-3. Project Conformity with Local Visual Resources Plans and Policies

Goal/Objective/Policy	Project Consistency
City of Blythe General Plan 2025	
Section 2.1 – City Form	
Implementation Policy - Maintain the successive unfolding of views to the mountains and the Mesa from the City and to the City from the Mesa along key routes through design guidelines and standards related to setback, building height, color and materials as well as landscaping along these corridors.	Yes. The project as proposed will obstruct only minimal portions of mountain backdrops and, with a reduced width compared with BEP II, will likely reduce the portions of mountain backdrop obscured from views in locations close to the project site.
Section 2.5 – Large-Scale Commercial and Industrial Projects	
Policy 24 – Encourage a human scale in the design of large-scale projects. The perceived overall size of large projects should be mitigated to the extent possible through, for example, sensitive massing, appropriate scaling of building facades, articulation and organization of buildings, the use of color and materials, and the use of landscape screening.	Yes. Compliance with Conditions of Certification will ensure use of appropriate colors and materials and appropriate landscape screening at eye-level, and the more compact design of SEP compared with BEP II will result in the appearance of a reduced development envelope.
Implementation Policy – For large projects, require special visual studies as a part of design review. Visual simulations that accurately depict the appearance of the proposed project should be required of commercial or industrial buildings with a footprint in excess of 50,000 square feet. These simulations will be useful in demonstrating the implications of massing, scale, bulk, façade treatment, and color in the context of the surrounding community or landscape.	Yes. This visual study is intended to be reviewed by the City in its design review. It incorporates by reference visual simulations prepared for a previously proposed project on the project site and identifies primary differences in visual effect between the simulated views and project views that will show the project as described here.
Section 6.1 – Open Space	

Table 3.12-3. Project Conformity with Local Visual Resources Plans and Policies

Goal/Objective/Policy	Project Consistency
Policy 1 - Maintain hillsides and viable agricultural lands as open space for resource conservation and preservation of views.	Yes. The project will not result in the conversion of any lands currently under agricultural production.
Policy 3 - Maintain existing views of the Mesa and Colorado River from roadways and public uses and other rights-of-way on the valley floor whenever feasible.	Yes. SEP will not substantially alter the existing visual character in long-distance views of the Mesa.
City of Blythe Zoning Ordinance	
Chapter 17.10 – Lot and Building Dimensions	
17.10.040 – Building Height. D. All other unmanned structures in the I-S and I-G zone shall not exceed seventy-five feet in height without the issuance of a variance by the city council as set forth in Chapter 17.70.	Yes. SEP will require a variance to allow the 140-foot-tall HRSG stack.

3.12.7 Conditions of Certification

This Petition does not require changes to visual Conditions of Certification from the Final Decision (02-AFC-01C), as amended.

3.12.8 References

Caithness Blythe II, LLC. 2009. *Petition to Amend the Blythe Energy Project Phase II (02-AFC-1C)*. October 26.

California Energy Commission (CEC). 2005. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C*. Sacramento, California. December.

California Energy Commission (CEC). 2012. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C, Amendment Order No. 12-0425-3a.* Sacramento, California. April.

City of Blythe. 1989. *City of Blythe General Plan*.

City of Blythe. 2007. *City of Blythe General Plan 2025*

City of Blythe. 2013. *Code of Ordinances Title 17 Zoning*.

County of Riverside Transportation and Land Management Agency. 2003a. *Riverside County General Plan*.

3.13 Waste Management

The project modification discussed herein will not cause additional impacts to waste management beyond those identified in the Commission's Final Decision (02-AFC-01C), as amended. Any potential waste management impacts associated with the proposed modification will be less than significant.

3.13.1 Environmental Baseline Information

The affected environment has not substantially changed since the Final Decision (02-AFC-01C), as amended. SEP is located in the City of Blythe on a previously disturbed site adjacent to the existing BEP. The project will be constructed on up to 34 acres within the existing 76-acre licensed site. The 76-acre SEP site is bounded to the north by Riverside Avenue, to the east by the existing BEP facility, and to the south by Hobsonway. There are currently no structures to the west of the proposed plant location. The project site is enclosed by a permanent exclusionary fence and is located on fill material. The electrical interconnection is via a 161-kV line connecting to the existing Buck Boulevard substation to tie into an existing transmission line.

Hazardous waste, nonhazardous waste, and wastewater will be generated during construction of the combustion turbine and HRSG, auxiliary boiler, and cooling towers. The facility's construction and operation waste management plans (WMPs) required by WASTE-5 of the Final Decision, (02-AFC-01C), as amended, will detail the types of wastes that will be generated and their associated disposal methods. The wastes are not anticipated to differ significantly from those approved in the Final Decision (02-AFC-01C), as amended.

3.13.2 Environmental Analysis

During construction activities, the primary waste generated will be nonhazardous waste; however, some hazardous waste will also be generated. The types of construction waste and their estimated quantities are described in Table 3.13-1.

Table 3.13-1. Wastes Generated during the Construction Phase

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
Scrap wood, glass, plastic, paper, calcium silicate insulation, and mineral wool insulation	Construction	Normal refuse	90 tons	Nonhazardous	Recycle and/or dispose of in a Class II or Class III landfill
Scrap metals (including steel from welding/cutting operations, packing materials)	Construction	Parts, containers	25 tons	Nonhazardous	Recycle and/or dispose of in a Class III landfill
Concrete	Construction	Concrete	50 tons	Nonhazardous	Recycle and/or dispose of in a Class III landfill
Empty liquid material containers	Construction	Drums, containers, totes	100 containers	Nonhazardous solids	Containers <5 gallons will be disposed of as normal refuse. Containers >5 gallons will be returned to vendors for recycling or reconditioning.

Table 3.13-1. Wastes Generated during the Construction Phase

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
Spent welding materials (for example, welding rods)	Construction	Solid	100 pounds per month	Nonhazardous	Recycle with vendors or dispose of at a Class I landfill if hazardous
Waste oil filters	Construction equipment and vehicles	Solids	100 pounds per month	Nonhazardous	Recycle at a permitted TSDF
Used and waste lube oil	CTG and STG lube oil flushes	Hydrocarbons	200 drums	Hazardous	Recycle at a permitted TSDF
Oily rags, oil sorbent excluding lube oil flushes	Cleanup of small spills	Hydrocarbons	100 pounds per month	Hazardous	Recycle or dispose of at a permitted TSDF
Solvents, paint, adhesives	Maintenance	Varies	180 pounds per month	Hazardous	Recycle at a permitted TSDF
Spent lead acid batteries	Construction equipment, trucks.	Heavy metals	5 batteries per year	Hazardous	Store no more than 10 batteries (up to 1-year) – recycle offsite.
Spent alkaline batteries	Equipment	Metals	10 batteries per year	Universal Waste solids	Recycle or dispose of offsite at a Universal Waste Destination Facility
Steam turbine cleaning waste	Preboiler piping	Corrosive cleaning chemicals	200 gallons	Hazardous or nonhazardous liquid	Dispose of at a permitted TSDF
Waste oil	Equipment, vehicles	Hydrocarbons	20 gallons per month	Non-RCRA Hazardous Liquid	Dispose of at a permitted TSDF
Sanitary waste	Portable toilet holding tanks	Sewage	500 gallons per day	Nonhazardous Liquid	Remove by contracted sanitary service
Stormwater	Rainfall	Water	2 acre-feet	Nonhazardous Liquid	Discharge to existing permitted outfalls
Fluorescent, mercury vapor lamps	Lighting	Metals and PCBs	100 pounds per year	Universal Waste solids	Recycle or dispose of offsite at an Universal Waste Destination Facility
Passivating and chemical cleaning fluid waste	Pipe cleaning and flushing	Varies	500,000 gallons	Hazardous or nonhazardous liquid	Sample and characterize - if clean, dispose of in sanitary sewer; otherwise, manage appropriately offsite
Hydrotest water	Testing equipment and piping integrity	Water	600,000 gallons	Hazardous or nonhazardous liquid	Sample and characterize – if clean, dispose of in storm drain; otherwise, manage appropriately offsite

RCRA = Resource Conservation and Recovery Act of 1976
TSDF = Treatment, storage, and disposal facility

Most of the hazardous waste generated during construction will consist of solvents, welding materials and dried paint, which is expected to be minimal.

Table 3.13-2 presents estimates of SEP's operation waste generation. The types and volumes of operational waste generated by SEP are similar to or less than those assumed for the licensed project, as amended.

Table 3.13-2. Hazardous Wastes Generated during Operation

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
Lubricating oil/oil sorbents	From the gas turbine lubricating oil system	Petroleum hydrocarbons	Small quantities from equipment leaks and spills (100 lb/year)	Hazardous	Clean up area using sorbent and rags and dispose of material through a certified oil recycler
Lubricating oil filters	From the gas turbine lubricating oil system	Paper, metal, and petroleum hydrocarbons	Quantities will vary according to equipment manufacturer (500 lb/yr)	Hazardous	Recycle filters through a certified oil recycler
Hydraulic oil	From the gas turbine and steam turbine control valves	Petroleum hydrocarbons	Small quantities from equipment leaks and spills (240 lb/year)	Hazardous	Clean up area using sorbent and rags and dispose of material through a certified oil recycler
Solvents, paint, adhesives	Maintenance	Varies	40 lb/month	Hazardous	Recycle at a permitted TSDF
Laboratory analysis waste	From the chemical analysis reagents	Various	Generation of approximately 100 gallons per year	Hazardous	Recycle materials through a certified recycler or dispose of as a hazardous material
Selective catalytic reduction (SCR) catalyst units	SCR system (Warranty is 3 years; use tends to be 3 to 5 years)	Metal and heavy metals (high levels of vanadium)	Manufacturer's warranty of three years with use about every three to five years	Hazardous	Recycled by SCR manufacturer or disposed of in Class I landfill
Carbon monoxide catalyst units	HRSG (use tends to be 3 to 5 years)	Metal and heavy metals, including vanadium	560 lb every 3-5 yrs	Hazardous	Recycled by manufacturer
Cooling tower sludge	Deposits in cooling tower basin	Dirt from air and other chemical deposits (e.g., arsenic in water)	Approximately 100 to 200 lb/yr	May be hazardous (usually not)	Dispose of in Class II or III landfill if nonhazardous and Class I landfill if hazardous
Spent lead acid batteries	Electrical room, equipment	Metals	5 batteries per yr	Hazardous	Store mo more than 10 batteries (up to one year) then recycle offsite
Spent alkaline batteries	Equipment	Metals	50 lb/yr	Universal waste solids	Recycle or dispose of offsite at a Universal Waste Destination Facility

Table 3.13-2. Hazardous Wastes Generated during Operation

Waste	Origin	Composition	Estimated Quantity	Classification	Disposal
Fluorescent tubes	Lighting of maintenance areas	Metals	50 lb/yr	Universal waste solids	Recycle or dispose of offsite at a Universal Waste Destination Facility
Electronic components	Distributed control system, plant computers, instruments	Metals	50 lb/yr	Universal waste solids	Recycle with an approved facility
Oily rags	Maintenance, wipe down of equipment, etc.	Hydrocarbons, cloth	Approximately 800 rags per year	Hazardous	Recycle through a certified oil recycler or dispose of as a hazardous material
Chemical feed area drainage	Spillage, tank overflow, area washdown water	Water with water treatment chemicals	Minimal	May be hazardous if corrosive	Discharged to sewer if nonhazardous; shipped offsite for disposal if hazardous

3.13.3 Cumulative Impacts

No changes to previously identified cumulative impacts in the Final Decision (02-AFC-01C), as amended, will result from the approval of this Petition.

3.13.4 Mitigation Measures

No changes to previously identified impacts to waste management will result from the approval of this Petition. Therefore, no additional resource protection measures, beyond those required in the Final Decision (02-AFC-01C), as amended, are necessary.

3.13.5 Consistency with LORS

The project modification will comply with applicable waste management LORS.

3.13.6 Conditions of Certification

This Petition does not require changes to the waste management Conditions of Certification from the Final Decision (02-AFC-01C), as amended.

3.13.7 References

Caithness Blythe II, LLC. 2009. *Petition to Amend the Blythe Energy Project Phase II (02-AFC-1C)*. October 26.

California Energy Commission (CEC). 2005. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C*. Sacramento, California. December.

California Energy Commission (CEC). 2012. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C, Amendment Order No. 12-0425-3a.* Sacramento, California. April.

3.14 Water Resources

The project modification discussed herein will not cause additional impacts to water resources beyond those identified in the Commission's Final Decision (02-AFC-01C), as amended. Any potential water resource impacts associated with the proposed modification will be less than significant.

3.14.1 Environmental Baseline Information

The affected environment has not substantially changed since the Final Decision (02-AFC-01C), as amended, and potential impacts to water resources are the same as previously analyzed. SEP is located in the City of Blythe on a previously disturbed site adjacent to the existing BEP. The project will be constructed on up to 34 acres within the existing 76-acre licensed site. The 76-acre SEP site is bounded to the north by Riverside Avenue, to the east by the existing BEP facility, and to the south by Hobsonway. There are currently no structures to the west of the proposed plant location. The project site is enclosed by a permanent exclusionary fence and is located on fill material. The electrical interconnection is via a 161-kV line connecting to the existing Buck Boulevard substation to tie into an existing transmission line. The interconnection will be built on the previously surveyed SEP site.

Since the Final Decision (02-AFC-01C), as amended, the state of California is experiencing severe drought conditions, which prompted the Governor to declare a drought state of emergency in January 2014 and a continued declaration on April 1, 2015. These declarations require significant reductions in potable water use by urban purveyors and agricultural water suppliers.

3.14.2 Environmental Analysis

The amended project has incorporated several water saving measures into the design. As shown on the water balance (Figure 2-4a, Water Balance Diagram), wastewater discharges will be directed to a brine concentration system, which will allow for a higher plant capacity factor while not increasing water use beyond the already licensed amount of 2,800 acre-feet per year. Additional water conservation measures are low/zero-flow sanitary fixtures and the use of xeriscape landscaping.

The proposed SEP will rely on brackish groundwater from two 3,000-gpm wells. Water use in gpm is described for eight temperature scenarios in Figure 2-4b, Water Balance Diagram. Of the eight scenarios shown in the water balance, the highest water use is expected to be approximately 22 percent less than the maximum rate of usage – 3,000 gpm – from the licensed project. Overall water use is expected to remain approximately the same as the licensed project – 2,800 acre-feet per year, because of the higher operating capacity factor of approximately 80 percent. In addition, water use will be subject to the water use terms and conditions from the licensed project, including implementation of a Water Conservation Offset Program (WCOP) to offset the project's water use within the Palo Verde Irrigation District. Under the licensed project, the WCOP called for retirement or fallowing of recently irrigated farmland. As an alternative, the project owner is evaluating other offset options, such as canal lining, for a WCOP for the proposed SEP.

The wastewater generated by SEP will be the same as the licensed project in the Final Decision (02-AFC-01C), as amended. Wastewater will be disposed in onsite evaporation ponds, which have been sized to meet the demands of the proposed project modification, and will be smaller than the evaporation ponds associated with the licensed project. Draft waste discharge requirements were issued by the Regional Water Quality Control Board in 2004, but a new Report of Waste Discharge is likely required before the Regional Board will issue final waste discharge requirements. The process for obtaining these final requirements will be consistent with Condition of Certification Water Quality – 7.

With-project drainage patterns will be similar to the licensed project. Stormwater retention from the licensed project was assumed to be provided by the existing BEP basin, whereas the modifications proposed herein contain a new, onsite stormwater retention pond located south of the power block.

Stormwater quality will be addressed by meeting standard, statewide LORS for construction stormwater (Order No. 2009-0009-DWQ) and industrial stormwater (Order No. 2014-0057-DWQ), and, in addition, SEP will comply with Condition of Certification Water Quality – 2 requiring preparation of a Drainage, Erosion, and Sediment Control Plan.

3.14.3 Cumulative Impacts

No changes to previously identified cumulative impacts in the Final Decision (02-AFC-01C), as amended, will result from the approval of this Petition.

3.14.4 Mitigation Measures

No changes to previously identified impacts to water resources will result from the approval of this Petition. Therefore, no additional resource protection measures, beyond those required in the Final Decision (02-AFC-01C), as amended, are necessary.

3.14.5 Consistency with LORS

The project modification will comply with applicable water resource LORS.

3.14.6 Conditions of Certification

This Petition requires the following editorial change to Condition of Certification Water Res-4 from the Final Decision (02-AFC-01C), as amended.

> **WATER RES - 4:** ~~BEP II's~~**The project's** annual use of water shall not exceed a maximum of 2,800 acre-feet per year.
>
> **Verification:** In compliance with WATER RES-2, the project owner shall record and provide to the CPM water use reports that demonstrate annual water consumption does not exceed 2,800 AFY.

3.14.7 References

Caithness Blythe II, LLC. 2009. *Petition to Amend the Blythe Energy Project Phase II (02-AFC-1C)*. October 26.

California Energy Commission (CEC). 2005. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C*. Sacramento, California. December.

California Energy Commission (CEC). 2012. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C, Amendment Order No. 12-0425-3a*. Sacramento, California. April.

3.15 Worker Safety and Fire Protection

The project modification discussed herein will not cause additional impacts to worker safety and fire protection beyond those identified in the Commission's Final Decision (02-AFC-01C), as amended. Any potential worker safety and fire protection impacts associated with the proposed modification will be less than significant.

3.15.1 Environmental Baseline Information

The affected environment has not substantially changed since the Final Decision (02-AFC-01C), as amended, and potential impacts to worker safety and fire protection are the same as previously analyzed. SEP is located in the City of Blythe on a previously disturbed site adjacent to the existing BEP. The project will be constructed on up to 34 acres within the existing 76-acre licensed site. The 76-acre SEP site is bounded to the north by Riverside Avenue, to the east by the existing BEP facility, and to the south by Hobsonway. There are currently no structures to the west of the proposed plant location. The project site is enclosed by a permanent exclusionary fence and is located on fill material. The electrical interconnection is via a 161-kV line connecting to the existing Buck Boulevard substation to tie into an existing transmission line. The interconnection will be built on the previously surveyed SEP site.

3.15.2 Environmental Analysis

No new significant impacts to worker safety and fire protection will result from the proposed project modification.

3.15.3 Cumulative Impacts

No changes to previously identified cumulative impacts in the Final Decision (02-AFC-01C), as amended, will result from the approval of this Petition.

3.15.4 Mitigation Measures

No changes to previously identified impacts to worker safety and fire protection will result from the approval of this Petition. Therefore, no additional resource protection measures, beyond those required in the Final Decision (02-AFC-01C), as amended, are necessary.

3.15.5 Consistency with LORS

The project modification will comply with applicable worker safety and fire protection LORS.

3.15.6 Conditions of Certification

This Petition does not require changes to the worker safety and fire protection Conditions of Certification from the Final Decision (02-AFC-01C), as amended.

3.15.7 References

Caithness Blythe II, LLC. 2009. *Petition to Amend the Blythe Energy Project Phase II (02-AFC-1C)*. October 26.

California Energy Commission (CEC). 2005. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C*. Sacramento, California. December.

California Energy Commission (CEC). 2012. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C, Amendment Order No. 12-0425-3a.* Sacramento, California. April.

3.16 Alternatives

This section identifies and assesses feasible alternatives for SEP. During the licensing of the amended BEP II, the Commission assessed feasible alternative site locations, generation and cooling technologies, and water supply sources. In the Commission's 2005 alternatives assessment, the Commission Staff eliminated what was then-project owner's project objective to site BEP II adjacent to the existing BEP, but retained the essence of the project owner's remaining project objectives. The project objectives used by the Commission in assessing project alternatives for BEP II were:

- Construction of a merchant power plant
- Site located near a substation and key infrastructure
- Generation of approximately 520 megawatts

The project owner relied on the above objectives in conducting the below alternatives analysis for SEP, with the exception of the last objective, which for SEP is to generate 553 MWs.

3.16.1 Alternative Sites

A feasible alternative site is based on whether the alternative site satisfies most of the project objectives and whether locating SEP at an alternative site will substantially lessen any identified potential impacts of the project. The Commission determined that constructing BEP II adjacent to the existing BEP I offered two advantages: 1) a reduction in the need to construct redundant facilities and infrastructure; and 2) BEP II will be constructed on disturbed and evaluated land for which biological mitigation has been provided in the form of desert tortoise mitigation. These advantages also extend to the construction of SEP adjacent to the existing BEP.

Using these objectives listed above, the Commission identified four alternative project sites to determine if they will reduce or eliminate identified impacts associated with the proposed BEP II site. These sites are the Blythe Airport Site, Interstate 10 Site, South of Blythe Site, and the Devers Substation Site north of Palm Springs. The Commission concluded that an alternative site will not be preferable to the proposed BEP II site and found that the alternative sites will defeat a core goal and objectives of the project. Each of those locations is reviewed below with respect to the SEP site.

The Blythe airport site is located in unincorporated Riverside County. The site is located on the Blythe Airport property, within airport Compatibility Zone D (similar to the proposed site). The site is relatively flat and appears to have been farmed in the past but has been left fallow and allowed to revert back to desert scrub habitat. Development of this site requires longer linear features to interconnect it to BEP, resulting in increased ground disturbances. The increase in ground disturbance could increase impacts to air quality, biological, cultural, and soil resources. Furthermore, the site has not been cleared and fenced, as has the proposed site, so additional biological resources could be impacted from clearing and developing the site. The construction of the electrical interconnection to the Buck substation will require a longer transmission line that potentially crosses the centerline of the airport runways, potentially resulting in aviation obstructions or increased cost (and environmental disturbance) from having it placed underground.

The I-10 site is in unincorporated Riverside County and on agricultural land bordered by West 14th Avenue, the West Side Drain, Seeley Avenue, and Arrowhead Boulevard. The I-10 site is designated prime farmland, which will require mitigation for impacts not associated with the proposed site. Farmland can also provide both foraging and nesting habitat for sensitive biological resources. Its removal may result in impacts not associated with the proposed project site. The site is located in a more populated area with residential properties surrounding it. Developing the I-10 site will require longer linears to interconnect BEP and SEP, likely making interconnecting these two facilities uneconomical. Although the site satisfies most of the project objectives, it is not environmentally superior to the proposed site, but instead, will have greater environmental impacts.

The South of Blythe site is located in unincorporated Riverside County, bound by 16th Avenue to the north, the Atchison, Topeka, and Santa Fe Railroad line to the south and east, and Lovekin Boulevard to the west. Interconnecting this site to the BEP or the Blythe substation will require longer linear features, potentially resulting in increased impacts because of larger disturbance areas. The site's designated uses are urban development, prime farmland, and farmland of statewide importance. Locating SEP at this site will impact prime farmland and farmland of statewide importance, requiring mitigation for impacts not associated with the proposed site. Farmland can also provide both foraging and nesting habitat for sensitive biological resources. Its removal may result in impacts not associated with the proposed project site. This site also contains a number of residences within several hundred feet of its boundary, which could result in possible construction and operational impacts not associated with the proposed site. As a result, the South of Blythe site is not environmentally superior to the proposed site, but instead, will have greater environmental impacts.

The Devers site was not considered as an alternative for SEP because it is currently occupied by the CPV Sentinel project.

In conclusion, the alternative sites considered could satisfy some of the project objectives, but none of the alternative sites will substantially lessen any identified potential environmental impacts of the project, and in most cases, will result in greater impacts than the proposed site.

3.16.2 Alternative Generation Technologies

The 2005 Commission Decision reviewed alternative generation technologies to replace BEP II's gas-fired generation with primarily renewable technologies. Renewable technologies analyzed encompass geothermal, biomass, solar (photovoltaic and solar thermal), wind, and hydroelectric. The Commission concluded these renewable technologies cannot feasibly meet the project objectives, and that the technologies analyzed have the potential to create potentially significant environmental impacts.

The SEP site is the same site as the BEP II site and is not of sufficient size to allow for solar or wind generating technologies to satisfy the project objective to generate 553 MWs. Likewise, the site does not contain the resources necessary for geothermal, biomass, or hydroelectricity to be employed to satisfy the project objectives. As such, alternative generating technologies will not satisfy most of the project objectives or substantially lessen any identified potential impacts of the project, and, in most cases, could result in greater impacts than the proposed generation technology.

3.16.3 No Project Alternative

The Commission also analyzed a no project alternative, assuming that BEP II will not be built. The Commission found that the no project alternative was not superior to BEP II because it will lead to continued operation of older, less efficient power plants, it will not meet the need for new reliable electricity generation, and it will cause the loss of the economic benefits.

SEP will be the most efficient fossil fuel power plant in the California's generating fleet, causing less efficient fossil-fueled generation to be dispatched less frequently. Additionally, SEP is expected to: generate positive economic impacts by increased revenue to the County and local community from sales/property taxes as a result of construction activities, recruit employees and purchase materials from the area, and procure local services once operational. Thus, the no project alternative is not superior to SEP because it will lead to operation of older, less efficient power plants, it will not meet the need for new reliable electricity generation, and it will cause the loss of economic benefits.

3.16.4 Cooling Technology Alternatives

The 2005 Commission Decision contains a robust analysis of alternative cooling technologies, including the use of dry and hybrid cooling, and water supply alternatives.

3.16.4.1 Alternative Dry and Hybrid Cooling

The 2005 Commission Decision concluded that dry and hybrid cooling were both technologically feasible for BEP II, but not practically feasible for the project to meet its objectives. The reasoning behind the Commission's conclusions is that dry cooling will reduce operational efficiency, increase capital/ operational costs, and will create substantially worse noise, visual, and thermal plume impacts in a hot desert environment.

The use of dry cooling for the SEP will result in approximately a 7 percent reduction in electrical output during hot weather conditions, when electrical power is most in demand, with approximately twice the cost over the use of a wet cooling tower. A dry cooling system for SEP will need to be approximately 274 feet wide by 300 feet long and 85 feet tall; whereas, the wet cooling tower will be 42 feet wide by 481 feet long and 42 feet tall. Additionally, the larger dry cooling system will result in a larger thermal plume area. Therefore, the Commission's conclusions reached in 2005 to reject the use of dry cooling for BEP II are still applicable to SEP—dry cooling will decrease operational efficiency; increase capital/operational costs; and will worsen noise, visual, and thermal plume impacts when compared to the proposed wet cooling tower.

3.16.4.2 Alternative Water Supply

The Commission found that: 1) the groundwater under the SEP site was legally distinct from Colorado River water, 2) land owners have rights under California law to use groundwater, and 3) that BEP II's use of brackish groundwater conforms to State Water policy. The Commission noted that BEP II's expected well water concentration of TDS of 1100 parts per million exceeded the Resolution 75-58's threshold for brackish water (1000 parts per million of TDS) and that the well water's chloride concentrations of 200 parts per million was approaching the threshold of 250 parts per million for brackish water.

In 2005, the Commission also reviewed the possible use of reclaimed water from the City of Blythe Wastewater Treatment Plant and return water from an agricultural drain (Rannells Drain). The Commission found that there was insufficient supply of City of Blythe wastewater to be considered a reasonable alternative for use in BEP II's cooling tower, and that the use of reclaimed water was essentially use of Colorado River water because the City's percolation of the groundwater contributed to flows returning to the Colorado River.

The Commission found use of the agricultural drain water from the Rannells Drain, which returns a significant portion of high quality water to the Colorado river, does not represent a reasonable alternative because low-flow conditions in the Drain require operational spillage of fresh water from the Colorado River and use of this alternative water supply does not conform to State Water policy 75-58. The use of Rannells Drain water for SEP would similarly not represent a reasonable alternative because it would not conform to State Water policy 75-78.

The groundwater proposed for SEP continues to display brackish water characteristics. The SEP well water quality data presented in Table 2-2 of this PTA shows that the groundwater's chloride level of 280 parts per million is now clearly above the State's threshold for brackish water of 250 parts per million. Additionally, the TDS levels in the groundwater source continue to be above the State's threshold of 1000 ppm. Therefore, the proposed SEP water source is not fresh water and its use conforms to State water policy.

The City of Blythe has not increased the discharge of wastewater at the wastewater treatment plant, nor has additional treatment been installed at the wastewater treatment plant. Therefore, use of the City of Blythe wastewater as water supply for SEP is infeasible.

3.16.5 Summary of Alternatives Analysis

Based on the analysis presented above, no alternative site, generation or cooling technology, or water supply is feasible and cost-effective to reduce or eliminate potential SEP impacts (no significant

unmitigated SEP impacts were identified). Furthermore, the no project alternative will not satisfy most of the project objectives, or provide the economic benefits to the region.

3.16.6 References

Caithness Blythe II, LLC. 2009. Petition to Amend the Blythe Energy Project Phase II (02-AFC-1C). October 26.

California Energy Commission (CEC). 2005. *Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C*. Sacramento, California. December.

California Energy Commission (CEC). 2012. *Order Approving the Petition to Amend for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C*. Sacramento, California. April.

SECTION 4

Proposed Modifications to the Conditions of Certification

Consistent with the requirements of CEC Siting Regulations Section 1769 (a)(1)(A), the project owner is providing proposed modifications to the project's Conditions of Certification in each subsection of Section 3 in this amendment Petition.

SECTION 5

Potential Effects on the Public and Property Owners

CEC Siting Regulations Section 1769(a)(1)(I) requires the project owner to address any potential effects the proposed project modification may have on nearby property owners, the public, and parties to the proceeding.

The proposed project modification will have minimal effects on nearby property owners, the public, and parties to the proceeding.

SECTION 6

List of Property Owners

Consistent with the CEC Siting Regulations Section 1769(a)(1)(H), this section lists the property owners affected by the proposed modifications. Property owners within 1,000 feet of the proposed project modification are listed in Table 6-1.

Table 6-1. Property Owners within 1,000 Feet

Assessor Parcel Number	Owner	Mailing Address
824-101-012,013	ALTAGAS POWER HOLDINGS INC	1411 Third St #A, Port Huron, MI 48060
821-110-004, 824-080-003, 824-080-005, 824-090-028, 824-102-020, 824-102-025, 824-102-026	GILA FARM LAND	113 S La Brea Ave., Los Angeles, CA 90036
821-120-028	ALTAGAS POWER HOLDINGS INC	1411 Third St #A, Port Huron, MI 48060
824-080-004	COUNTY OF RIVERSIDE	PO Box 1180, Riverside, CA92502
824-101-021	BLYTHE ENERGY	1411 Third St #A, Port Huron, MI 48060
824-101-022	USA	PO Box 281213, Lakewood, CO 80228

Appendix 2A
Executed System Impact Study

LARGE GENERATOR INTERCONNECTION

System Impact Study

2014-G35 Project

Western
AREA POWER
ADMINISTRATION

Desert Southwest Region

April 29, 2015

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1 EXECUTIVE SUMMARY

A system impact study was completed to analyze the effects of the 2014-G35 Project (Project) on the Western Area Power Administration (Western) system. The conceptual Project includes a 539 MW combined cycle plant interconnected to the existing Western Blythe 161 kV substation. The Large Generator Interconnecting Customer (Customer) has requested to have its Project studied as a Network and Energy Resource Interconnection Service. The planned in-service date is for June 2, 2018.

Western used a 2019 heavy summer Western Electricity Coordinating Council (WECC) and Southwestern Area Transmission (SWAT) base case developed in 2014. This case represents a reasonable dispatch of load and generation throughout the system based on input from WECC members during the base case building process. The WECC base case was then coordinated within the sub-regional planning group, SWAT, to ensure that the case is as up-to-date as possible. The case was then updated to include higher priority queue projects in the vicinity of the proposed Project. The Project generation displaced generation in the Southern California area. A sensitivity of all the Western Queue projects, ahead of this Project, dropping out of the queue was also included.

Power flow, transient stability, and short circuit studies were performed on the study cases. Steady state thermal and voltage violations were based on the WECC System Performance Criteria for transmission system planning. Transient stability was based on North American Electric Reliability Corporation (NERC)/WECC Stability and Post-transient Analysis Evaluation Criteria. Short circuit duties were evaluated against ratings of existing circuit breakers owned by Western.

The addition of the Project results in a number of thermal overloads on Western's system for both NERC Category B and NERC Category C events. There are also potential violations on neighboring systems including voltage issues on the Metropolitan Water District (MWD) system and thermal overloads on the Southern California Edison (SCE) Julian Hinds to Mirage 230 kV transmission line. SCE and MWD may require an Affected System Study to be performed that would be financed by the Project participants. Further coordination between the Project participants, MWD, and SCE will be necessary.

If the Customer elects for Network Resource Interconnection Service with Western, there are a few system upgrades that will be required. For the NERC B event of the loss of a Parker 230/161 kV transformer overloading the other Parker 230/161 kV transformer, possible mitigation would be to replace the two transformers with higher rated transformers or to add a third transformer to the Parker Substation and any associated bay work. The overloads on the Parker – G14 161 kV transmission line will require replacing some substation equipment at the Parker 161 kV substation. Additional jumper replacements at both the Knob and Gold Mine Tap substations will also be

needed. In addition, there are a significant number of N-1-1 type events that would impact the Project's maximum allowable generator output. The Customer may want to decide to upgrade some or all of these overloaded system elements to avoid generation curtailments for these potential system reliability limits. A Remedial Action Scheme (RAS) may be required if the upgrades, for the N-1-1 events, are not performed.

If the Customer elects for an Energy Resource Interconnection Service with Western, the maximum allowable output from the Project's generation would be no more than 280 MW to maintain system reliability. The Project maximum output could be lower than 50 MW if the potential Julian Hinds – Mirage 230 kV transmission line overloads cannot be mitigated without system upgrades.

Nothing in this report constitutes an offer of transmission service or determines if Western has the contractual available transmission capacity (ATC) to support the interconnection described in this report. The Customer will need to submit a Transmission Service Request to Western to evaluate what would be needed to accommodate the Project's transmission service needs.

For a Network Resource Interconnection Service, the preliminary cost estimate to interconnect the project to the Western system is [redacted] and the estimated schedule indicates that the Project will take 2 to 3 years to complete. For an Energy Resource Interconnection Service, the preliminary cost estimate to interconnect the project to the Western system is [redacted] and the estimated schedule indicates that the Project will take 2 to 3 years to complete.

2 INTRODUCTION

The Large Generator Interconnecting (LGI) Customer (Customer) has requested to be studied as a Network and Energy Resource Interconnection Service from Western Area Power Administration (Western) for the 2014-G35 Project (Project). Pursuant to the Large Generator Interconnection Procedure (LGIP) of Western's Open Access Transmission Tariff (OATT), a System Impact Study (SIS) has been conducted to evaluate the impact of the proposed interconnection on the reliability of the transmission system. The conceptual Project includes a combined cycle plant interconnected to Western's existing Blythe 161 kV substation. In the proposed configuration, the Project will produce a total of 539 MW. The planned in-service date is June 2, 2018. The Project Point of Interconnection (POI) and the delta of MW and MVAR flow between the pre-Project and post-Project cases are shown in **Figure 1**. **Figure 1** is a good way to see how the Project's power distributes across the fully intact system and also how it impacts the voltages across the system.

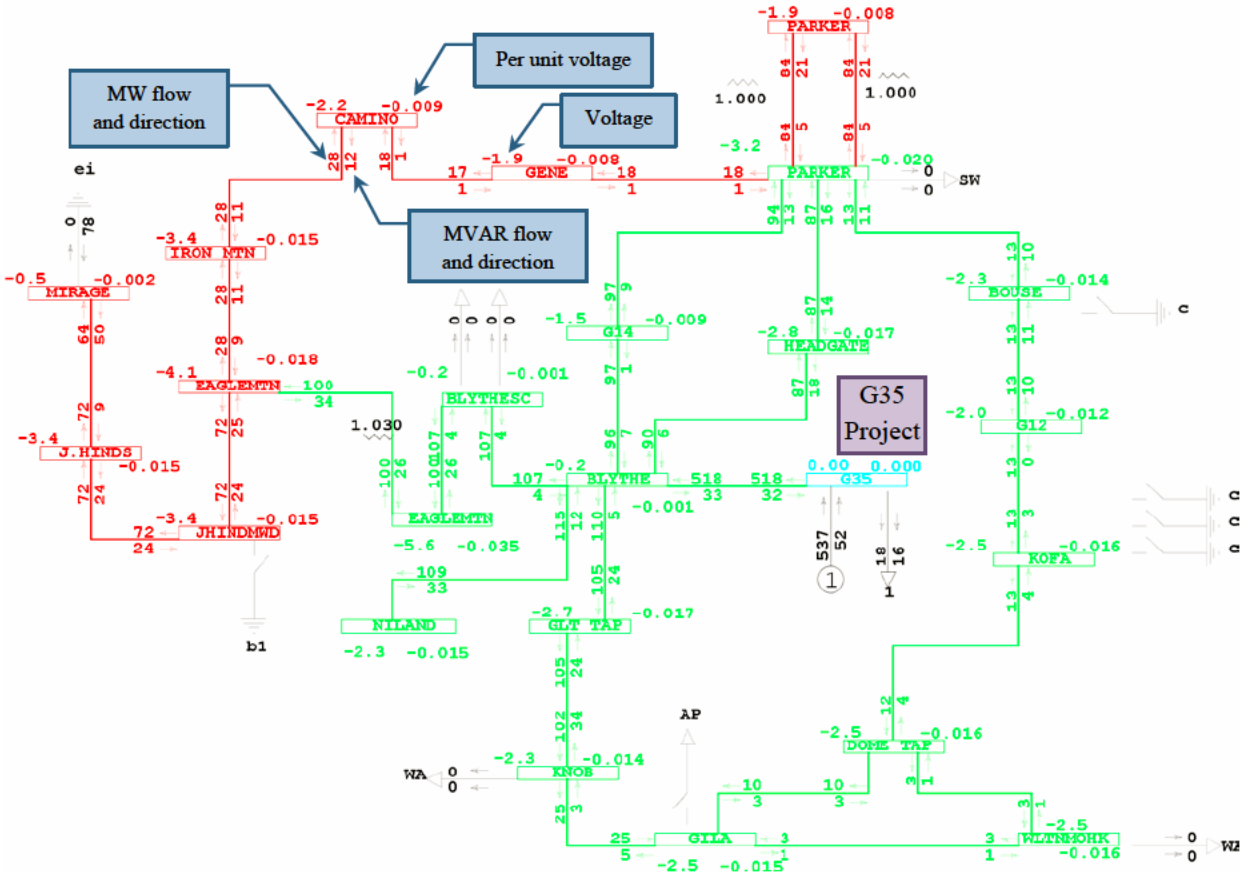


Figure 1: Project Location and System Diagram

Western used a 2019 heavy summer Western Electricity Coordinating Council (WECC) and Southwestern Area Transmission (SWAT) base case developed in 2014. This case represents a

reasonable dispatch of load and generation throughout the system. The technical analysis performed in this study includes power flow, transient stability, and short circuit analysis. Assumptions and modifications to the cases, along with a technical analysis of the Project's impact on the cases, follow in the subsequent sections.

Nothing in this report constitutes an offer of transmission service or determines if Western has the contractual available transmission capacity (ATC) to support the interconnection described in this report. The Customer will need to submit a Transmission Service Request to Western to evaluate what would be needed to accommodate the Project's transmission service needs.

3 STUDY CASES AND ASSUMPTIONS

A pre-Project case was developed for 2019 heavy summer conditions including any LGI generation ahead of this Project in Western's queue. The queue projects added to the pre-Project case displaced generation in various locations as detailed in **Table 2**.

The General Electric (GE) Positive Sequence Load Flow (PSLF) version 18.1 software was used to analyze the pre- and post-Project study cases with respect to North American Electric Reliability Corporation (NERC) Category A, B and C events and their corresponding Western Electricity Coordinating Council (WECC) system performance criteria. GE PSLF was also used to check for new system performance criteria violations in each of the post-Project cases when compared to the corresponding pre-Project case.

3.1 Cases Studied

For the purposes of this study, Western used the 2019 heavy summer Western Electricity Coordinating Council (WECC) and Southwestern Area Transmission (SWAT) base case developed in 2014. This case represents a reasonable dispatch of load and generation throughout the system and is the most recently built SWAT case available. Generation in the Southern California area was displaced by the Project generation. A sensitivity of all Western Queue projects, ahead of this project, not moving forward and dropping out of the queue was also studied. Descriptions of the cases built and used in the study are included in **Table 1** below.

Table 1 – Cases Built for the Study

PSLF Case Name	Case Description
2019hs_pre	Pre-Project case with the G35 Project off, and all Western LGI Queue projects off
2019hs_ pst	Post-Project case with the G35 Project on, and all Western LGI Queue projects off
2019hs_Qpre	Pre-Project case with the G35 Project off, and all Western LGI Queue projects on (Queue projects ahead of this Project)
2019hs_Qpst	Post-Project case with the G35 Project on, and all Western LGI Queue projects on (Queue projects ahead of this Project)

LGI generators that are ahead of this Project in Western's LGI queue and were added to the study case are shown in **Table 2**.

Table 2 – Western Queue Projects Included in Study Cases

Project Queue Number	MW	Interconnection Location	Gen Type	Generation Displaced
G12	110	Bouse - Gila 161 kV Line	Solar Thermal	Southern California
G14	150	Parker - Blythe 161 kV Line	Solar Thermal	Southern California
G33	100	Liberty - Parker 230 kV Line	Photovoltaic	Southern California

If any project ahead of this Project in Western's LGI queue drops out, then there is a possibility that a re-study may be necessary.

3.2 Transient Stability Modeling

The transient stability model for the Project was based on data received from the Customer. If the customer supplied dynamic data, used for this study, does not accurately represent the technology that will be used at the time of construction for the Project, a possible re-study may be necessary and could impact the cost and schedule of the Project. Other dynamic data, used in the transient stability simulations, came from the WECC Master Dynamics File associated with the WECC 2019 heavy summer case. Details of the Project transient stability model are included in **Appendix C**.

3.3 Short Circuit Modeling

The Steady state generator models for the Project were based on data received from the Customer. The Project generator's subtransient reactance values used in the short circuit analysis were pulled from the Project's submitted dynamic data.

3.4 Additional Assumptions

A study area was defined to appropriately determine the impact of the Project on Western's system. If violations on neighboring systems were found, they were also monitored and recorded. The main study area defined for power flow contingencies, dynamic simulation contingencies and short circuit studies includes Western's buses in the vicinity of Parker and Gila Substations. Western's ten year plan projects were modeled if they were expected to be complete by summer 2019. The ten year plans of surrounding utilities were modeled if they were included in the WECC/SWAT 2019 case.

The Project model for the generator includes a reactive power capability range with a Qmax of 260 MVARs and a Qmin of -260 MVARs. As the study results are based on this assumption, if the Project is not capable of maintaining a power factor within the range of 0.95 leading to 0.95 lagging at the plant's point of interconnection to Western's system, additional reactive support may be required.

4 STUDY METHODOLOGY

Defining a study methodology is necessary to analyze the power flow, short circuit and transient stability results. The study methodology defines performance criteria and provides a framework for analyzing the impact of the Project on Western's system.

4.1 Power Flow Analysis

Power flow analysis was performed on both the pre- and post-Project cases discussed above. The cases were used to simulate the impact of the Project during normal and contingency conditions. All power flow study work was conducted with version 18.1 of GE's PSLF software. Power flow results were monitored and recorded using GE PSLF's Steady State Analysis Tool (SSTOOLS) software package.

4.1.1 Power Flow System Performance Criteria

Reported thermal overloads were limited to the condition where a modeled transmission component was loaded over 100% of its appropriate normal or emergency rating (as entered in the power flow database).

As described immediately below, violations of steady-state voltage criteria were based on minimum acceptable voltages, maximum acceptable voltages, and maximum acceptable post-transient voltage deviations.

Consistent with industry practice, for NERC A normal N-0 (no contingency) conditions, voltage criteria violations were defined as per unit voltages less than 0.95 or greater than 1.05 on all buses less than 500 kV; and, as per unit voltages less than 1.00 or greater than 1.10 for 500 kV buses. For NERC B (single contingency) and NERC C (multiple contingency) conditions, voltage criteria violations were defined as per unit voltages less than 0.90 or greater than 1.10 on all buses less than 500 kV; and, as per unit voltages less than 0.95 or greater than 1.10 for 500 kV.

In addition to steady-state minimum and maximum voltage criteria, per the WECC post-transient voltage deviation criteria in **Table 3**, voltage deviations between the pre-contingency and post-contingency conditions were reported whenever greater than 0.05 per unit for NERC B (single contingency) conditions; and, whenever greater than 0.10 per unit for NERC C (multiple contingency) conditions.

The Project must be capable of maintaining a power factor within the full range of 0.95 leading to 0.95 lagging at the plant's point of interconnection to Western's system.

4.1.2 Power Flow Analysis Process

The system was simulated with static VAR devices active, load tap changing in service, phase shifter controls active, and area interchange applied for pre-contingency conditions. For contingency conditions, the system was simulated with static VAR device, load tap changer, phase shifter, and area interchange settings fixed at pre-contingency settings. For contingencies

that resulted in a loss of 20 MW or more, generation in California, Nevada, and Arizona participated in a redispatch of generation to account for the lost generation or increased system power losses.

The contingencies simulated included:

- All single transmission circuit outages within the study area (NERC B).
- All single transformer outages within the study area (NERC B).
- The Project equivalent generator outage (NERC B).
- Credible multiple contingencies within the study area (NERC C).

The contingency lists were initially generated using GE PSLF's "sstools-outage-v5.p" program. These lists were then modified with changes such as modeling breaker-to-breaker outages and modeling multiple lines connected through a tap. The list of contingencies used for the study's scenarios can be found in **Appendix B.**

4.2 Transient Stability

Transient stability studies were performed to ensure system stability following a 3-phase fault on the system. Transient stability analysis was completed for pre-Project and post-Project conditions. Prior to finalization of the dynamics data set, various "bump" tests were run to ensure true power system behavior is not masked by any remote dynamic modeling anomalies.

Transient stability analysis, based on WECC Disturbance-Performance Criteria, was performed for selected system contingencies. Initial transient stability contingency simulations were performed out to 10 seconds. If system performance was not assessed with confidence, simulation times up to 20 seconds were used to evaluate system damping. Under normal fault clearing times for NERC B and C contingencies, all 345 kV and 500 kV contingency faults simulated a 3-phase 4-cycle fault clearing time; and, all lower voltage contingency faults simulated a 3-phase 5-cycle fault clearing time. Under delayed fault clearing times for NERC C contingencies, a 3-phase 15-cycle fault clearing time was simulated. **Appendix D** contains the switch decks used to run the transient stability simulations.

Table 3 and **Figure 2** are excerpts from the WECC System Performance Criteria and were used to evaluate NERC Categories A, B, and C events that were simulated in this study.

Table 3 – NERC/WECC Stability and Post-transient Analysis Evaluation Criteria

NERC and WECC Categories	Outage Frequency Associated with the Performance Category (outage/year)	Transient Voltage Dip Criteria	Minimum Transient Frequency Criteria	Post Transient Voltage Deviation Criteria
A System normal	Not Applicable	Nothing in addition to NERC		
B One element out of service	≥ 0.33	Not to exceed 25% at load buses or 30% at non-load buses. Not to exceed 20% for more than 20 cycles at load buses.	Not below 59.6Hz for 6 cycles or more at a load bus.	Not to exceed 5% at any bus.
C Two or more elements out of service	0.033 – 0.33	Not to exceed 30% at any bus. Not to exceed 20% for more than 40 cycles at load buses.	Not below 59.0Hz for 6 cycles or more at a load bus.	Not to exceed 10% at any bus.
D Extreme multiple-element outages	< 0.033	Nothing in addition to NERC (except WECC PCUR requirements)		

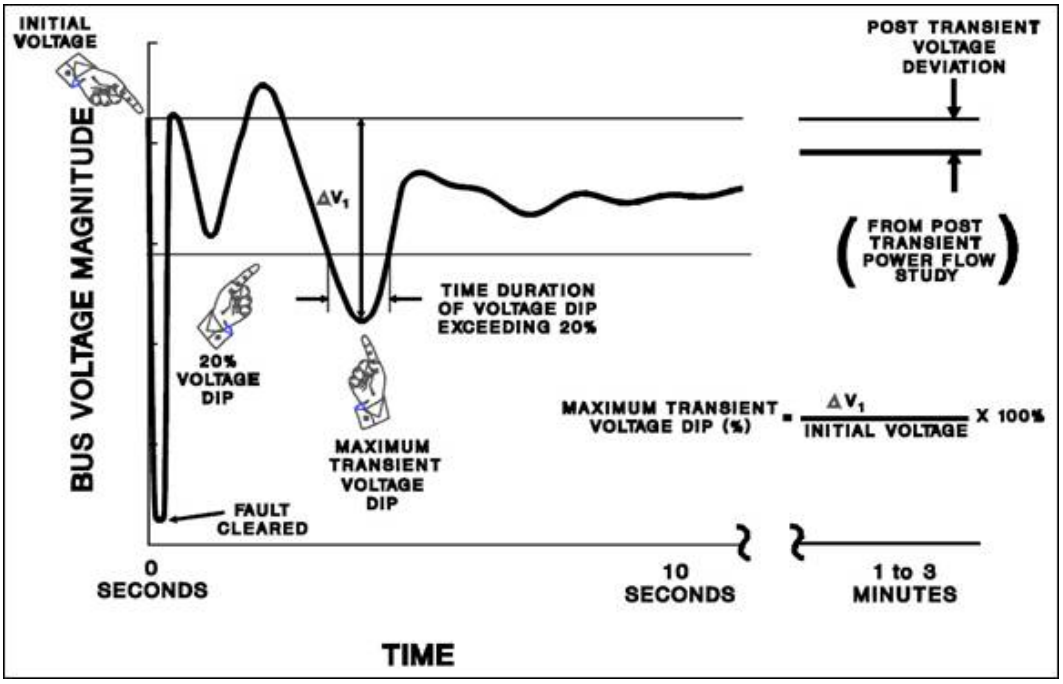


Figure 2: Graphical Representation of Stability Analysis Evaluation Criteria

All transient stability simulations were conducted using version 18.1 of GE's PSLF software. A modified version of the WECC-distributed "Alldyns.p" program was used to model operations specific to transient stability analysis.

The Worst Condition Analysis (WCA) tool, available in the GE PSLF PLOT software package, tracks and records the transient stability behavior of all output channels contained within the binary output file of a transient stability simulation. The monitoring of channel output was set to begin three cycles after fault clearing to ensure that all stability behavior would be accurately captured. The output results from the WCA program were used to report any NERC/WECC Performance Criteria violations. System damping was assessed visually with the aid of stability plots obtained through GE PSLF PLOT software.

The following monitored parameters were used to evaluate system stability performance:

- Bus Voltage
- Bus Frequency
- Generator Terminal Voltage
- Generator Frequency
- Generator Rotor Angle

4.3 Short-Circuit Duty

Short-circuit duty analysis applies three-phase faults at the specified buses in the Project study area. The calculated short-circuit data is then compared to the current interrupting capability at each breaker location. Short-circuit studies were performed for pre-Project and post-Project conditions using GE PSLF Version 18.1.

5 RESULTS

The 2014-G35 Project was analyzed based on its impact to Western's system in addition to surrounding systems. The power flow, transient stability, and short circuit analyses are described below.

5.1 Power Flow Results

The addition of the Project results in a number of thermal overloads on Western's system for both NERC B and NERC C events. There are also potential violations on neighboring systems including potential voltage issues on the Metropolitan Water District (MWD) system and potential thermal overloads on the Southern California Edison (SCE) Julian Hinds to Mirage 230 kV transmission line. **Figure 3** shows the highest recorded flow violation for N-1 and N-1-1 events on Western's system. A summary of the most significant results is shown in **Tables 4 – 9** below. The "(post) - (pre)" column in the Tables below is for informational use only and is used to show the delta flow (or voltage) between pre-Project and post-Project for the same event.

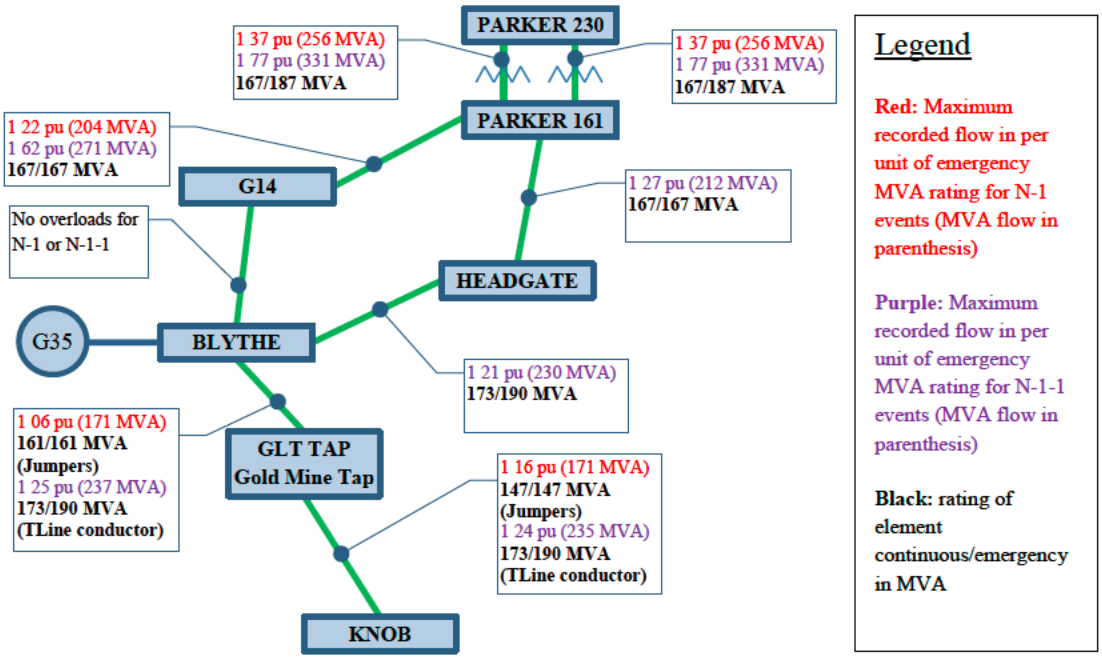


Figure 3 – N-1 and N-1-1 Maximum Recorded Flow Violations on Western's System

Table 4 – NERC B Per-Unit Delta Voltage

Bus Name	kV	Area	Zone	Contingency	pre-project	(post) - (pre)	post-project
GENE BK1	230	24	949	Line PARKER 230.0 to GENE 230.0 Circuit 1	-0.049	-0.006	-0.055
GENE BK2	230	24	949	Line PARKER 230.0 to GENE 230.0 Circuit 1	-0.049	-0.006	-0.055
GENE LX1	230	24	949	Line PARKER 230.0 to GENE 230.0 Circuit 1	-0.049	-0.006	-0.055
GENE LX2	230	24	949	Line PARKER 230.0 to GENE 230.0 Circuit 1	-0.049	-0.006	-0.055
GENE	230	24	949	Line PARKER 230.0 to GENE 230.0 Circuit 1	-0.047	-0.005	-0.052
CAMINO	230	24	949	MEAD - CAMINO - IRON+GENE	0.051	0.009	0.060

Table 5 – NERC B Per-Unit Flow

Bus From Name	From kV	Bus To Name	To kV	ck	Area	Zone	Contingency	Rate 0	Rate 1	Pre-project	(post) - (pre)	Post-project
PARKER	161	PARKER	230	2	14	191	Tran PARKER 161.00 to PARKER 230.00 Circuit 1	167	187	0.606	0.762	1.368
PARKER	161	PARKER	230	1	14	191	Tran PARKER 161.00 to PARKER 230.00 Circuit 2	167	187	0.606	0.762	1.368
PARKER	161	G14	161	1	14	191	Line BLYTHE 161.0 to BLYTHESC 161.0 Circuit 1	167	167	0.474	0.745	1.219
J.HINDS	230	MIRAGE	230	1	24	949	Line NILAND 161.0 to BLYTHE 161.0 Circuit 1	357	357	0.899	0 289	1.188
J.HINDS	230	MIRAGE	230	1	24	949	MEAD - CAMINO - IRON+GENE	357	357	0.900	0 285	1.185
J.HINDS	230	MIRAGE	230	1	24	949	Line BLYTHE 161.0 to KNOB 161.0 Circuit 1	357	357	0.911	0 270	1.181
J.HINDS	230	MIRAGE	230	1	24	949	Line BLYTHE 161.0 to GLT TAP 161.0 Circuit 1	357	357	0.911	0 270	1.181
J.HINDS	230	MIRAGE	230	1	24	949	Line GLT TAP 161 0 to KNOB 161 0 Circuit 1	357	357	0.910	0 271	1.181
PARKER	161	G14	161	1	14	191	Line BLYTHE 161.0 to HEADGATE 161 0 Circuit 1	167	167	0.353	0 819	1.172
GLT TAP	161	KNOB	161	1	14	191	Line BLYTHE 161.0 to BLYTHESC 161.0 Circuit 1	147	147	0.183	0 973	1.156
J.HINDS	230	MIRAGE	230	1	24	949	Line PARKER 161.0 to G14 161 0 Circuit 1	357	357	0.916	0 237	1.153
J.HINDS	230	MIRAGE	230	1	24	949	Line CAMINO 230.0 to MEAD S 230.0 Circuit E	357	357	0.886	0 261	1.147
J.HINDS	230	MIRAGE	230	1	24	949	Line G33 to LIBERTY with G33 230.0	357	357	0.914	0 227	1.141
J.HINDS	230	MIRAGE	230	1	24	949	Line G33_POI 230.0 to BUCKEYE2 230.0 Circuit 1	357	357	0.914	0 227	1.141
J.HINDS	230	MIRAGE	230	1	24	949	Line BUCKEYE2 230.0 to LIBERTY 230.0 Circuit 1	357	357	0.914	0 227	1.141
J.HINDS	230	MIRAGE	230	1	24	949	Line BLYTHE 161.0 to HEADGATE 161 0 Circuit 1	357	357	0.903	0 237	1.140
J.HINDS	230	MIRAGE	230	1	24	949	Line PARKER 230.0 to HARCUVAR 230.0 Circuit 1	357	357	0.910	0 229	1.139
J.HINDS	230	MIRAGE	230	1	24	949	Line PARKER 161.0 to HEADGATE 161 0 Circuit 1	357	357	0.899	0 238	1.137
J.HINDS	230	MIRAGE	230	1	24	949	Line PARKER to HARCUVAR to HASSYTAP to LIBERTY 230.0	357	357	0.907	0 229	1.136
J.HINDS	230	MIRAGE	230	1	24	949	Tran PARKER 161.00 to PARKER 230.00 Circuit 1	357	357	0.909	0 227	1.135
J.HINDS	230	MIRAGE	230	1	24	949	Tran PARKER 161.00 to PARKER 230.00 Circuit 2	357	357	0.909	0 227	1.135
J.HINDS	230	MIRAGE	230	1	24	949	Line PARKER to EAGLEYE to LIBERTY no G33 230 0	357	357	0.906	0 228	1.133
J.HINDS	230	MIRAGE	230	1	24	949	Line KNOB 161 0 to PILOTKNB 161.0 Circuit 1	357	357	0.892	0 240	1.131
J.HINDS	230	MIRAGE	230	1	24	949	Line HARCUVAR 230.0 to HASSYTAP 230.0 Circuit 1	357	357	0.899	0 229	1.129
PARKER	161	G14	161	1	14	191	Line BLYTHE 161.0 to KNOB 161.0 Circuit 1	167	167	0.381	0.747	1.128
PARKER	161	G14	161	1	14	191	Line BLYTHE 161.0 to GLT TAP 161.0 Circuit 1	167	167	0.381	0.747	1.128
J.HINDS	230	MIRAGE	230	1	24	949	Line PARKER 230.0 to EAGLEYE 230.0 Circuit 1	357	357	0.900	0 228	1.128
PARKER	161	G14	161	1	14	191	Line GLT TAP 161 0 to KNOB 161 0 Circuit 1	167	167	0.379	0.747	1.127
J.HINDS	230	MIRAGE	230	1	24	949	Line PARKER to EAGLEYE to G33 with G33 230.0	357	357	0.899	0 227	1.126
J.HINDS	230	MIRAGE	230	1	24	949	Line G14 161.0 to BLYTHE 161 0 Circuit 1	357	357	0.884	0 241	1.125
PARKER	161	G14	161	1	14	191	Line PARKER 161.0 to HEADGATE 161 0 Circuit 1	167	167	0.306	0 818	1.124
J.HINDS	230	MIRAGE	230	1	24	949	Line PARKER 230.0 to BLK MESA 230.0 Circuit 1	357	357	0.899	0 225	1.124
J.HINDS	230	MIRAGE	230	1	24	949	Line EAGLEYE 230.0 to G33_POI 230.0 Circuit 1	357	357	0.892	0 228	1.119
J.HINDS	230	MIRAGE	230	1	24	949	Line N.HAVASU 230.0 to TOPOCK 230.0 Circuit 1	357	357	0.886	0 225	1.111
J.HINDS	230	MIRAGE	230	1	24	949	Line TOPOCK 230.0 to BLK MESA 230.0 Circuit 1	357	357	0.883	0 226	1.109
J.HINDS	230	MIRAGE	230	1	24	949	Line PARKER 161.0 to BLYTHE no G14 161.0 Circuit 1	357	357	0.866	0 240	1.106
PARKER	161	G14	161	1	14	191	Line NILAND 161.0 to BLYTHE 161.0 Circuit 1	167	167	0.349	0.743	1.092
BLYTHE	161	GLT TAP	161	1	14	191	Line BLYTHE 161.0 to BLYTHESC 161.0 Circuit 1	161	161	0.190	0 871	1.061
PARKER	161	G14	161	1	14	191	Gen PALOVRD2 24.0 Unit ID 1	167	167	0.487	0 570	1.057
PARKER	161	G14	161	1	14	191	Gen PALOVRD3 24.0 Unit ID 1	167	167	0.486	0 570	1.057
PARKER	161	G14	161	1	14	191	Gen PALOVRD1 24.0 Unit ID 1	167	167	0.486	0 570	1.057
GLT TAP	161	KNOB	161	1	14	191	Line NILAND 161.0 to BLYTHE 161.0 Circuit 1	147	147	0.069	0 976	1.045
GLT TAP	161	KNOB	161	1	14	191	Line PARKER 161.0 to G14 161 0 Circuit 1	147	147	0.141	0 902	1.043
PARKER	161	PARKER	230	1	14	191	Line BLYTHE 161.0 to BLYTHESC 161.0 Circuit 1	167	187	0.460	0 575	1.035
PARKER	161	PARKER	230	2	14	191	Line BLYTHE 161.0 to BLYTHESC 161.0 Circuit 1	167	187	0.460	0 575	1.035
PARKER	161	G14	161	1	14	191	Line HASSYAMP 500.0 to HARQUAHA 500 0 Circuit1	167	167	0.439	0 578	1.017
PARKER	161	G14	161	1	14	191	Line HASSYAMP 500.0 to HARQUAHA 500 0 Circuit1	167	167	0.439	0 578	1.017

Table 6 – NERC C (N-1-1) Per-Unit Delta Voltage

Bus Name	kV	Area	Zone	Contingency	pre-project	(post) - (pre)	post-project
INTK69 S	69	24	949	LinePALOVRDE500.0toCOLRIVER500.0Circuit1 + LinePARKER230.0toGENE230.0Circuit1	0.909	-0.019	0.889
INTK69 N	69	24	949	LinePALOVRDE500.0toCOLRIVER500.0Circuit1 + LinePARKER230.0toGENE230.0Circuit1	0.910	-0.019	0.890
GENE69 S	69	24	949	LinePALOVRDE500.0toCOLRIVER500.0Circuit1 + LinePARKER230.0toGENE230.0Circuit1	0.915	-0.019	0.896
GENE69 N	69	24	949	LinePALOVRDE500.0toCOLRIVER500.0Circuit1 + LinePARKER230.0toGENE230.0Circuit1	0.916	-0.019	0.897

Table 7 – NERC C (N-1-1) Per-Unit Flow

Bus From Name	From kV	Bus To Name	To kV	ck	Area	Zone	Contingency	Rate 0	Rate 1	Pre-project	(post) - (pre)	Post-project
J.HINDS	230	MIRAGE	230	1	24	949	Thousands of N-1-1 contingencies (worst shown)	357	357	0 908	0.388	1.296
PARKER	161	G14	161	1	14	191	LineBLYTHE161.0toBLYTHESC161.0Circuit1 + LineBLYTHE161.0toHEADGATE161.0Circuit1	167	167	0 526	1.096	1.622
PARKER	161	G14	161	1	14	191	LineBLYTHE161.0toBLYTHESC161.0Circuit1 + LineBLYTHE161.0toKNOB161.0Circuit1	167	167	0 545	1.036	1.581
PARKER	161	G14	161	1	14	191	LineBLYTHE161.0toBLYTHESC161.0Circuit1 + LinePARKER161.0toHEADGATE161.0Circuit1	167	167	0.472	1.093	1.566
PARKER	161	G14	161	1	14	191	LineBLYTHE161.0toBLYTHESC161.0Circuit1 + LineNILAND161.0toBLYTHE161.0Circuit1	167	167	0 506	1.048	1.554
PARKER	161	G14	161	1	14	191	LineBLYTHE161.0toHEADGATE161.0Circuit1 + LineBLYTHE161.0toKNOB161.0Circuit1	167	167	0 386	1.108	1.494
PARKER	161	G14	161	1	14	191	Thousands of N-1-1 Contingencies with similar results (worst 5 shown above)	167	167			
PARKER	161	PARKER	230	2	14	191	LineBLYTHE161.0toBLYTHESC161.0Circuit1 + TranPARKER161.00toPARKER230.00Circuit1	167	187	0.785	0.987	1.773
PARKER	161	PARKER	230	2	14	191	Thousands of N-1-1 contingencies that include one of the PARKER transformers as seen above	167	187			
PARKER	161	PARKER	230	1	14	191	LineBLYTHE161.0toBLYTHESC161.0Circuit1 + LineNILAND161.0toBLYTHE161.0Circuit1	167	187	0.482	0.783	1.265
PARKER	161	PARKER	230	1	14	191	LineBLYTHE161.0toBLYTHESC161.0Circuit1 + LineBLYTHE161.0toKNOB161.0Circuit1	167	187	0.499	0.722	1.221
PARKER	161	PARKER	230	2	14	191	LineBLYTHE161.0toBLYTHESC161.0Circuit1 + GenPALOVRD124.0UnitID1	167	187	0.605	0.562	1.168
PARKER	161	PARKER	230	1	14	191	LineBLYTHE161.0toBLYTHESC161.0Circuit1 + LineKOFA161.0toG12161 0Circuit1	167	187	0 542	0.608	1.150
PARKER	161	PARKER	230	1	14	191	LineBLYTHE161.0toBLYTHESC161.0Circuit1 + LineGILA161.0toWML/KOF161.0	167	187	0 521	0.606	1.127
PARKER	161	PARKER	230	1	14	191	LineBLYTHE161.0toBLYTHESC161.0Circuit1 + LineHASSYAMP500.0toHARQUAHA500.0Circuit1	167	187	0 549	0.571	1.120
PARKER	161	PARKER	230	1	14	191	LineBLYTHE161.0toKNOB161 0Circuit1 + LineNILAND161.0toBLYTHE161.0Circuit1	167	187	0 369	0.737	1.106
PARKER	161	PARKER	230	1	14	191	LineKOFA161 0toG12161.0Circuit1 + GenPALOVRD224.0UnitID1	167	187	0.617	0.466	1.083
PARKER	161	PARKER	230	2	14	191	LineKOFA161 0toG12161.0Circuit1 + LineBLYTHE161.0toKNOB161.0Circuit1	167	187	0.473	0.608	1.081
PARKER	161	PARKER	230	1	14	191	LineKOFA161 0toG12161.0Circuit1 + LineHASSYAMP500.0toHARQUAHA500.0Circuit1	167	187	0 552	0.476	1.028
PARKER	161	HEADGATE	161	1	14	191	LineBLYTHE161.0toBLYTHESC161.0Circuit1 + LinePARKER161.0toG14161.0Circuit1	167	167	0 226	1.039	1.265
PARKER	161	HEADGATE	161	1	14	191	LineBLYTHE161.0toKNOB161 0Circuit1 + LinePARKER161.0toG14161.0Circuit1	167	167	0 097	1.051	1.148
PARKER	161	HEADGATE	161	1	14	191	LinePARKER161.0toG14161 0Circuit1 + LineNILAND161.0toBLYTHE161.0Circuit1	167	167	0 048	1.034	1.082
BLYTHE	161	GLT TAP	161	1	14	191	LineBLYTHE161.0toBLYTHESC161.0Circuit1 + LineNILAND161.0toBLYTHE161.0Circuit1	173	190	0 224	1.022	1.245
BLYTHE	161	GLT TAP	161	1	14	191	LinePARKER161.0toG14161 0Circuit1 +	173	190	0 297	0.887	1.184

							LineBLYTHE161.0toBLYTHESC161.0Circuit1					
BLYTHE	161	GLT TAP	161	1	14	191	LinePARKER161.0toG14161 0Circuit1 + LineBLYTHE161.0toHEADGATE161.0Circuit1	173	190	0.193	0.914	1.107
BLYTHE	161	GLT TAP	161	1	14	191	LineParker161.0toG14161 0Circuit1 + LineNILAND161.0toBLYTHE161.0Circuit1	173	190	0.163	0.911	1.074
BLYTHE	161	GLT TAP	161	1	14	191	LineBLYTHE161.0toBLYTHESC161.0Circuit1 + LineBLYTHE161.0toHEADGATE161.0Circuit1	173	190	0 210	0.863	1.074
BLYTHE	161	GLT TAP	161	1	14	191	LineParker161.0toG14161 0Circuit1 + LineParker161.0toHEADGATE161.0Circuit1	173	190	0.162	0.910	1.072
BLYTHE	161	GLT TAP	161	1	14	191	LineHDWSH500.0toN.GILA500 0Circuit1 + LineHASSYAMP500.0toN.GILA500.0Circuit1	173	190	0 533	0.538	1.071
BLYTHE	161	GLT TAP	161	1	14	191	LineParker161.0toHEADGATE161 0Circuit1 + LineBLYTHE161.0toBLYTHESC161.0Circuit1	173	190	0.189	0.861	1.050
BLYTHE	161	GLT TAP	161	1	14	191	LineHASSYAMP500.0toN.GILA500.0Circuit1 + LineHASSYAMP500.0toHDWSH500.0Circuit1	173	190	0.470	0.538	1.007
BLYTHE	161	GLT TAP	161	1	14	191	LineKOFA161 0toG12161.0Circuit1 + LineBLYTHE161.0toBLYTHESC161.0Circuit1	173	190	0 265	0.736	1.001
BLYTHE	161	HEADGATE	161	1	14	191	LineParker161.0toG14161 0Circuit1 + LineBLYTHE161.0toBLYTHESC161.0Circuit1	173	190	0 288	0.922	1.210
BLYTHE	161	HEADGATE	161	1	14	191	LineParker161.0toG14161 0Circuit1 + LineBLYTHE161.0toKNOB161.0Circuit1	173	190	0.174	0.933	1.107
BLYTHE	161	HEADGATE	161	1	14	191	LineNILAND161.0toBLYTHE161.0Circuit1 + LineParker161.0toG14161.0Circuit1	173	190	0.130	0.920	1.050
BLYTHE	161	HEADGATE	161	1	14	191	LineParker161.0toG14161 0Circuit1 + LineBLYTHE161.0toBLYTHESC161.0Circuit1	173	190	0 288	0.922	1.210
GLT TAP	161	KNOB	161	1	14	191	LineBLYTHE161.0toBLYTHESC161.0Circuit1 + LineNILAND161.0toBLYTHE161.0Circuit1	173	190	0 216	1.026	1.242
GLT TAP	161	KNOB	161	1	14	191	LineParker161.0toG14161 0Circuit1 + LineBLYTHE161.0toBLYTHESC161.0Circuit1	173	190	0 290	0.890	1.180
GLT TAP	161	KNOB	161	1	14	191	LineParker161.0toG14161 0Circuit1 + LineBLYTHE161.0toHEADGATE161.0Circuit1	173	190	0.184	0.919	1.103
GLT TAP	161	KNOB	161	1	14	191	LineBLYTHE161.0toBLYTHESC161.0Circuit1 + LineBLYTHE161.0toHEADGATE161.0Circuit1	173	190	0 205	0.865	1.070
GLT TAP	161	KNOB	161	1	14	191	LineBLYTHE161.0toHEADGATE161.0Circuit1 + LineBLYTHE161.0toBLYTHESC161.0Circuit1	173	190	0 205	0.865	1.070
GLT TAP	161	KNOB	161	1	14	191	LineNILAND161.0toBLYTHE161.0Circuit1 + LineParker161.0toG14161.0Circuit1	173	190	0.150	0.919	1.069
GLT TAP	161	KNOB	161	1	14	191	LineParker161.0toG14161 0Circuit1 + LineNILAND161.0toBLYTHE161.0Circuit1	173	190	0.150	0.919	1.069
GLT TAP	161	KNOB	161	1	14	191	LineHASSYAMP500.0toN.GILA500.0Circuit1 + LineHDWSH500.0toN.GILA500.0Circuit1	173	190	0 528	0.541	1.069
GLT TAP	161	KNOB	161	1	14	191	LineHDWSH500.0toN.GILA500 0Circuit1 + LineHASSYAMP500.0toN.GILA500.0Circuit1	173	190	0 528	0.541	1.069
GLT TAP	161	KNOB	161	1	14	191	LineParker161.0toG14161 0Circuit1 + LineParker161.0toHEADGATE161.0Circuit1	173	190	0.152	0.916	1.068
GLT TAP	161	KNOB	161	1	14	191	LineParker161.0toHEADGATE161 0Circuit1 + LineParker161.0toG14161.0Circuit1	173	190	0.152	0.916	1.068
GLT TAP	161	KNOB	161	1	14	191	LineBLYTHE161.0toBLYTHESC161.0Circuit1 + LineParker161.0toHEADGATE161.0Circuit1	173	190	0.182	0.864	1.046
GLT TAP	161	KNOB	161	1	14	191	LineParker161.0toHEADGATE161 0Circuit1 + LineBLYTHE161.0toBLYTHESC161.0Circuit1	173	190	0.182	0.864	1.046
GLT TAP	161	KNOB	161	1	14	191	LineHASSYAMP500.0toHDWSH500.0Circuit1 + LineHASSYAMP500.0toN.GILA500.0Circuit1	173	190	0.465	0.540	1.005
GLT TAP	161	KNOB	161	1	14	191	LineHASSYAMP500.0toN.GILA500.0Circuit1 + LineHASSYAMP500.0toHDWSH500.0Circuit1	173	190	0.465	0.540	1.005
GLT TAP	161	KNOB	161	1	14	191	LineHASSYAMP500.0toN.GILA500.0Circuit1 + LineHASSYAMP500.0toHDWSH500.0Circuit1	173	190	0.465	0.540	1.005

Table 8 – NERC C Per-Unit Delta Voltage

Bus Name	kV	Area	Zone	Contingency	pre-project	(post) - (pre)	post-project
INTK69 S	69	24	949	Breaker Failure PAD1082 230kV	0.922	-0.032	0.890
INTK69 N	69	24	949	Breaker Failure PAD1082 230kV	0.923	-0.032	0.891
GENE69 N	69	24	949	Breaker Failure PAD1082 230kV	0.930	-0.031	0.898
GENE69 S	69	24	949	Breaker Failure PAD1082 230kV	0.929	-0.031	0.897

Table 9 – NERC C Per-Unit Flow

Bus From Name	From kV	Bus To Name	To kV	ck	Area	Zone	Contingency	Rate 0	Rate 1	Pre-project	(post) - (pre)	Post-project
PARKER	161	PARKER	230	1	14	191	Bus Fault PARKER Sub 230kV North Bus (M&T)	167	187	0 529	0.691	1.221
J.HINDS	230	MIRAGE	230	1	24	949	Bus Fault PARKER Sub 161kV Main Bus (M&T)	357	357	0 912	0.282	1.194
PARKER	161	G14	161	1	14	191	Breaker HEADGATE 272 161.0	167	167	0 353	0.819	1.172
BLYTHE	161	GLT TAP	161	1	14	191	Bus Fault PARKER Sub 161kV Main Bus (M&T)	173	190	0.121	0.894	1.015
GLT TAP	161	KNOB	161	1	14	191	Bus Fault PARKER Sub 161kV Main Bus (M&T)	173	190	0.110	0.901	1.011

A preliminary analysis of the potential generator reduction that may be required under some of the N-1-1 events listed above is shown in **Table 10**. This is not an exhaustive list. Only a few of the more significant N-1-1 type events are shown to give the Customer an idea of potential impacts to the Project under a few possible scenarios. An assumption in **Table 10** is that the upgrades needed for the NERC B overloads on the Parker – G14 161 kV line, jumpers at Gold Mine Tap, jumpers at Knob, and the Parker 230/161 kV transformers will be completed and sized greater than the largest N-1-1 overload (see section 5.1.1). A more detailed analysis will need to be performed in an operating study as the Project moves closer to the in-service date.

Table 10 – Potential Project Generation Reductions for Initially Out-of-Service Conditions

Scenario Number	Overloaded Element	Initially Out-of-Service Element	Maximum MW Output Allowed from Project Under this Scenario	Possible Next N-1 Event (only worst shown)	Associated System Diagram
1	Parker – Headgate Rock 161 kV transmission line	Parker – G14 161 kV transmission line	405 MW	Blythe SC – Blythe 161 kV bus tie line	Figure 4
2	Headgate Rock – Blythe 161 kV transmission line	Parker – G14 161 kV transmission line	405 MW	Blythe SC – Blythe 161 kV bus tie line	Figure 4
3	Blythe – Gold Mine Tap 161 kV transmission line	Blythe SC – Blythe 161 kV bus tie line	415 MW	Blythe – Niland 161 kV transmission line	Figure 5
4	Gold Mine Tap – Knob 161 kV transmission line	Blythe SC – Blythe 161 kV bus tie line	415 MW	Blythe – Niland 161 kV transmission line	Figure 5

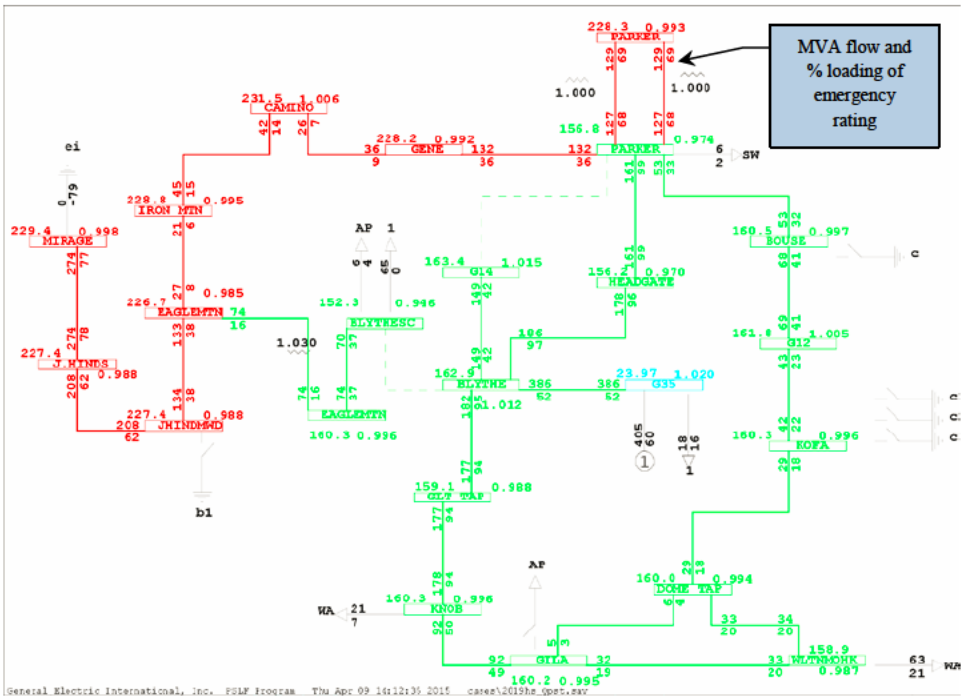


Figure 4 – Potential Project Generation Reduction for Scenarios 1 and 2

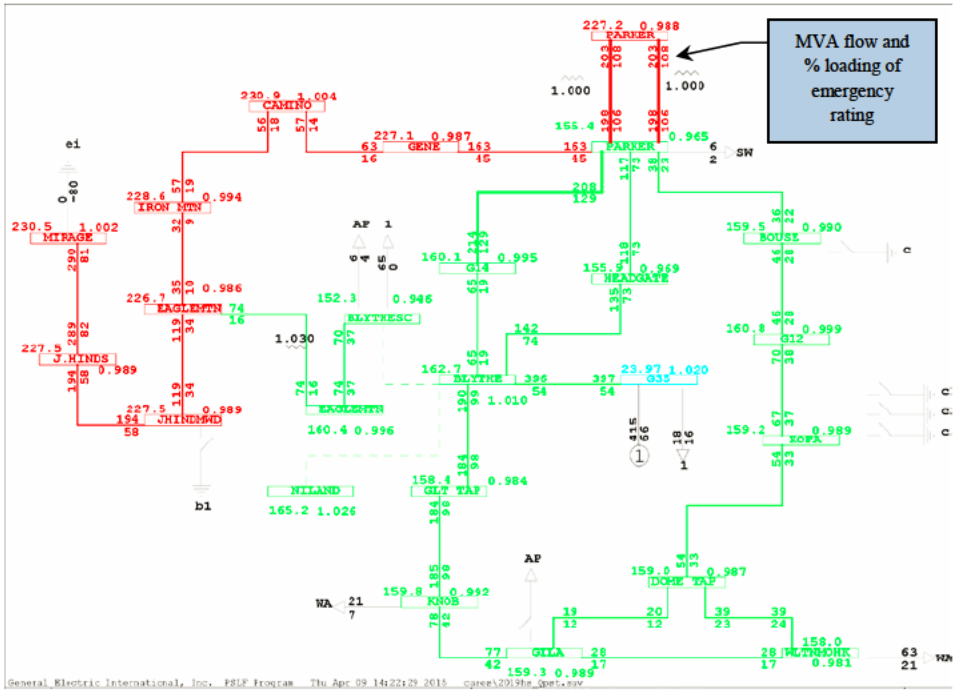


Figure 5 – Potential Project Generation Reduction for Scenarios 3 and 4

For the complete results, including all the contingency events simulated, see **Appendix A**. A list of contingencies simulated for each scenario is included in **Appendix B**. For the sensitivity of all Western Queue projects, ahead of this project, not moving forward and dropping out of the queue, there were no NERC B events that resulted in overloads on the Western system, but there were potential overloads on the SCE Julian Hinds to Mirage 230 kV transmission line. As part of Western's business practice, this System Impact Study will be made available to all other impacted entities. These study results will require coordination with SCE and MWD. SCE and MWD may require an Affected System Study to be performed that would be financed by the Project participants. Further coordination between the Project participants, MWD, and SCE will be necessary. Also, it is possible that SCE and MWD will need to determine whether existing Remedial Actions Schemes/Operating Actions that are currently in place are still valid with the addition of the Project or if either utility requires additional mitigations.

5.1.1 Mitigation for Steady State Violations (Network Resource)

If the Customer elects for a Network Resource Interconnection Service with Western, the following upgrades will be required. For the NERC B event of the loss of a Parker 230/161 kV transformer overloading the other Parker 230/161 kV transformer, possible mitigation would be to replace the two transformers with higher rated transformers or to add a third transformer to the Parker Substation and any associated bay work. The overloads on the Parker – G14 161 kV transmission line will require replacing some substation equipment at the Parker 161 kV substation. Additional jumper replacements at both the Knob and Gold Mine Tap substations will also be needed. To mitigate the many N-1-1 event combinations, a Remedial Action Scheme (RAS) and/or system upgrades may be required.

5.1.2 Mitigation for Steady State Violations (Energy Resource)

The Customer's interconnection application selected the study work to also be performed as an energy resource interconnection. Under this type of interconnection service, the Project would not seek to re-rate any transmission paths or systems. It would market its planned generation by using available transmission rights, by observing transmission operating restrictions, and by curtailing (through automatic generation trips and/or manual runbacks) its Project generation to the extent needed to meet interconnected system reliability requirements under system emergency conditions. Based on the results of the study conditions used in this study, the Project would be allowed to output no more than 280 MW to maintain system reliability (See **Figure 6**).

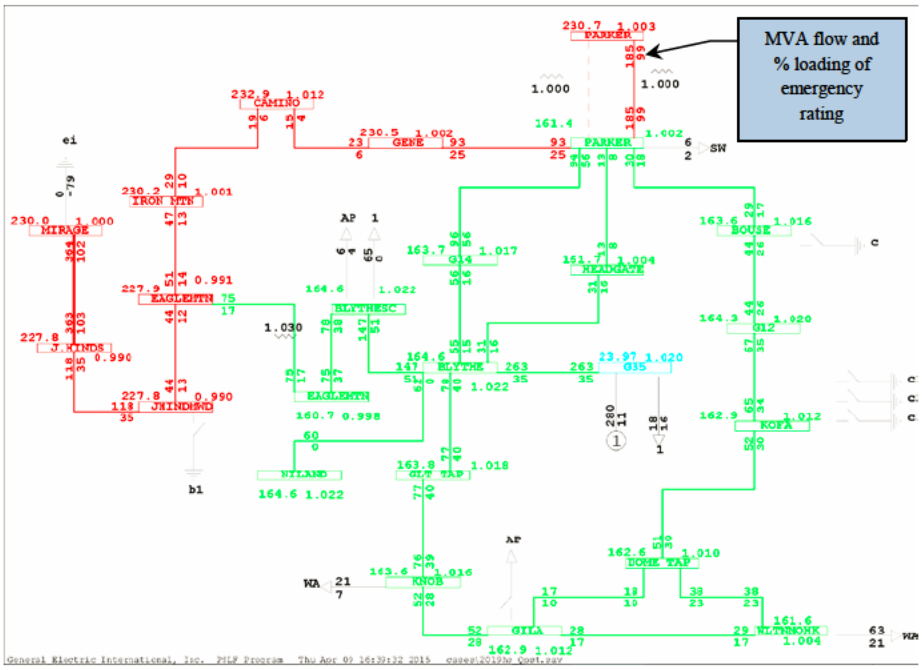


Figure 6 – Potential Project Limits for Energy Resource

This assumes that any mitigation that may be required by SCE and MWD can be completed without system upgrades. The Project maximum output could be lower than 50 MW if the potential Julian Hinds – Mirage 230 kV transmission line overloads cannot be mitigated without system upgrades.

5.2 Transient Stability Analysis Results

In the Western system, after comparing pre-Project and post-Project NERC B and NERC C contingencies with normal and delayed fault clearing, it was noted that no additional WECC System Performance Criteria violations were created by the proposed Project.

Transient Stability plots are included in **Appendix E**. The Worst Condition Analysis (WCA) Reports did not show any stability violations of the WECC System Performance Criteria as a result of the Project addition.

5.3 Short-Circuit Duty Results

A summary of the 3-phase fault study results at the buses most affected by the Project are shown in **Table 11**. The table includes the pre-Project and the post-Project three-phase fault currents (Amps) and the change in three-phase fault currents (Δ Amps) that occur due to the addition of the Project. The fault contribution from the Project does not result in any breaker interrupting capability exceedances for the voltage classes modeled in the case. Further analysis may be required in an operating study case to determine if any breaker interrupting capability exceedances occur for lower sub-transmission and distribution level equipment.

Table 11 – Three Phase Short Circuit Results for the Proposed Project

Bus Name	kV	Pre-Project Amps	Post-Project Amps	Δ (Post - Pre) Amps
BLYTHE	161	7,405	13,861	6,455
G14	161	6,414	7,239	825
PARKER	161	10,395	10,830	435
HEADGATE	161	6,106	6,459	353
GLT TAP	161	4,766	5,067	302
KNOB	161	7,642	7,764	122
HEADGATE	69	6,720	6,820	100
PARKER	230	11,839	11,935	96

6 STANDARD INTERCONNECTION REQUIREMENTS

As part of the construction of the 2014-G35 Project, the following items will also be required:

1. The Project will need to meet Western's Open Access Transmission Tariff (OATT) power factor requirement of 0.95 leading to 0.95 lagging, as measured at the Project's 230 kV Point of Interconnection, with the Project's maximum full-output reactive power capability available at all MW output levels. It is this 2014-G35 Project's reactive power capability which may be dispatched by the Western Operations Dispatch personnel as appropriate due to system conditions and without any monetary compensation to the Customer. If the Project cannot operate to this level of power factor requirement, additional VAR support may be required.
2. The Project will need to include an automatic voltage control system in support of NERC and WECC dynamic reliability requirements (e.g., VAR-001-Voltage and Reactive Control) within the conditions outlined in item 1 above.

7 COST ESTIMATE

The total estimated facility costs for the new 2014-G35 Project are summarized in **Tables 12-13**. Cost estimates do not include the costs associated with planning, land and rights, communications, environmental, surveys, geologic investigations, designs and specifications, construction supervision, coordinating construction outages, or adjusting transmission service commitments during construction outages. These additional costs, as well as refinement of estimates provided in this report, can be determined in the Facility Study. The cost estimates in this report are relatively high-level, appropriate to a System Impact Study, and would be refined in the Facility Study.

Table 12 – Project Conceptual Cost Estimate for Network Resource Service (NERC B Events Mitigation)

System Element	Estimate	Comments
Blythe Yard Expansion for Interconnection	$ [redacted]	Blythe Yard Expansion for Interconnection Expansion of 161 main yard to the east for additional bay ** Land Status is unknown/feasibility has not been determined
Parker Transformer & Switch Mitigation	$ [redacted]	Parker Transformer & Switch Mitigation Replacement of 2-230/161 transformers Replacement of 2-line conductor upper 161-transformer Replacement of 3 switches in Blythe 161 bay
Goldmine Tap Jumpers	$ [redacted]	Replacement of unknown quantity of jumpers & stain bus
Knob Yard Jumpers & CT Taps	$ [redacted]	Replacement of unknown quantity of jumpers & stain bus Re-tap existing CT's
Base Cost	$ [redacted]	
Contingency	$ [redacted]	
Total Cost	**$** [redacted]	
Additional Assumptions		1. Estimate does not include any Lands or Environmental Activities.
		2. No Construction contract can be awarded until all environmental activities have been completed.
		3. Estimate does not include any communication Activities. Western will need to complete a communications study review of the area to determine the type of communication need to support the control requirements.

The conceptual schedule estimate requires about two to three years to complete. The schedule may need to be adjusted based on Equipment deliveries and/or possible environmental issues.

Table 13 – Project Conceptual Cost Estimate for Energy Resource Service

System Element	Estimate	Comments
Blythe Yard Expansion for Interconnection	$ [redacted]	Blythe Yard Expansion for Interconnection Expansion of 161 main yard to the east for additional bay ** Land Status is unknown/feasibility has not been determined
Base Cost	$ [redacted]	
Contingency	$ [redacted]	
Total Cost	**$** [redacted]	
Additional Assumptions		Same as Table 12

If it is decided that some or all of the N-1-1 mitigation should include upgrades, those costs are listed in **Table 14**.

Table 14 – Project Conceptual Cost Estimate for N-1-1 Mitigation

System Element	Estimate	Comments
Parker Additional Switches	$ [redacted]	Replacement of 3 switches in Headgate 161 bay ** Assumes concurrent with above Parker project
Blythe Additional Switches	$ [redacted]	Replacement of 3 switches in Goldmine Tap 161 bay ** Assumes concurrent with above Blythe project
PAD-HDR-BLY Rebuild	$ [redacted]	New mono-pole line 954-1272 conductor with OPGW ** Assumes reroute and accommodate BSE-PAD double ckt to HDR
BLY-GLT-KNB Rebuild	$ [redacted]	New mono-pole line 954-1272 conductor with OPGW
Knob Yard Jumper Replacement & CT Taps	$ [redacted]	Replacement of unknown quantity of jumpers & stain bus Re-tap existing CT's
Contingency	$ [redacted]	
Total Cost	**$** [redacted]	

8 CONCLUSIONS

The addition of the Project into Western's system results in a number of thermal overloads on Western's system for both NERC B and NERC C events. There are also potential violations on neighboring systems including potential voltage issues on the Metropolitan Water District (MWD) system and potential thermal overloads on the Southern California Edison (SCE) Julian Hinds to Mirage 230 kV transmission line. SCE and MWD may require an Affected System Study to be performed that would be financed by the Project participants. Further coordination between the Project participants, MWD, and SCE will be necessary.

If the Customer elects for a Network Resource Interconnection Service with Western, there are a few system upgrades that will be required. For the NERC B event of the loss of a Parker 230/161 kV transformer overloading the other Parker 230/161 kV transformer, possible mitigation would be to replace the two transformers with higher rated transformers or to add a third transformer to the Parker Substation and any associated bay work. The overloads on the Parker – G14 161 kV transmission line will require replacing some substation equipment at the Parker 161 kV substation. Additional jumper replacements at both the Knob and Gold Mine Tap substations will also be needed. In addition, there are a significant number of N-1-1 type events that would impact the Project's maximum allowable generator output. The Customer may want to decide to upgrade some or all of these overloaded system elements to avoid potential curtailments for these possible system reliability limits. A Remedial Action Scheme (RAS) may be required if the upgrades, for the N-1-1 events, are not performed. A more detailed analysis of possible curtailment scenarios will need to be performed in an operating study as the Project moves closer to the in-service date.

If the Customer elects for an Energy Resource Interconnection Service with Western, the maximum allowable output from the Project's generation would be no more than 280 MW to maintain system reliability. This assumes that any mitigation that may be required by SCE and MWD can be completed without system upgrades. The Project maximum output could be lower than 50 MW if the potential Julian Hinds – Mirage 230 kV transmission line overloads cannot be mitigated without system upgrades.

For a Network Resource Interconnection Service, the preliminary cost estimate to interconnect the project to the Western system is [redacted] and the estimated schedule indicates that the Project will take 2 to 3 years to complete. For an Energy Resource Interconnection Service, the preliminary cost estimate to interconnect the project to the Western system is [redacted] and the estimated schedule indicates that the Project will take 2 to 3 years to complete.

Appendix 2B
Engineering Design Criteria

APPENDIX 2B

Engineering Design Criteria

This appendix summarizes the codes, standards, criteria, and practices that generally will be used in the design and construction of the engineering systems for the AltaGas Sonoran Energy Project (SEP).

2B.1 Civil Engineering Design Criteria

2B.1.2 Introduction

This section summarizes the codes, standards, criteria, and practices that generally will be used in the design and construction of civil engineering systems for the SEP. More specific project information will be developed during execution of the project to support detailed design, engineering, material procurement specification and construction specifications.

2B.1.3 Codes and Standards

The design of civil engineering systems for the project will be in accordance with the laws and regulations of the federal government, the State of California, Riverside County ordinances, and industry standards. The current issue or edition of the documents at the time of the filing of this Application for Certification (AFC) for the SEP with the California Energy Commission (CEC) will apply, unless otherwise noted. In cases where conflicts between the cited documents exist, requirements of the more conservative document will be used.

2B.1.3.1 Civil Engineering Codes and Standards

The following codes and standards have been identified as applicable, in whole or in part, to civil engineering design and construction of power plants.

- American Association of State Highway and Transportation Officials (AASHTO)—Standards and Specifications
- American Concrete Institute (ACI) – Standards and Recommended Practices
- American Institute of Steel Construction (AISC) – Standards and Specifications
- American National Standards Institute (ANSI) – Standards
- American Society of Testing and Materials (ASTM) – Standards, Specifications, and Recommended Practices
- American Water Works Association (AWWA) – Standards and Specifications
- American Welding Society (AWS) – Codes and Standards
- Asphalt Institute (AI) – Asphalt Handbook
- State of California Department of Transportation (CALTRANS) Standard Specification
- California Energy Commission (CEC) – Recommended Seismic Design Criteria for Non-Nuclear Generating Facilities in California, 1989
- Concrete Reinforcing Steel Institute (CRSI) – Standards
- Factory Mutual (FM) – Standards
- National Fire Protection Association (NFPA) – Standards
- California Building Code (CBC) 2010 (Effective July 1, 2012)
- Steel Structures Painting Council (SSPC) – Standards and Specifications
- American Society of Civil Engineers (ASCE) – Standards and Recommended Practices
- International Building Code (IBC) 2009 Effective July 1, 2012

- United States Geological Survey (USGS)

2B.1.3.2 Engineering Geology Codes, Standards, and Certifications

Engineering geology activities will conform to the applicable federal, state and local laws, regulations, ordinances, and industry codes and standards.

2B.1.3.2 Federal

None are applicable.

2B.1.3.2 State

The Warren-Alquist Act, Public Resources Code, Section 25000 et seq. and the CEC Code of Regulations (CCR), Siting Regulations, Title 20 CCR, Chapter 2, require that an AFC address the geologic and seismic aspects of the site.

The California Environmental Quality Act (CEQA), PRC 21000 et seq. and the CEQA Guidelines require that potential significant effects, including geologic hazards, be identified and a determination made as to whether they can be substantially reduced. An AFC prepared for the CEC under the Warren-Alquist Act is the functional equivalent and an Environmental Impact Report (EIR) prepared under CEQA, and an EIR is not required.

2B.1.3.2 Local

California State Planning Law, Government Code Section 65302, requires each city and county to adopt a general plan, consisting of nine mandatory elements, to guide its physical development. Section 65302(g) requires that a seismic safety element be included in the general plan.

The site development activities will require certification by a Professional Geotechnical Engineer and a Professional Engineering Geologist during and following construction, in accordance with the California Building Code (CBC), Chapter 70. The Professional Geotechnical Engineer and the Professional Engineering Geologist will certify the placement of earthen fills and the adequacy of the site for structural improvements, as follows:

- Both the Professional Geotechnical Engineer and the Professional Engineering Geologist will address CBC Chapter 70, Sections 7006 (Grading Plans), 7011 (Cuts), 7012 (Terraces), 7013 (Erosion Control), and 7015 (Final Report).
- The Professional Geotechnical Engineer will also address CBC Chapter 70, Sections 7011 (Cuts) and 7012 (Terraces).

Additionally, the Professional Engineering Geologist will present findings and conclusions pursuant to PRC, Section 25523 (a) and (c); and 20 CCR, Section 1752 (b) and (c).

2B.2 Structural Engineering Design Criteria

2B.2.2 Introduction

This section summarizes the codes, standards, criteria, and practices that will be generally used in the design and construction of structural engineering systems for the SEP. More specific project information will be developed during execution of the project to support detail design, engineering, material procurement specification and construction specifications.

2B.2.3 Codes and Standards

The design of structural engineering systems for the project will be in accordance with the laws and regulations of the federal government, the State of California, County of Riverside ordinances, and the industry standards. The current issue or edition of the documents at the time of filing of this AFC with the CEC will apply, unless otherwise noted. In cases where conflicts between the cited documents exist, requirements of the more conservative document will be used.

The following codes and standards have been identified as applicable, in whole or in part, to structural engineering design and construction of power plants.

- California Building Code, 2013 (IBC 2012) Edition
- American Institute of Steel Construction (AISC):
  - Manual of Steel Construction—14th Edition 325-11
    - Specification for Structural Steel Buildings, June 22, 2010
    - Specification for Structural Joints Using ASTM A325 or A490 Bolts, December 31, 2009
    - Code of Standard Practice for Steel Buildings and Bridges, April 14, 2010
  - Seismic Design Manual 2nd Edition 327-12
- American Concrete Institute (ACI):
  - ACI 318-14, Building Code Requirements for Structural Concrete
  - ACI 301-10, Specifications for Structural Concrete for Buildings
  - ACI 530-13, Building Code Requirements for Masonry Structures
- American Society of Civil Engineers (ASCE):
  - ASCE 7-10, Minimum Design Loads for Buildings and Other Structures
- American Society of Mechanical Engineers (ASME)
  - STS-1-2011, Steel Stacks
- American Welding Society (AWS)
  - D1.1—Structural Welding Code—Steel
  - D1.3—Structural Welding Code—Sheet Steel
- Code of Federal Regulations, Title 29—Labor, Chapter XVII, Occupational Safety and Health Administration (OSHA)
  - Part 1910—Occupational Safety and Health Standards
  - Part 1926—Construction Safety and Health Regulations
- National Association of Architectural Metal Manufacturers (NAAMM)—Metal Bar Grating Manual
- Hoist Manufacturers Institute (HMI), Standard Specifications for Electric Wire Rope Hoists (HMI 100)
- IEEE 980 – Guide for Containment and Control of Oil Spills in Substations
- National Electric Safety Code (NESC), C2-2007
- National Fire Protection Association (NFPA Standards)
  - NFPA 850 Fire Protection for Electric Generating Plants
- OSHA Williams-Steiger Occupational Safety and Health Act of 1970
- Steel Deck Institute (SDI)—Design Manual for Floor Decks and Roof Decks

2B.2.3.1CEC Special Requirements

Prior to the start of any increment of construction, the proposed seismic-force procedures for project structures and the applicable designs, plans and drawings for project structures will be submitted for approval.

Proposed seismic-force procedures, designs, plans, and drawings shall be those for:

- Major project structures
- Major foundations, equipment supports, and anchorage

- Large, field-fabricated tanks
- Switchyard structures

2B.2.4 Structural Design Criteria

2B.2.4.1 Datum

Site topographic elevations will be based on an elevation survey conducted using known elevation benchmarks.

2B.2.4.2 Frost Penetration

The site is located in an area free of frost penetration. Bottom elevation of all foundations for structures and equipment, however, will be maintained at a minimum of 12 inches below the finished grade.

2B.2.4.3 Temperatures

The design basis temperatures for civil and structural engineering systems will be as follows:

Maximum	122.7°F
Minimum	21.9°F

2B.2.4.4 Design Loads

2B.2.4.4 General

Design loads for structures and foundations will comply with all applicable building code requirements.

2B.2.4.4 Dead Loads

Dead loads will consist of the weights of structure and all equipment of a permanent or semi-permanent nature including tanks, bins, wall panels, partitions, roofing, drains, piping, cable trays, bus ducts, and the contents of tanks and bins measured at full operating capacity. The contents of the tanks and bins, however, will not be considered as effective in resisting structure uplift due to wind forces; but will be considered as effective for seismic forces.

2B.2.4.4 Live Loads

Live load will consist of uniform floor live loads and equipment live loads. Uniform live loads are assumed equivalent unit loads that are considered sufficient to provide for movable and transitory loads, such as the weights of people, portable equipment and tools, small equipment or parts, which may be moved over or placed on the floors during maintenance operations, and planking. The uniform live loads will not be applied to floor areas that will be permanently occupied by equipment.

Lateral earth pressures, hydrostatic pressures, and wheel loads from trucks will be considered as live loads.

Uniform live loads will be in accordance with ASCE Standard 7, but will not be less than the following:

- Roofs — 20 pounds per square foot (psf)
- Floors and Platforms (steel grating and checkered plates) — 100 psf

In addition, a uniform load of 50 psf will be used to account for piping and cable trays, except that where the piping and cable loads exceed 50 psf, the actual loads will be used.

Furthermore, a concentrated load of 5 kips will be applied concurrently to the supporting beams of the floors to maximize stresses in the members, but the reactions from the concentrated loads will not be carried to the columns.

- Floors (elevated concrete floors) — 100 psf

In addition, elevated concrete slabs will be designed to support an alternate concentrated load of 2 kips in lieu of the uniform loads, whichever governs. The concentrated load will be treated as a uniform distributed load acting

over an area of 2.5 square feet, and will be located in a manner to produce the maximum stress conditions in the slabs.

- Operating Floors — As applicable
- Control Room Floor — 150 psf
- Electrical Rooms — 250 psf
- Stairs, Landings, and Walkways — 100 psf

In addition, a concentrated load of 2 kips will be applied concurrently to the supporting beams for the walkways to maximize the stresses in the members, but the reactions from the concentrated loads will not be carried to the columns.

- Pipe Racks — 50 psf

Where the piping and cable tray loads exceed the design uniform load, the actual loads will be used. In addition, a concentrated load of 8 kips will be applied concurrently to the supporting beams for the walkways to maximize the stresses in the members, but the reactions from the concentrated loads will not be carried to the columns.

- Hand Railings

Hand railings will be designed for a 200-pound concentrated load applied at any point and in any direction.

- Slabs on Grade — 250 psf
- Truck Loading Surcharge Adjacent to Structures — 250 psf
- Truck Support Structures — AASHTO-HS-20-44
- Special Loading Conditions — Actual loadings

Lay down loads from equipment components during maintenance and floor areas where trucks, forklifts or other transports have access will be considered in the design of live loads.

Live loads may be reduced in accordance with the provisions of CBC Section 1607.

Posting of the floor load capacity signs for all roofs, elevated floors, platforms and walkways will be in compliance with the OSHA Occupational Safety and Health Standard, Walking and Working Surfaces, Subpart D. Floor load capacity for slabs on grade will not be posted.

2B.2.4.4 Earth Pressures

Earth pressures will be in accordance with the recommendations contained in the project specific geotechnical report.

2B.2.4.4 Groundwater Pressures

Hydrostatic pressures due to groundwater or temporary water loads will be considered.

2B.2.4.4 Wind Loads

The wind forces will be calculated in accordance with CBC 2013 with a ultimate design wind speed of 115 miles per hour (mph) and an exposure category of ‘C.’

2B.2.4.4 Seismic Loads

Structures will be designed and constructed to resist the effects of earthquake loads as determined in CBC 2010, Section 1613. The Seismic Design Category is D. The occupancy category of the structure is III (per CBC Table 1604.5) and corresponding importance factor (I) is 1.25. Other seismic parameters will be obtained from the geotechnical report.

2B.2.4.4 Snow Loads

Snow loads will not be considered.

2B.2.4.4 Turbine Generator Loads

The combustion turbine generator loads for pedestal and foundation design will be furnished by the equipment manufacturers, and will be applied in accordance with the equipment manufacturers' specifications, criteria, and recommendations.

2B.2.4.4 Special Considerations for Steel Stacks

Steel stacks will be designed to withstand the normal and abnormal operating conditions in combination with wind loads and seismic loads, and will include the along-wind and across-wind effects on the stacks. The design will meet the requirements of ASME/ANSI STS-1-2011, "Steel Stacks," using allowable stress design method, except that increased allowable stress for wind loads as permitted by AISC will not be used.

2B.2.4.4 Special Considerations for Structures and Loads during Construction

Structural backfill may be placed against walls, retaining walls, and similar structures when the concrete strength attains 80 percent of the design compressive strength (f'_c), as determined by sample cylinder tests. Restrictions on structural backfill, if any, will be shown on the engineering design drawings.

Design restrictions imposed on construction shoring removal that are different from normal practices recommended by the ACI codes will be shown on engineering design drawings.

Metal decking used as forms for elevated concrete slabs will be evaluated to adequately support the weight of concrete plus a uniform construction load of 50 psf, without increase in allowable stresses.

2B.2.5 Design Basis

2B.2.5.1 General

Reinforced concrete structures will be designed by the strength design method, in accordance with the CBC and the ACI 318, "Building Code Requirements for Structural Concrete."

Steel structures will be designed by the working stress method, in accordance with the CBC and the AISC Specification for Structural Steel Buildings.

Foundation design will be in accordance with the "Final Subsurface Investigation and Foundation Report" for the facility.

2B.2.5.2 Factors of Safety

The factor of safety for all structures, tanks, and equipment supports will be as follows:

Against Overturning	1.50
Against Sliding	1.50
Against Uplift Due to Wind	1.50
Against Buoyancy	1.25

2B.2.5.3 Allowable Stresses

Calculated stresses from the governing loading combinations for structures and equipment supports will not exceed the allowable limits permitted by the applicable codes, standards, and specifications.

2B.2.5.4 Load Factors and Load Combinations

For reinforced concrete structures and equipment supports, using the strength method, the strength design equations will be determined based on CBC 2013, Sections 1605.2.1, 1605.4, 1912, and ACI-318-14 Section 9.2. The Allowable Stress Design load combinations of CBC 2013 Section 1605.3 will be used to assess soil bearing pressure and stability of structures per CBC 2013 Sections 1806 and 1613, respectively.

Steel-framed structures will be designed in accordance with CBC 2013, Chapter 22 and the ANSI/AISC 360-10 Specification for Structural Steel Buildings, June 22, 2010. Connections will conform to Research Council on Structural Connections of the Engineering Foundation Specification for Structural Joints.

2B.2.6 Construction Materials

2B.2.6.1 Concrete and Grout

The design compressive strength (f'_c) of concrete and grout, as measured at 28 days, will be as follows:

Underground electrical duct bank encasement and lean concrete backfill	2,000 psi
Structural concrete	4,000 psi
Structural grout	5,000 psi

The classes of concrete and grout to be used will be shown on engineering design drawings or indicated in design specifications.

2B.2.6.2 Reinforcing Steel

Reinforcing steel bars for concrete will be deformed bars of billet steel, conforming to ASTM A615, Grade 60 or A706, Grade 60.

Welded wire fabric for concrete will conform to ASTM A185.

2B.2.6.3 Structural and Miscellaneous Steel

Structural and miscellaneous steel will generally conform to ASTM A36, ASTM A572, or ASTM A992 except in special situations where higher strength steel is required.

High-strength structural bolts, including nuts and washers, will conform to ASTM A325 or ASTM A490.

Bolts other than high-strength structural bolts will conform to ASTM A307, Grade A.

Foundation anchor bolts to be F1554-Grade 36 unless noted otherwise.

2B.2.6.4 Concrete Masonry

Concrete masonry units will be hollow, normal weight, Grade, N Type I, conforming to ASTM C90, lightweight.

Mortar will conform to ASTM C270, Type S.

Grout will conform to ASTM C94.

2B.2.6.5 Other Materials

Other materials for construction, such as anchor bolts, shear connectors, concrete expansion anchors, embedded metal, etc., will conform to industry standards and will be identified on engineering design drawings or specifications.

2B.3 Mechanical Engineering Design Criteria

2B.3.2 Introduction

This section summarizes the codes, standards, criteria, and practices that will be generally used in the design and construction of mechanical engineering systems for the SEP. More specific project information will be developed during execution of the project to support detailed design, engineering, material procurement specification, and construction specifications.

2B.3.3 Codes and Standards

The design of the mechanical systems and components will be in accordance with the laws and regulations of the federal government, State of California, Riverside County ordinances, and industry standards. The current issue or revision of the documents at the time of the filing of this AFC with the CEC will apply, unless otherwise noted. If there are conflicts between the cited documents, the more conservative requirements shall apply.

The following codes and standards are applicable to the mechanical aspects of the power facility.

- California Building Standards Code, 2010 (Effective July 2012)
- American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code
- ASME/ANSI B31.1 Power Piping Code
- ASME Performance Test Codes
- ASME Standard TDP-1
- American National Standards Institute (ANSI) B16.5, B16.34, and B133.8
- American Boiler Manufacturers Association (ABMA)
- American Gear Manufacturers Association (AGMA)
- Air Moving and Conditioning Association (AMCA)
- American Society for Testing and Materials (ASTM)
- American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE)
- American Welding Society (AWS)
- Cooling Tower Institute (CTI)
- Heat Exchange Institute (HEI)
- Manufacturing Standardization Society (MSS) of the Valve and Fitting Industry
- National Fire Protection Association (NFPA)
- Hydraulic Institute Standards (HIS)
- Tubular Exchanger Manufacturer's Association (TEMA)

2B.3.4 Mechanical Engineering General Design Criteria

2B.3.4.1 General

The systems, equipment, materials, and their installation will be designed in accordance with the applicable codes; industry standards; and local, state, and federal regulations, as well as the design criteria; manufacturing processes and procedures; and material selection, testing, welding, and finishing procedures specified in this section.

Detailed equipment design will be performed by the equipment vendors in accordance with the performance and general design requirements to be specified later by the project architect/engineering firm. Equipment vendors will be responsible for using construction materials suited for the intended use.

2B.3.4.2 Materials—General

Asbestos will not be used in the materials and equipment supplied. Where feasible, materials will be selected to withstand the design operating conditions, including expected ambient conditions, for the design life of the plant. It is anticipated that some materials will require replacement during the life of the plant due to corrosion, erosion, etc.

2B.3.4.2 Pumps

Pumps will be sized in accordance with industry standards. Where feasible, pumps will be selected for maximum efficiency at the normal operating point. Pumps will be designed to be free from excessive vibration throughout the operating range.

2B.3.4.2 Tanks

Large outdoor storage tanks will not be insulated except where required to maintain appropriate process temperatures or for personnel protection.

Overflow connections and lines will be provided. Maintenance drain connections will be provided for complete tank drainage.

Manholes, where provided, will be at least 24 inches in diameter and hinged to facilitate removal. Storage tanks will have ladders and cleanout doors as required to facilitate access/maintenance. Provisions will be included for proper tank ventilation during internal maintenance.

2B.3.4.2 Heat Exchangers

The heat exchangers will be provided as components of mechanical equipment packages and may be air-cooled or water-cooled shell-and-tube or plate type. Heat exchangers will be designed in accordance with TEMA or manufacturer's standards. Fouling factors will be specified in accordance with TEMA.

2B.3.4.2 Pressure Vessels

Pressure vessels will be designed, constructed, and installed in accordance with the ASME Boiler and Pressure Vessel Code

2B.3.4.2 Piping and Piping Supports

Stainless steel pipe may be Schedule 10S where design pressure permits. Underground piping may be high-density polyethylene (HDPE) or polyvinyl chloride (PVC) where permitted by code, operating conditions, and fluid properties. In general, water system piping will be HDPE or PVC where embedded or underground and carbon steel where aboveground. Appropriately lined and coated carbon steel pipe may alternately be used for buried water piping.

Threaded joints will not normally be used in piping used for lubricating oil, and natural gas service. Natural gas piping components will not use synthetic lubricants. Victaulic, or equal, couplings may be used for low energy aboveground piping, where feasible.

Piping systems will have high point vents and low point drains. Drains with restricting orifices or automated valves will be installed in low points of lines where condensate can collect during normal operation.

Hose and process tubing connections to portable components and systems will be compatible with the respective equipment suppliers' standard connections for each service.

Stainless steel piping will be used for portions of the lubricating oil system downstream of the filters. Carbon steel piping may be used elsewhere.

2B.3.4.2 Valves

General Requirements

Valves will be arranged for convenient operation from floor level where possible and, if required, will have extension spindles, chain operators, or gearing. Hand-actuated valves will be operable by one person. Gear operators will be provided to make sure that the force required at the hand wheel of the operator does not exceed 20 lbs.

Valves will be arranged to close when the handwheel is rotated in a clockwise direction when looking at the handwheel from the operating position. The direction of rotation to close the valve will be clearly marked on the face of each handwheel.

Valve materials will be suitable for operation at the maximum working pressure and temperature of the piping to which they are connected. Steel valves will have cast or forged steel spindles. Seats and faces will be of low friction, wear resistant materials. Valves in throttling service will be selected with design characteristics and of materials that will resist erosion of the valve seats when the valves are operated partly closed.

Drain and Vent Valves and Traps

Drains and vents in 600 pound class or higher piping and 900ºF or higher service will be double-valved.

Trap bodies and covers will be cast or forged steel and will be suitable for operating at the maximum working pressure and temperature of the piping to which they are connected. Traps will be piped to drain collection tank or sumps and returned to the process if convenient.

Low-pressure Water Valves

Low-pressure water valves will be gate or butterfly type of cast iron construction. Ductile iron valves will have ductile iron bodies, covers, gates (discs), and bridges; the spindles, seats, and faces will be bronze. Fire protection valves will be Underwriters Laboratories-approved butterfly valves meeting NFPA requirements.

Instrument Air Valves

Instrument air valves will be the ball type of stainless construction, with valve face and seat of approved wear-resistant alloy.

Nonreturn Valves

Nonreturn valves for steam service will be in accordance with ANSI standards and properly drained. Nonreturn valves in vertical positions will have bypass and drain valves. Bodies will have removable access covers to enable the internal parts to be examined or renewed without removing the valve from the pipeline.

Motor Actuated Valves

Electric motor actuators will be designed specifically for the operating speeds, differential and static pressures, process line flowrates, operating environment, and frequency of operations for the application. Electric actuators will have self-locking features. A handwheel and declutching mechanism will be provided to allow handwheel engagement at any time except when the motor is energized. Actuators will automatically revert to motor operation, disengaging the handwheel, upon energizing the motor. The motor actuator will be placed in a position relative to the valve that prevents leakage of liquid, steam, or corrosive gas from valve joints onto the motor or control equipment.

Safety and Relief Valves

Safety valves and/or relief valves will be provided as required by code for pressure vessels, heaters, and boilers. Safety and relief valves will be installed vertically. Piping systems that can be over-pressurized by a higher-pressure source will also be protected by pressure-relief valves. Equipment or parts of equipment that can be over pressurized by thermal expansion of the contained liquid will have thermal-relief valves.

Instrument Root Valves.

Instrument root valves will be specified for operation at the working pressure and temperature of the piping to which they are connected. Test points and sample lines in systems that are 600 pound class or higher service will be double valved.

2B.3.4.2 Heating, Ventilating, and Air Conditioning (HVAC)

HVAC system design will be based on site ambient conditions specified in Section 2.0, Project Description.

Except for the HVAC systems serving the control room, maintenance shop, lab areas, and administration areas, the systems will not be designed to provide comfort levels for extended human occupancy.

Air conditioning will include both heating and cooling of the inlet filtered air. Air velocities in ducts and from louvers and grills will be low enough not to cause unacceptable noise levels in areas where personnel are normally located.

Fans and motors will be mounted on anti-vibration bases to isolate the units from the building structure. Exposed fan outlets and inlets will be fitted with guards. Wire guards will be specified for belt driven fans and arranged to enclose the pulleys and belts.

Air filters will be housed in a manner that facilitates removal. The filter frames will be specified to pass the air being handled through the filter without leakage.

Ductwork, filter frames, and fan casings will be constructed of mild steel sheets stiffened with mild steel flanges and galvanized. Ductwork will be the sectional bolted type and will be adequately supported. Duct joints will be leak tight.

Grills and louvers will be of adjustable metal construction.

2B.3.4.2 Thermal Insulation and Cladding

Parts of the facility requiring insulation to reduce heat loss or afford personnel safety will be thermally insulated. Minimum insulation thickness for hot surfaces near personnel will be designed to limit the outside lagging surface temperature to a maximum of 140°F.

The thermal insulation will have as its main constituent calcium silicate, foam glass, fiber glass, or mineral wool, and will consist of pre-formed slabs or blankets, where feasible. Asbestos-containing materials are prohibited. An aluminum jacket or suitable coating will be provided on the outside surface of the insulation. Insulation system materials, including jacketing, will have a flame spread rating of 25 or less when tested in accordance with ASTM E 84.

Insulation at valves, pipe joints, steam traps, or other points to which access may be required for maintenance will be specified to be removable with a minimum of disturbance to the pipe insulation. At each flanged joint, the molded material will terminate on the pipe at a distance from the flange equal to the overall length of the flange bolts to permit their removal without damaging the molded insulation. Outdoor aboveground insulated piping will be clad with textured aluminum of not less than 30 mil thickness and frame reinforced. At the joints, the sheets will be sufficiently overlapped and caulked to prevent moisture from penetrating the insulation. Steam trap stations will be “boxed” for ease of trap maintenance.

Design temperature limits for thermal insulation will be based on system operating temperature during normal operation.

Outdoor and underground insulation will be moisture resistant.

2B.3.4.2 Testing

Hydrostatic testing, including pressure testing at 1.5 times the design pressure, or as required by the applicable code, will be specified and performed for pressure boundary components where an in-service test is not feasible or permitted by code.

2B.3.4.2 Welding

Welders and welding procedures will be certified in accordance with the requirements of the applicable codes and standards before performing any welding. Records of welder qualifications and weld procedures will be maintained.

2B.3.4.2 Painting

Except as otherwise specified, equipment will receive the respective manufacturer’s standard shop finish. Finish colors will be selected from among the paint manufacturer’s standard colors.

Finish painting of uninsulated piping will be limited to that required by OSHA for safety or for protection from the elements.

Piping to be insulated will not be finish painted.

2B.3.4.2 Lubrication

The types of lubrication specified for facility equipment will be suited to the operating conditions and will comply with the recommendations of the equipment manufacturers.

The initial startup charge of flushing oil will be the equipment manufacturer's standard lubricant for the intended service. Subsequently, such flushing oil will be sampled and analyzed to determine whether it can also be used for normal operation or must be replaced in accordance with the equipment supplier's recommendations.

Rotating equipment will be lubricated as designed by the individual equipment manufacturers. Where automatic lubricators are fitted to equipment, provision for emergency hand lubrication will also be specified. Where applicable, equipment will be designed to be manually lubricated while in operation without the removal of protective guards. Lubrication filling and drain points will be readily accessible.

2B.4 Electrical Engineering Design Criteria

2B.4.2 Introduction

This section summarizes the codes, standards, criteria, and practices that will be generally used in the design and construction of electrical engineering systems for the SEP. More specific project information will be developed during execution of the project to support detailed design, engineering, material procurement specification, and construction specifications.

2B.4.3 Codes and Standards

The design of the electrical systems and components will be in accordance with the laws and regulations of the federal government, the State of California, local ordinances, and industry standards. The current issue or revision of the documents at the time of filing this AFC with the CEC will apply, unless otherwise noted. If there are conflicts between the cited documents, the more conservative requirement will apply.

The following codes and standards are applicable to the electrical aspects of the power facility:

- American National Standards Institute (ANSI)
- American Society for Testing and Materials (ASTM)
- Anti-Friction Bearing Manufacturers Association (AFBMA)
- California Building Standards Code
- California Electrical Code
- Insulated Cable Engineers Association (ICEA)
- Institute of Electrical and Electronics Engineers (IEEE)
- Illuminating Engineering Society (IES)
- National Association of Corrosion Engineers (NACE)
- National Electrical Code (NEC)
- National Electrical Manufacturers Association (NEMA)
- National Electrical Safety Code (NESC)
- National Fire Protection Association (NFPA)
- Underwriters Laboratories, Inc. (UL)

2B.4.4 Switchyard and Transformers

2B.4.4.1 Switchyard

The generator will connect to the existing 161 kV switchyard. The switchyard will consist of circuit breakers and lines to the grid. Each line will be equipped with the appropriate instrument transformers for protection and metering. Surge arresters will be provided for the outgoing lines in the area of the takeoff towers.

The switchyard will be located near the main step-up transformers and will require an overhead span for the connection.

The breakers will be of the dead tank design with current transformers on each bushing. Disconnect switches will be located on each side of the breakers to isolate the breaker, and one switch will be located at each line termination or transformer connection for isolation of the lines or transformer for maintenance.

Tubular bus used in the switchyard will be aluminum alloy. Cable connections between the tube bus and equipment will be ACSR, AAAC, or AAC cable. Tube and cables will meet all electrical and mechanical design

requirements. Instrument transformers (current and capacitive voltage transformers) will be included for protection and synchronization where required.

A grounding grid will be provided to control step and touch potentials in accordance with IEEE Standard 80, Safety in Substation Grounding. Metallic equipment, structures, and fencing will be connected to the grounding grid of buried conductors and ground rods, as required for personnel safety. The substation ground grid will be tied to the plant ground grid.

Lightning protection will be provided by shield wires or lightning masts. The lightning protection system will be designed in accordance with IEEE 998 guidelines.

All faults will be detected, isolated, and cleared in a safe and coordinated manner as soon as practical to ensure the safety of equipment, personnel, and the public. Protective relaying will meet IEEE requirements and will be coordinated with the utility.

Revenue metering will be provided on the 13.8-kV generator bus to record net power to or from the switchyard. Meters and a metering panel will be provided.

2B.4.4.2 Generator Circuit Breakers

The generator will have a dedicated generator circuit breaker (GCB). The GCB will be capable of handling the generator nameplate output. They will also be rated for the available through fault currents associated with the circuit.

The GCB will serve two purposes. It will allow the generator to be isolated from the grid and it will be used to synchronize the generator with the grid.

During plant startup the GCB will be open. When the generator is at full speed and synchronized with the grid, the GCB will be closed to allow power flow from the generator to the grid.

2B.4.4.3 Transformers

The generator will be connected to the 161 switchyard through main step-up transformer. The step-up transformer will be designed in accordance with ANSI standards C57.12.00, C57.12.90, and C57.91. The main step-up transformer will have metal oxide surge arrestors connected to the high-voltage terminals and will have manual de-energized (“no-load”) tap changers located in high-voltage windings.

The generator will be provided with 18-kV to 4.16-kV auxiliary power transformer. The auxiliary transformers will be used to feed all of the electrical loads associated with the plant.

During plant startup, power will be backed through the generator step-up transformer to the auxiliary transformer. Once the generator has been started and synchronized with the utility bus, the generator circuit breaker will be closed. When this occurs, the generator will begin feeding power to the auxiliary transformer and exporting power to the grid.

2B.5 Control Engineering Design Criteria

2B.5.2 Introduction

This section summarizes the codes, standards, criteria, and practices that will be generally used in the design and installation of instrumentation and controls for SEP. More specific project information will be developed during execution of the project to support detailed design, engineering, material procurement specification and construction specifications.

2B.5.3 Codes and Standards

The design specification of all work will be in accordance with the laws and regulations of the federal government, the State of California, and local codes and ordinances. A summary of general codes and industry standards applicable to design and control aspects of the power facility follows.

- American National Standards Institute (ANSI)

- American Society of Mechanical Engineers (ASME)
- The Institute of Electrical and Electronics Engineers (IEEE)
- International Society of Automation (ISA)
- National Electrical Manufacturers Association (NEMA)
- National Electrical Safety Code (NESC)
- National Fire Protection Association (NFPA)
- American Society for Testing and Materials (ASTM)

2B.5.4 Control Systems Design Criteria

2B.5.4.1 General Requirements

Electronic signal levels, where used, will be 4 to 20 milliamps (mA) for analog transmitter outputs, controller outputs, electric-to-pneumatic converter inputs, and valve positioner inputs.

The switched sensor full-scale signal level will be between 0 and 125 volt (V).

2B.5.4.2 Pressure Instruments

In general, pressure instruments will have linear scales with units of measurement in pounds per square inch, gauge (psig).

Pressure gauges will have either a blowout disk or a blowout back and an acrylic or shatterproof glass face.

Pressure gauges on process piping will be resistant to plant atmospheres.

Pressure test points will have isolation valves and caps or plugs. Pressure devices on pulsating services will have pulsation dampers.

2B.5.4.3 Temperature Instruments

In general, temperature instruments will have scales with temperature units in degrees Fahrenheit (°F). Exceptions to this are electrical machinery resistance temperature detectors (RTDs) and transformer winding temperatures, which are in degrees Celsius (°C).

Bimetal-actuated dial thermometers will have 4.5- or 5-inch-diameter (minimum) dials and white faces with black scale markings and will consist of every angle-type. Dial thermometers will be resistant to plant atmospheres.

Temperature elements and dial thermometers will be protected by thermowells except when measuring gas or air temperatures at atmospheric pressure. Temperature test points will have thermowells and caps or plugs.

RTDs will be 100-ohm platinum, 3-wire type. The element will be spring-loaded, mounted in a thermowell, and connected to a cast iron head assembly.

Thermocouples will be Type J or K dual-element, grounded, spring-loaded, for general service. Materials of construction will be dictated by service temperatures. Thermocouple heads will be the cast type with an internal grounding screw.

2B.5.4.4 Level Instruments

Reflex-glass or magnetic level gauges will be used. Level gauges for high-pressure service will have suitable personnel protection.

Gauge glasses used in conjunction with level instruments will cover a range that includes the highest and lowest trip/alarm set points.

2B.5.4.5 Flow Instruments

Flow transmitters will typically be the differential pressure-type with the range similar to that of the primary element. In general, linear scales will be used for flow indication and recording.

Magnetic flow transmitters may be used for liquid flow measurement below 200°F.

2B.5.4.6 Control Valves

Control valves in throttling service will generally be the globe-body cage type with body materials, pressure rating, and valve trims suitable for the service involved. Other style valve bodies (e.g., butterfly, eccentric disk) may also be used when suitable for the intended service.

Valves will be designed to fail in a safe position.

Control valve body size will not be more than two sizes smaller than line size, unless the smaller size is specifically reviewed for stresses in the piping.

Control valves in 600-Class service and below will be flanged where economical. Where flanged valves are used, minimum flange rating will be ANSI 300 Class.

Critical service valves will be defined as ANSI 900 Class and higher in valves of sizes larger than 2 inches.

Severe service valves will be defined as valves requiring anti-cavitation trim, low noise trim, or flashing service, with differential pressures greater than 100 pounds per square inch (psi).

In general, control valves will be specified for a noise level no greater than 90 decibel A-rated (dBA) when measured 3 feet downstream and 3 feet away from the pipe surface.

Valve actuators will use positioners and the highest pressure, smallest size actuator, and will be the pneumatic-spring diaphragm or piston type. Actuators will be sized to shut off against at least 110 percent of the maximum shutoff pressure and designed to function with instrument air pressure ranging from 80 to 125 psig.

Handwheels will be furnished only on those valves that can be manually set and controlled during system operation (to maintain plant operation) and do not have manual bypasses.

Control valve accessories, excluding controllers, will be mounted on the valve actuator unless severe vibration is expected.

Solenoid valves supplied with the control valves will have Class H coils. The coil enclosure will normally be a minimum of NEMA 4 but will be suitable for the area of installation. Terminations will typically be by pigtail wires.

Valve position feedback (with input to the DCS for display) will be provided for all control valves.

2B.5.4.7 Instrument Tubing and Installation

Tubing used to connect instruments to the process line will be stainless steel for primary instruments and sampling systems.

Instrument tubing fittings will be the compression type. One manufacturer will be selected for use and will be standardized as much as practical throughout the plant.

Differential pressure (flow) instruments will be fitted with three-valve manifolds; two-valve manifolds will be specified for other instruments as appropriate.

Instrument installation will be designed to correctly sense the process variable. Taps on process lines will be located so that sensing lines do not trap air in liquid service or liquid in gas service. Taps on process lines will be fitted with a shutoff (root or gauge valve) close to the process line. Root and gauge valves will be main-line class valves.

Instrument tubing will be supported in both horizontal and vertical runs as necessary. Expansion loops will be provided in tubing runs subject to high temperatures. The instrument tubing support design will allow for movement of the main process line.

2B.5.4.8 Pressure and Temperature Switches

Field-mounted pressure and temperature switches will have either NEMA Type 4 housings or housings suitable for the environment.

In general, switches will be applied such that the actuation point is within the center one-third of the instrument range.

2B.5.4.9 Field-mounted Instruments

Field-mounted instruments will be of a design suitable for the area in which they are located. They will be mounted in areas accessible for maintenance and relatively free of vibration and will not block walkways or prevent maintenance of other equipment.

Field-mounted instruments will be grouped on racks. Supports for individual instruments will be prefabricated, off-the-shelf, 2-inch pipestand. Instrument racks and individual supports will be mounted to concrete floors, to platforms, or on support steel in locations not subject to excessive vibration.

Individual field instrument sensing lines will be sloped or pitched in such a manner and be of such length, routing, and configuration that signal response is not adversely affected.

Liquid level controllers will generally be the non-indicating, displacement-type with external cages.

2B.5.4.10 Instrument Air System

Branch headers will have a shutoff valve at the takeoff from the main header. The branch headers will be sized for the air usage of the instruments served, but will be no smaller than 3/8 inch. Each instrument air user will have a shutoff valve, filter, outlet gauge, and regulator at the instrument.

2B.6 Chemical Engineering Design Criteria

2B.6.2 Introduction

This section summarizes the general chemical engineering design criteria for the SEP. These criteria form the basis of the design for the chemical components and systems of the project. More specific design information is developed during detailed design to support equipment and erection specifications. It is not the intent of this appendix to present the detailed design information for each component and system, but rather to summarize the codes, standards, and general criteria that will be used.

2B.6.3 Design Codes and Standards

The design and specification of all work will be in accordance with the laws and regulations of the federal government, the State of California, and local codes and ordinances. Industry codes and standards relevant to chemical engineering design to be used in design and construction are summarized below.

- ANSI B31.1 Power Piping Code
- ASME Performance Test Code 31, Ion Exchange Equipment
- American Society for Testing and Materials (ASTM)
- California Building Code (CBC)
- Occupational Safety and Health Administration (OSHA)
- Steel Structures Painting Council Standards (SSPC)
- Underwriters Laboratories
- American Waterworks Association (AWWA)

Other recognized standards will be used as required to serve as design, fabrication, and construction guidelines when not in conflict with the above-listed standards.

The codes and industry standards used for design, fabrication, and construction will be the codes and industry standards, including all addenda, in effect as stated in equipment and construction purchase or contract documents.

2B.6.4 General Criteria

2B.6.4.1 Design Water Quality

Service Water

Service water (such as fire water, eye wash station water, etc.) will be provided by local wells.

2B.6.4.1 Filtering System

Raw water will be filtered via mechanical filters to large remove suspended solids. The filtered water will then be sent to the Raw Water Tank.

2B.6.4.1 Demineralized Water System

Demineralized water will be produced by an onsite water treatment plant. The high-quality demineralized water will be used for steam cycle make up and turbine water washing. The demineralized water will be the highest practical quality.

2B.6.4.1 Construction Water

Water for use during construction will be supplied from the well water system.

2B.6.4.1 Fire Protection Water

The source of water for fire protection will be from the raw water / fire water tank. The tank will have a minimum capacity of 2 hours of firewater reserved in the tank.

2B.6.4.2 Chemical Conditioning

2B.6.4.2 Process Water Chemical Conditioning

The plant process water will be chlorinated using sodium hypochlorite (bleach).

2B.6.4.3 Chemical Storage

2B.6.4.3 Storage Capacity

Dechlorination feed equipment will consist of a returnable tote with two full capacity sodium bisulfite metering pumps.

The scale inhibitor feed equipment will consist of a returnable tote with two full-capacity scale inhibitor metering pumps.

Corrosion control feed equipment will consist of a returnable tote with two full-capacity corrosion control metering pumps.

Sodium Hypochlorite feed equipment will consist of a returnable tote with two full-capacity corrosion control metering pumps.

The sulfuric acid feed equipment will consist of a storage tank. The tank will be accompanied by two, full-capacity sulfuric acid metering pumps.

2B.6.4.3 Containment

Chemical storage tanks containing corrosive fluids will be surrounded by curbing. Curbing and drain piping design will allow a full tank capacity spill without overflowing the curbing. For multiple tanks located within the same curbed area, the largest single tank will be used to size the curbing and drain piping. For outdoor chemical containment areas, additional containment volume will be included for stormwater.

2B.6.4.3 Closed Drains

Waste piping for volatile liquids and wastes with offensive odors will use closed drains to control noxious fumes and vapors.

2B.6.4.3 Coatings

Tanks, piping, and curbing for chemical storage applications will be provided with a protective coating system.

The specific requirements for selection of an appropriate coating will be identified prior to equipment and construction contract procurements.

2B.6.4.4 Wastewater Treatment

The primary wastewater collection system will collect process wastewater from all of the plant equipment, including the evaporative coolers. Primary waste water will be recycled as make up to the cooling tower.

General plant drains will collect area washdown, sample drains, and drainage from facility equipment areas. Water from these areas will be collected in a system of floor drains, hub drains, sumps, and piping and routed to the wastewater collection system. Drains that potentially could contain oil or grease will first be routed through the existing oil/water separator.

Wastewater from combustion turbine water washes will be collected in a water wash drains tank to await truck collection and disposal.

2B.7 Geologic and Foundation Design Criteria

2B.7.2 Introduction

This section provides a summary description of the site conditions and preliminary foundation-related subsurface conditions. The proposed project has been evaluated with respect to its potential impacts on the geologic environment and the potential impacts that geologic and seismic hazards may have on the proposed site. The principle seismic hazards evaluated at the site are surface ground rupture, ground shaking, seismically induced liquefaction, and various manifestations of liquefaction-related hazards, i.e. dynamic settlement and lateral spreading. Soil-related hazards addressed include soil liquefaction, hydrocompaction (or collapsible soils), and expansive soils. Preliminary foundation and earthwork considerations are based on Ninyo & Moore's preliminary geotechnical evaluation completed for the SEP site. For complete geotechnical information please see the attached Preliminary Geotechnical Evaluation report by Ninyo & Moore, dated December 2, 2011, project no. 208356001.

2B.7.3 Scope of Work

Information contained in this appendix reflects the codes, standards, criteria, and practices that will be used in the design and construction of site and foundation engineering systems for the facility. More specific project information will be developed during execution of the project to support detailed design, engineering, material procurement specification, and construction specifications. This information will be included in a final geotechnical engineering study to be completed prior to detailed design, which, if requested, will be provided to the CEC upon completion.

2B.7.4 Site Conditions

The SEP site will cover approximately 25 acres and is located in Riverside County, California. Elevation of the site is approximately 350 feet above mean sea level. The SEP project site is just west of the existing AltaGas Blythe 1 Generation station.

2B.7.5 Assessment of Seismic-Related Hazards

2B.7.5.1 Stratigraphy

Two (2) soil borings and four (4) cone penetrometer tests were performed by Ninyo & Moore at the project site to verify the soil consistency and characteristics.

2B.7.5.2 Regional Seismicity

The site is located in a seismically active area, as is the majority of southern California, and the potential for strong ground motion in the project area is considered significant during the design life of the proposed structures. See Ninyo & Moore report Figure 5 which shows the approximate site location relative to the principal faults in the

region. The site is located within a State of California Seismic Hazard Zone as an area considered susceptible to liquefaction (CDMG, 1998), as shown on Figure 6 of the geotechnical report.

2B.7.5.3 Surface Fault Rupture

Surface fault rupture is the offset or rupturing of the ground surface by relative displacementacross a fault during an earthquake. The Sonoran Energy Generating Station site is situated along the general trend of the Newport-Inglewood fault zone. Based on the review conducted during the preliminary geotechnical report, of referenced geologic and fault hazard data, the northeast corner of the power plant property ismapped as being transected by the South Branch fault of the NIFZ (Figure 2) of the Preliminary Geotechnical Report by Ninyo and Moore. The fault trace is mapped approximately 500 feet northeast of the proposed re-powering project area. Additional fault traces associated with the NIFZ are mapped further to the northeast from the site. Based on the distance of the mapped fault to the area of the proposed re-powering project, the potential for surface fault rupture impacting the project is relatively low. In light of the regional geologic and fault setting, additional evaluation of faulting near the site may be appropriate during the design phase of the project.

2B.7.5.4 Liquefaction Dynamic Settling and Lateral Spreading

Liquefaction is the phenomenon in which loosely deposited granular soils located below the water table undergo rapid loss of shear strength due to excess pore pressure generation when subjected to strong earthquake-induced ground shaking. Ground shaking of sufficient duration results in the loss of grain-to-grain contact due to the rapid rise of in pore water pressure; causing the soil to behave as a fluid for a short period of time. Liquefaction is known generally to occur in saturated or near-saturated cohesionless soils at depths shallower than 50 feet below the ground surface. Factors known to influence liquefaction potential include composition and thickness of soil layers, grain size, relative density, groundwater level, degree of saturation, and both intensity and duration of ground shaking.

The project site is mapped in a State of California Seismic Hazard Zone as potentially liquefiable as shown on Figure 6 (CDMG, 1997c) of the Ninyo and Moore Preliminary Geotechnical Report; the results of the liquefaction analysis are presented in Appendix C of the same report.

To evaluate the potential impact from liquefaction, an analysis was also performed to estimate the magnitude of dynamic settlement due to liquefaction. The analysis indicates that liquefaction induced settlement at the project site would be approximately 1¼ inch or less (see Appendix C of the Ninyo and Moore Preliminary Geotechnical Report).

Lateral spreading of the ground surface during an earthquake usually takes place along weak shear zones that have formed within a liquefiable soil layer. Lateral spread has generally been observed to take place in the direction of a free-face (i.e., retaining wall, slope, or channel) but has also been observed to a lesser extent on ground surfaces with gentle slopes. For sites located in proximity to a free-face, the amount of lateral ground displacement is strongly correlated with the distance of the site from the free-face. Other factors such as earthquake magnitude, distance from the earthquake epicenter, thickness of the liquefiable layers, and the fines content and particle sizes of the liquefiable layers also affect the amount of lateral ground displacement.

The project site includes free-face slopes along the Huntington Beach Channel on the north and east sides of the site. However, based on analysis of the sampler blow counts and generally discontinuous nature of the underlying soil layers encountered in the exploration, the preliminary geotechnical report concluded that the project site is not considered susceptible to significant seismically induced lateral spread.

2B.7.5.5 Ground Shaking

Earthquake events from one of the regional active or potentially active faults near the project could result in strong ground shaking which could affect the project site. The level of ground shaking at a given location depends on many factors, including the size and type of earthquake, distance from the earthquake, and subsurface geologic conditions. The type of construction also affects how particular structures and improvements perform during ground shaking.

The potential levels of ground shaking could impact the proposed re-powering project without appropriate design mitigation, and therefore, guidelines of the governing jurisdictions and the 2010 CBC should be followed in the detail design phase of the project.

2B.7.6 Assessment of Soil-related Hazards

2B.7.6.1 Expansive Soils

Expansive soils include clay minerals that are characterized by their ability to undergo significant volume change (shrink or swell) due to variations in moisture content. Sandy soils are generally not expansive. Changes in soil moisture content can result from rainfall, irrigation, pipeline leakage, surface drainage, perched groundwater, drought, or other factors.

Volumetric change of expansive soil may cause excessive cracking and heaving of structures with shallow foundations, concrete slabs-on-grade, or pavements supported on these materials. Constructing project improvements on soils known to be potentially expansive could have a significant impact to the project. Based on the subsurface exploration, the near-surface soils at the project site are predominantly comprised of fine-grained sand with silt, clay, sandy silt and clayey silt. These soils are typically low to moderately expansive. The site-specific potential for expansive soils at the location of the proposed improvements should be evaluated during the detailed design stage of the project in order to provide recommendations to mitigate the potential impacts of expansive soils.

2B.7.6.2 Compressible/Collapsible Soils

Compressible soils are generally comprised of soils that undergo consolidation when exposed to new loading, such as fill or foundation loads. Soil collapse is a phenomenon where the soils undergo a significant decrease in volume upon increase in moisture content, with or without an increase in external loads. Buildings, structures and other improvements may be subject to excessive settlement-related distress when compressible soils or collapsible soils are present.

Based on the subsurface exploration, the project site is underlain by existing fill soils and interbedded alluvial sediments. Older, undocumented fill soils are considered potentially compressible. In addition, some very soft silty clay alluvial/estuarine soil layers were encountered, which are considered potentially compressible. Due to the high groundwater levels encountered at the site and the reported historically high groundwater, the preliminary geotechnical report concluded that the site soils are not susceptible to hydro-collapse. Due to the presence of potentially compressible soils at the site, the potential impacts of settlement could be significant without appropriate mitigation during detailed project design and construction.

2B.7.6.3 Subsidence

Subsidence is characterized as a sinking of the ground surface relative to surrounding areas, and can generally occur where deep soil deposits are present. Subsidence in areas of deep soil deposits is typically associated with regional groundwater withdrawal or other fluid withdrawal from the ground such as oil and natural gas. Subsidence can result in the development of ground cracks and damage to foundations, buildings and other improvements. Historic oil and gas withdrawal has resulted in significant ground subsidence in areas of the City of Long Beach. Ground subsidence has also occurred in the Huntington Beach Oil Field area (City of Huntington Beach, 1996). The project site is not located in an area of known historic subsidence. Therefore, the potential for subsidence is relatively low.

2B.7.6.4 Groundwater

Groundwater was observed during exploratory borings at the time of drilling at a depth of approximately 14 feet. The groundwater depths observed at the time of drilling are not considered stabilized groundwater depths. The California Geologic Survey (CGS) Seismic Hazard Zone report for this area indicates that the historic high groundwater in the vicinity of the site is approximately 3 feet below the ground surface. Fluctuations in the depth of groundwater will occur due to tidal variations, seasonal precipitation, variations in ground elevations, groundwater pumping, projected sea level rise and other factors.

2B.7.6.5 Corrosive Soils

The project site is located in a geologic environment that could potentially contain soils that are corrosive to concrete and metals. Corrosive soil conditions may exacerbate the corrosion hazard to buried conduits, foundations, and other buried concrete or metal improvements. Corrosive soil could cause premature deterioration of these underground structures or foundations. Constructing project improvements on corrosive soils could have a significant impact to the project. Recommendations should be provided by a corrosion engineer during the detailed design phase of the project to mitigate the potential impacts of corrosive soils.

2B.7.7 Preliminary Foundation Considerations

2B.7.7.1 General Foundation Design Criteria

For satisfactory performance, the foundation of any structure must satisfy two independent design criteria. First, it must have an acceptable factor of safety against bearing failure in the foundation soils under maximum design load. Second, settlements during the life of the structure must not be of a magnitude that will cause structural damage, endanger piping connections, or impair the operational efficiency of the facility. Selection of the foundation type to satisfy these criteria depends on the nature and magnitude of dead and live loads, the base area of the structure and the settlement tolerances. Where more than one foundation type satisfies these criteria, then cost, scheduling, material availability, and local practice will probably influence or determine the final selection of the type of foundation.

Based on results of the preliminary geotechnical evaluation, the project site is considered suitable for the proposed improvements from a geotechnical perspective. The potential geologic and seismic hazards described above may be mitigated by employing sound engineering practice in the design and construction of the new power generating facilities and associated improvements. This practice includes the implementation of appropriate geotechnical recommendations during design and construction of the improvements at the site. Typical methods to mitigate potential significant hazards that may be encountered during construction are summarize in the following sections with further information and details provided in the Preliminary Geotechnical Report by Ninyo & Moore.

2B.7.7.2 Shallow Foundations

Preliminary geotechnical evaluation indicates the proposed structures can be supported on mat foundations when combined with in-situ ground improvements. Relatively light minor structures, new pavements and hardscape areas may be supported on suitable compacted fill, placed in accordance with detailed geotechnical recommendations.

Ground improvement techniques such as vibro-replacement stone columns, rammed aggregate piers or compaction grouting would mitigate the compressible soils and liquefaction hazard, and the new structures could then be supported on shallow mat foundation systems within the ground improvement zones. Further geotechnical investigation will be required to determine allowable bearing pressures if ground improvement techniques prove to be a cost effective solution for the project.

2B.7.7.3 Deep Foundations

The site is susceptible to compressible soils and the potential for dynamic settlement related to liquefaction. Therefore, the preliminary geotechnical evaluation recommends supporting the major re-powering improvement structures on deep pile foundations.

Driven pre-cast concrete pile foundations can be considered for preliminary design of the proposed re-powering improvements. A typical 14 inch diameter pre-cast pile driven to approximately 30 feet deep can be considered based on preliminary geotechnical investigation. An axial capacity of 90 kips can be used

2B.7.8 Preliminary Earthwork Considerations

2B.7.8.1 Site Preparation and Grading

The subgrade preparation would include the complete removal of all vegetation and topsoil. The majority of the vegetation on the site consists of weeds and grasses with a maximum root depth of less than a foot. Topsoil can be stockpiled and may be reused in remote areas of the site where no future construction is expected.

As shown on the Proposed Drainage Plan, any site fill work should be performed as detailed below. All soil surfaces to receive fill should be proof-rolled with a heavy vibratory roller or a fully loaded dump truck to detect soft areas.

2B.7.8.2 Temporary Excavations

All excavations should be sloped in accordance with Occupational Safety and Health Act (OSHA) requirements. Based on preliminary evaluation, we anticipate subsurface excavation to be comprised predominantly of sandy silt and fine-grained sand with silt and clay. These sandy soils generally have relatively little cohesion and have a high potential for caving. Therefore temporary slopes above the water table should be stable at an inclination of 1 ½:1 (horizontal to vertical) for excavations deeper than 4 feet but not more than 10 feet below existing grade. Some surficial sloughing may occur, and temporary slopes will be evaluated in the field by a geotechnical engineer. Sheet piling could also be used to support any excavation. The need for internal supports in the excavation will be determined based on the final depth of the excavation. Any excavation below the water table should be dewatered using well points or other suitable system installed prior to the start of excavation.

2B.7.8.3 Permanent Slopes

Cut and fill slopes shall be 2h:1v (horizontal to vertical) maximum.

2B.7.8.4 Backfill Requirements

Based on the preliminary geotechnical evaluation, it is anticipated that the materials encountered in near-surface excavations would be appropriate material for re-use as structural fill. Recommended backfill materials shall be in conformance with the “Green book” (Standard Specifications for Public Works Construction) specifications for structural backfill and approved by Geotechnical Engineer. All fill material will be free of organic matter, debris, or clay balls, with a maximum size not exceeding 3 inches.

Fill compaction requirements shall be verified with the final geotechnical investigation prior to detailed design. For preliminary design and estimating purposes the following guidelines shall be followed: Structural fill will be compacted to at least 95 percent of the maximum dry density as determined by ASTM D 1557 when used for raising the grade throughout the site, below footings or mats, or for rough grading. Fill placed behind retaining structures may be compacted to 90 percent of the maximum dry density as determined by ASTM D 1557. Initially, structural fill will be placed in lifts not exceeding 8 inches loose thickness. Thicker lifts may be used pursuant to approval based on results of field compaction performance. The moisture content of all compacted fill will fall within 3 percentage points of the optimum moisture content measured by ASTM D 1557, except the top 12 inches of subgrade will be compacted to 95 percent of ASTM D 1557 maximum density.

Pipe bedding can be compacted in 12-inch lifts to 90 percent of the maximum dry density as determined by ASTM D 1557. Common fill to be placed in remote and/or unsurfaced areas may be compacted in 12-inch lifts to 85 percent of the maximum dry density as determined by ASTM D 1557.

2B.7.9 Inspection and Monitoring

A California-registered Geotechnical Engineer or Engineering Geologist will monitor geotechnical aspects of foundation construction and/or installation, excavation and fill placement. At a minimum the Geotechnical Engineer/Engineering Geologist will monitor the following activities:

- Excavation operations will be monitored to confirm extent of excavation and removal of unsuitable material.
- Surfaces to receive fill will be inspected prior to fill placement to verify that no pockets of loose/soft or otherwise unsuitable material were left in place, free of standing water and that the subgrade is suitable for structural fill placement.

- Fill placement operations will be monitored by an independent testing agency. Field compaction control testing will be performed regularly and in accordance with the applicable specification to be issued by the Geotechnical Engineer.
- The Geotechnical Engineer will witness pile installation if required. Pile load capacity
- Settlement monitoring of significant foundations and equipment is recommended on at least a quarterly basis during construction and the first year of operation, and then semi-annually for the next 2 years.

2B.7.10 Site Design Criteria

2B.7.10.1 General

The project will be located in Blythe, CA. The approximate 25-acre site is relatively flat, with existing power generation structures on the project site. The site would be accessible via Hobson Way and Riverside Avenue.

2B.7.10.2 Datum

The site grade ranges from approximately 8 to 13 feet above mean sea level, as evidenced by a recent topographical survey, said being based on the North American Vertical Datum of 1988 (NAVD ’88).

2B.7.11 Foundation Design Criteria

2B.7.11.1 General

Reinforced concrete structures (spread footings, mats, and deep foundations) will be designed consistent with Section 1.1 and 1.2, Civil and Structural Engineering Design Criteria.

Foundation design will be in accordance with this appendix and the detailed geotechnical investigation for the site.

2B.7.11.2 Groundwater Pressures

Hydrostatic pressures due to groundwater or temporary water loads will be considered.

2B.7.11.3 Factors of Safety

The factor of safety for structures, tanks and equipment supports with respect to overturning, sliding, and uplift due to wind and buoyancy will be as defined in Section 1.2, Structural Engineering Design Criteria.

2B.7.11.4 Load Factors and Load Combinations

For reinforced concrete structures and equipment supports, using the strength method, the load factors and load combinations will be in accordance with Section 1.2, Structural Engineering Design Criteria.

2B.7.12 References

California Building Code. 2010.

Preliminary Geotechnical Evaluation Report by Ninyo & Moore, dated December 2, 2011, Project No. 208356001.

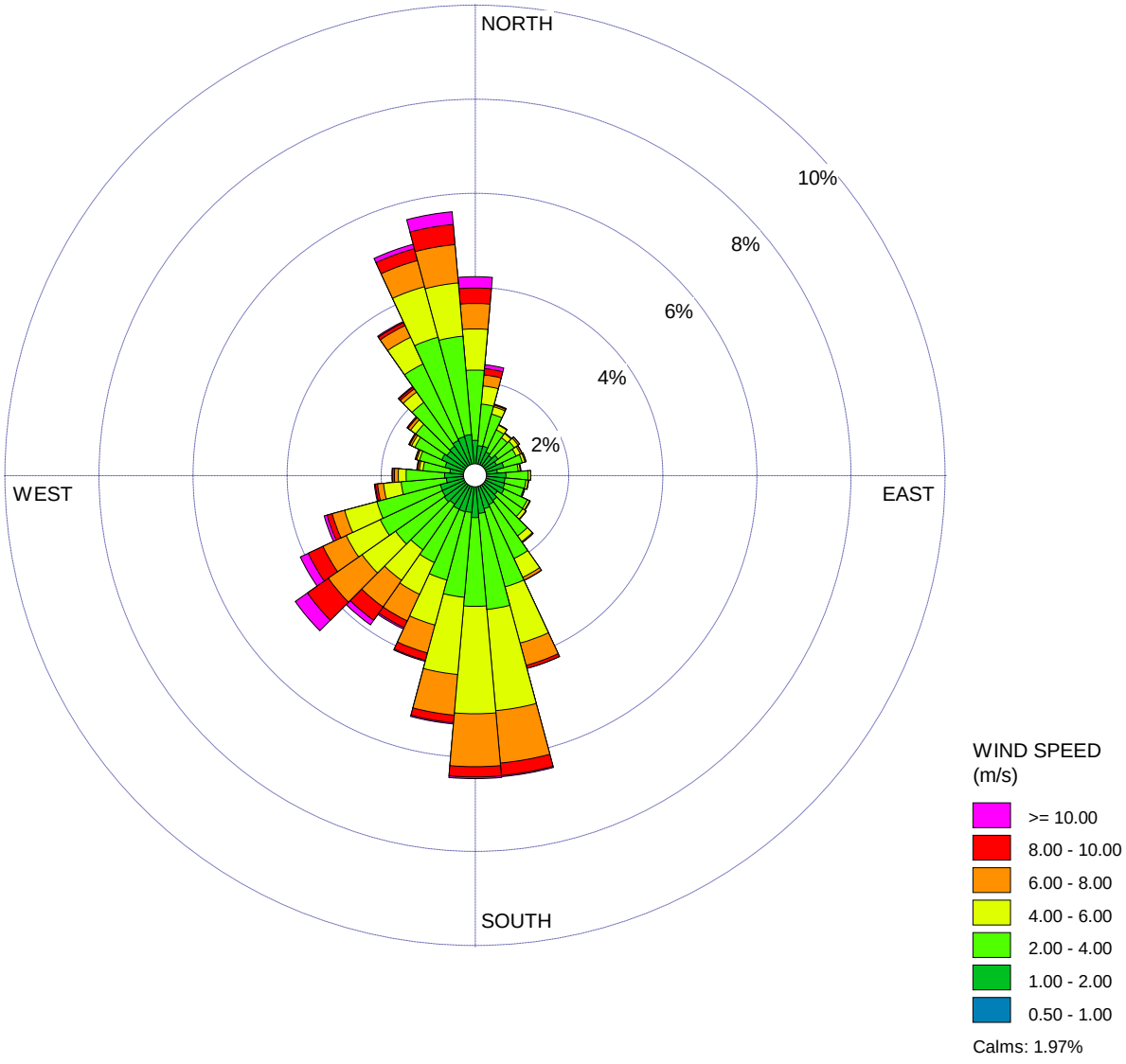
Appendix 3.1A
Quarterly Wind Roses and Wind Frequency Distributions

WIND ROSE PLOT:

Blythe, CA
2009 - 2013 (All Five Years)

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 1/1/2009 - 00:00** **End Date: 12/31/2013 - 16:00**	COMPANY NAME:	
		MODELER:	
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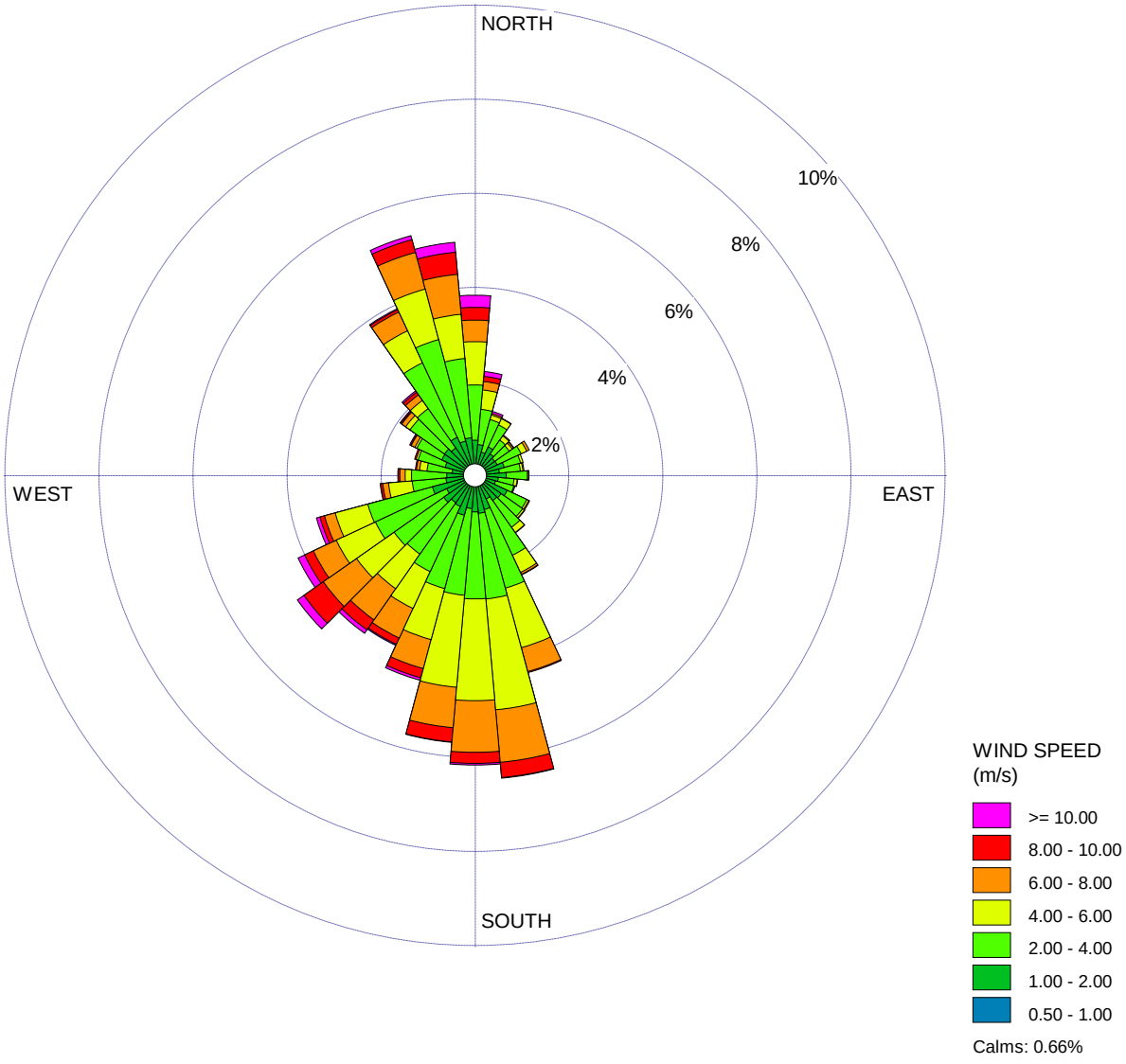
	AVG. WIND SPEED: **3.64 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2009 (All Year)

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 1/1/2009 - 00:00** **End Date: 12/31/2009 - 23:00**	COMPANY NAME:	
		MODELER:	
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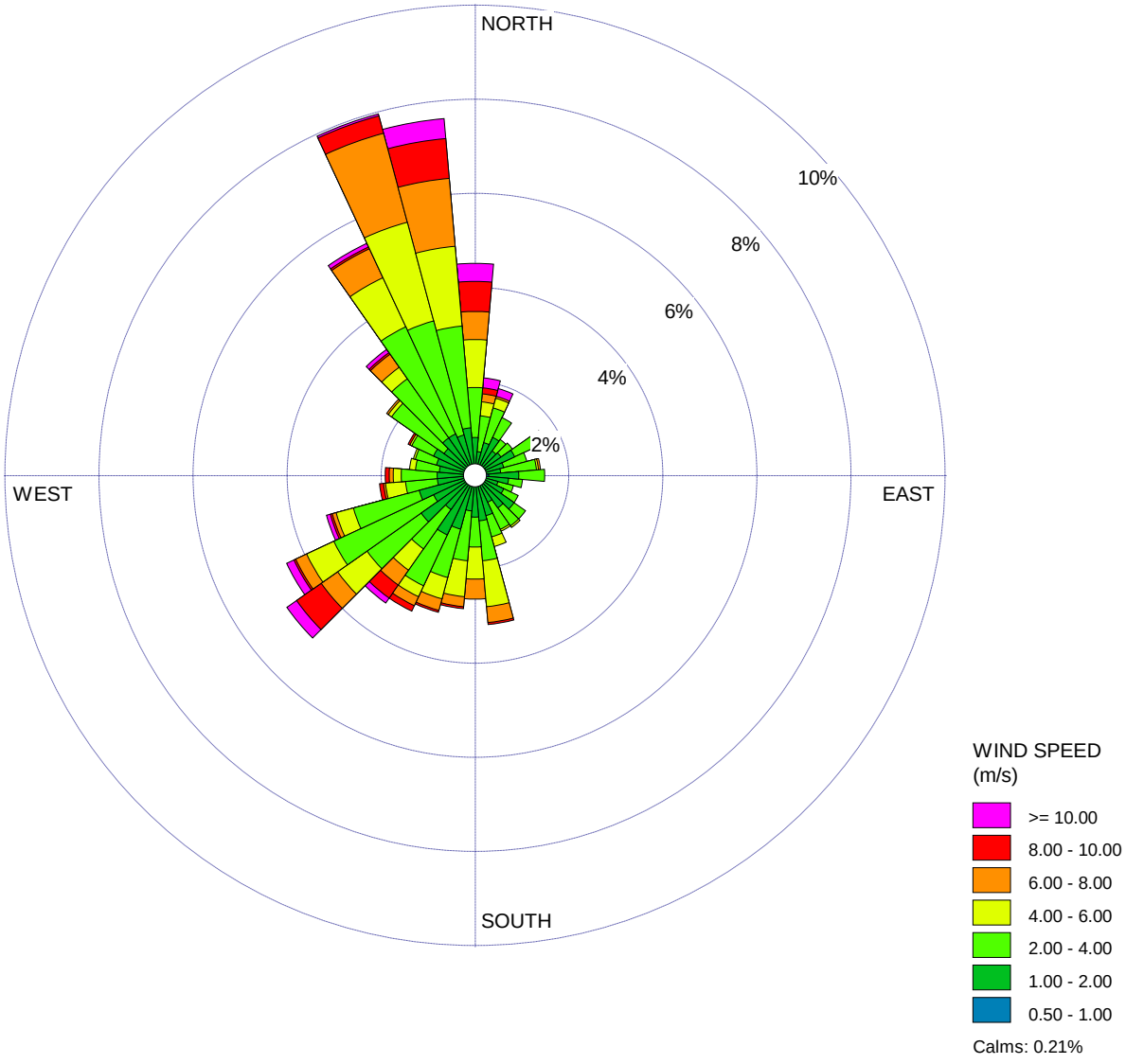
	AVG. WIND SPEED: **3.72 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2009 (1st Quarter)

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 1/1/2009 - 00:00** **End Date: 3/31/2009 - 23:00**	COMPANY NAME:	
		MODELER:	
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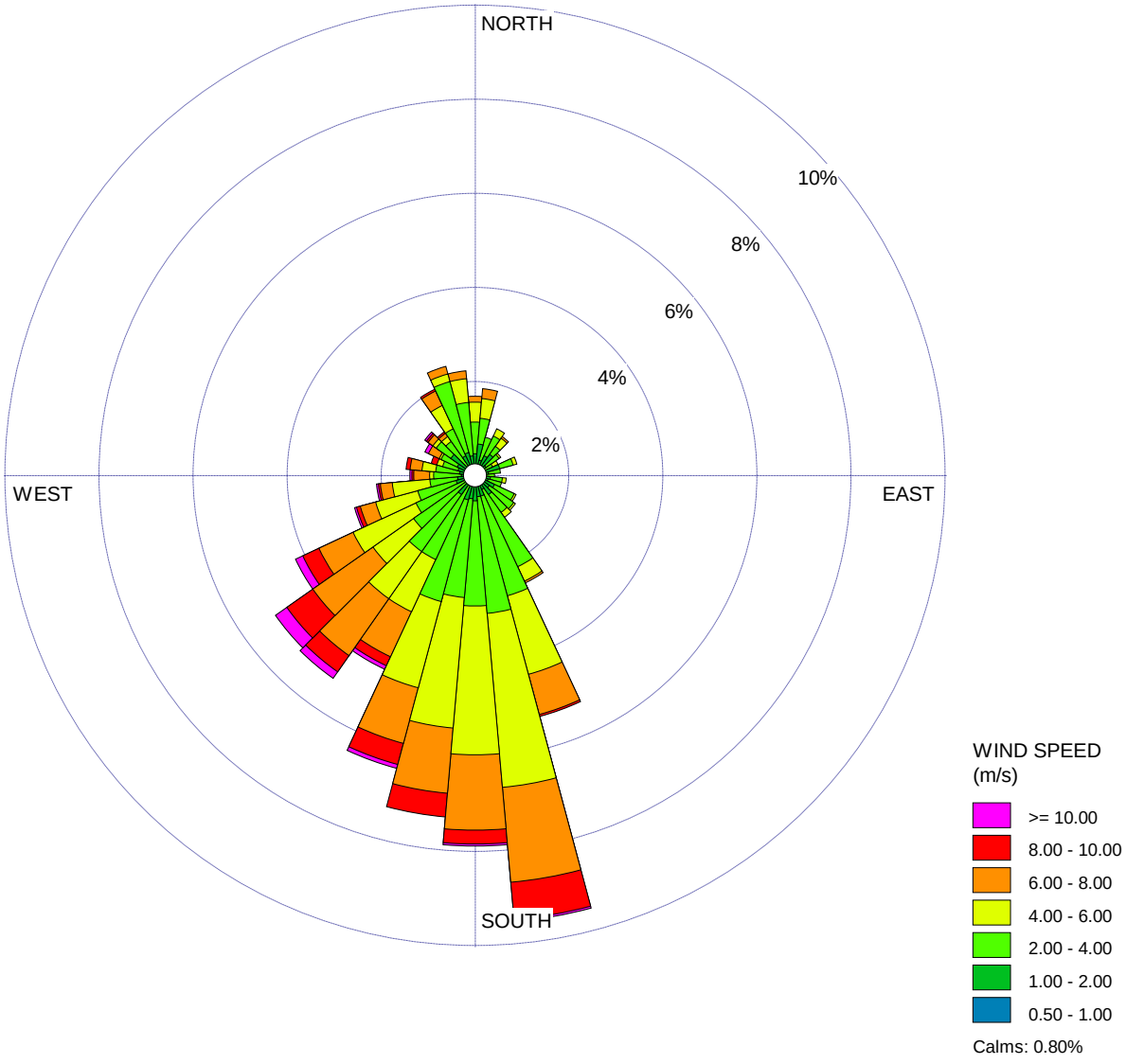
	AVG. WIND SPEED: **3.42 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2009 (2nd Quarter)

DISPLAY:

Wind Speed
Direction (blowing from)



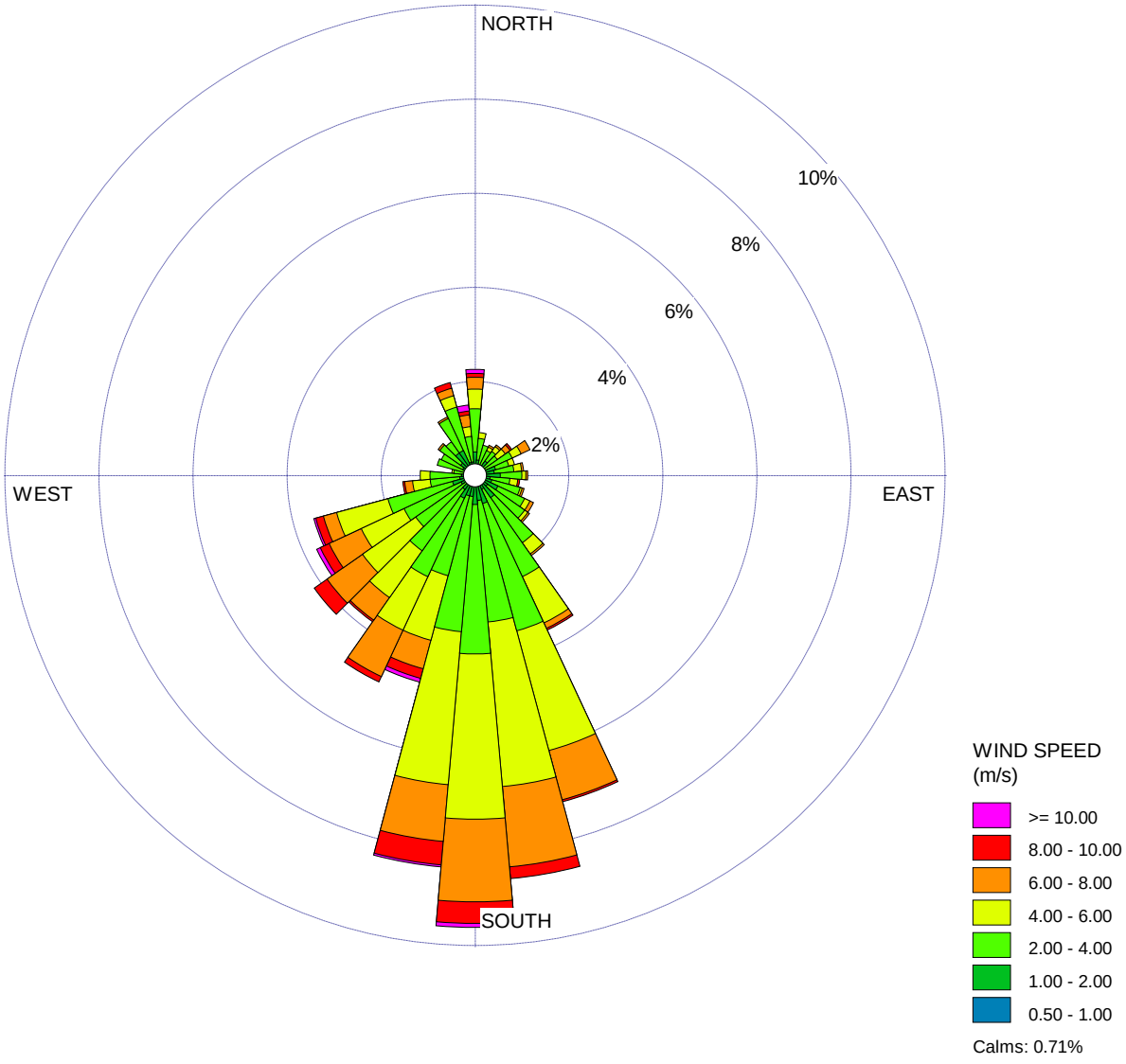
COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 4/1/2009 - 00:00** **End Date: 6/30/2009 - 23:00**	COMPANY NAME:	
		MODELER:	
	CALM WINDS: **0.80%**	TOTAL COUNT: **2180 hrs.**	
	AVG. WIND SPEED: **4.22 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2009 (3rd Quarter)

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 7/1/2009 - 00:00** **End Date: 9/30/2009 - 23:00**	COMPANY NAME:	
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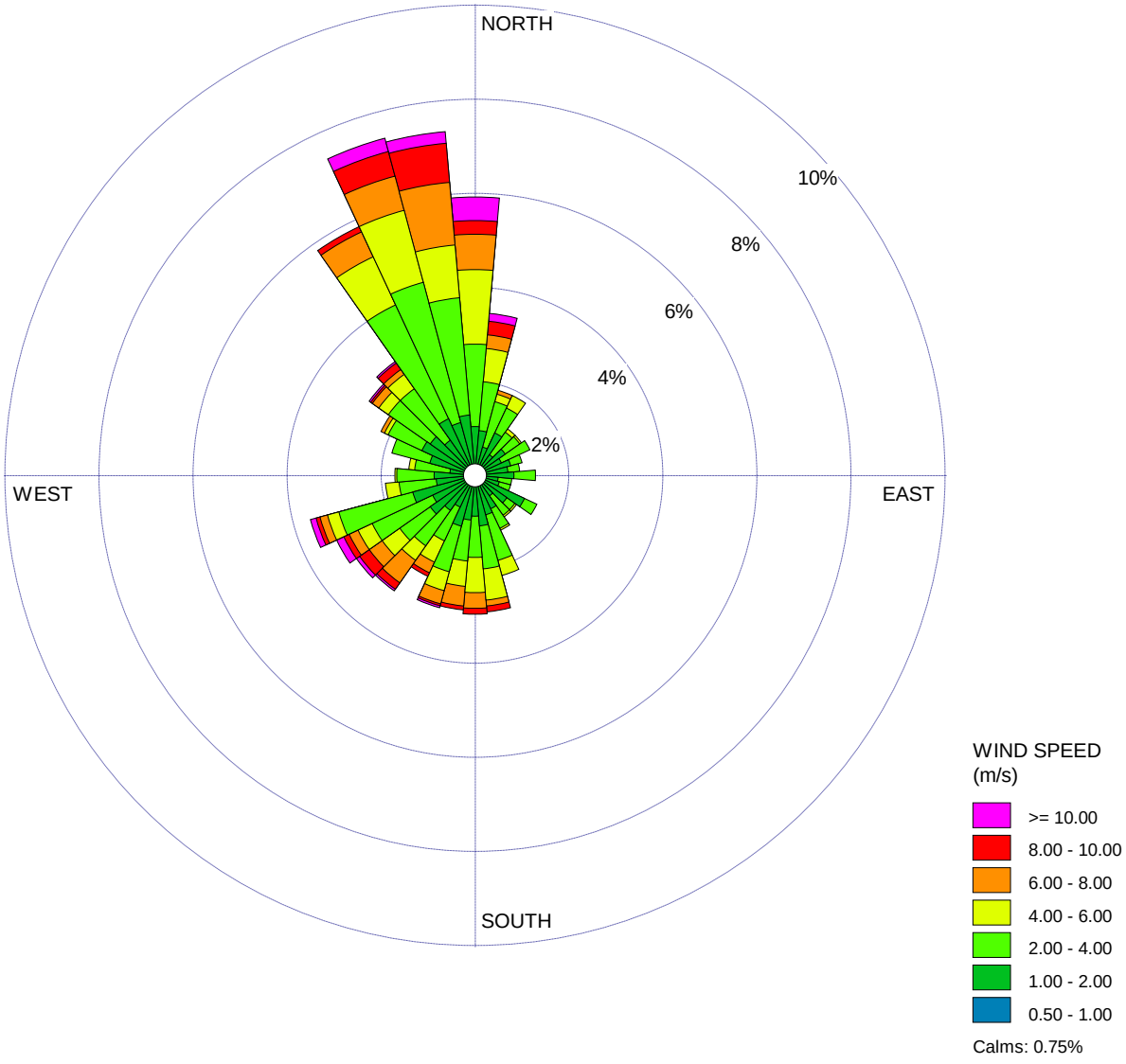
	AVG. WIND SPEED: **3.96 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2009 (4th Quarter)

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 10/1/2009 - 00:00** **End Date: 12/31/2009 - 23:00**	COMPANY NAME:	
		MODELER:	
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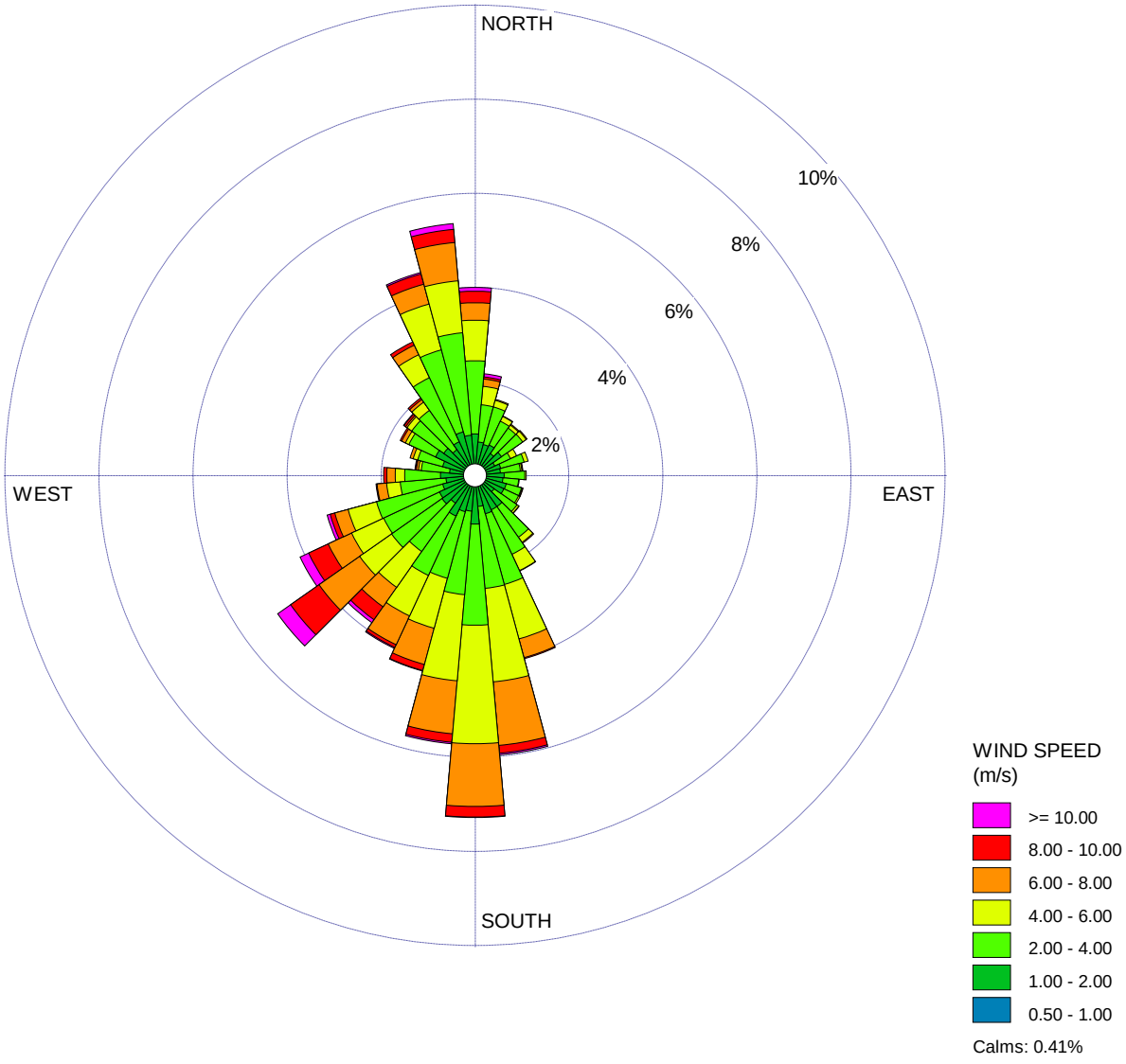
	AVG. WIND SPEED: **3.30 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2010 (All Year)

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 1/1/2010 - 00:00** **End Date: 12/31/2010 - 23:00**	COMPANY NAME:	
		MODELER:	
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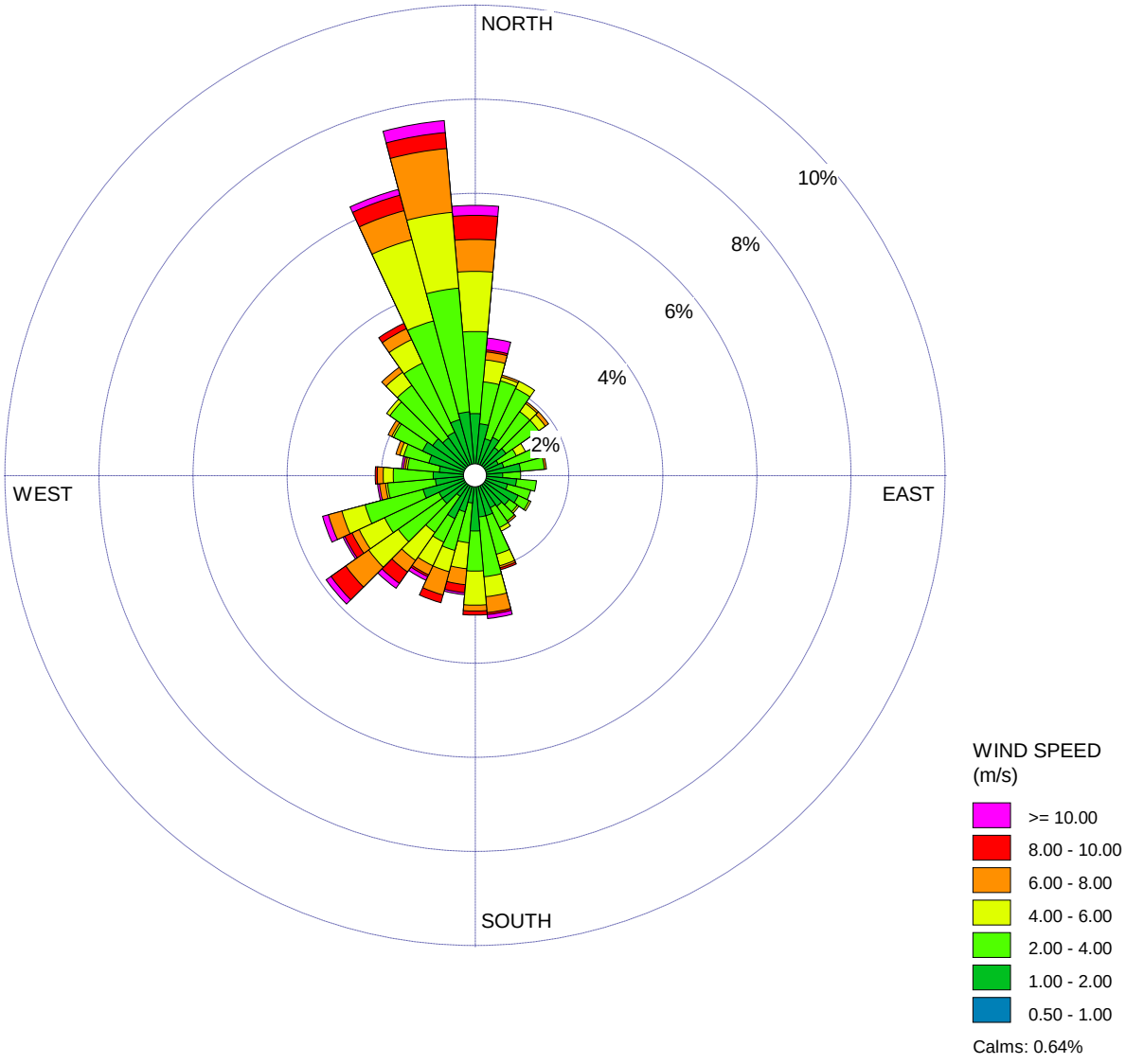
	AVG. WIND SPEED: **3.62 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2010 (1st Quarter)

DISPLAY:

Wind Speed
Direction (blowing from)



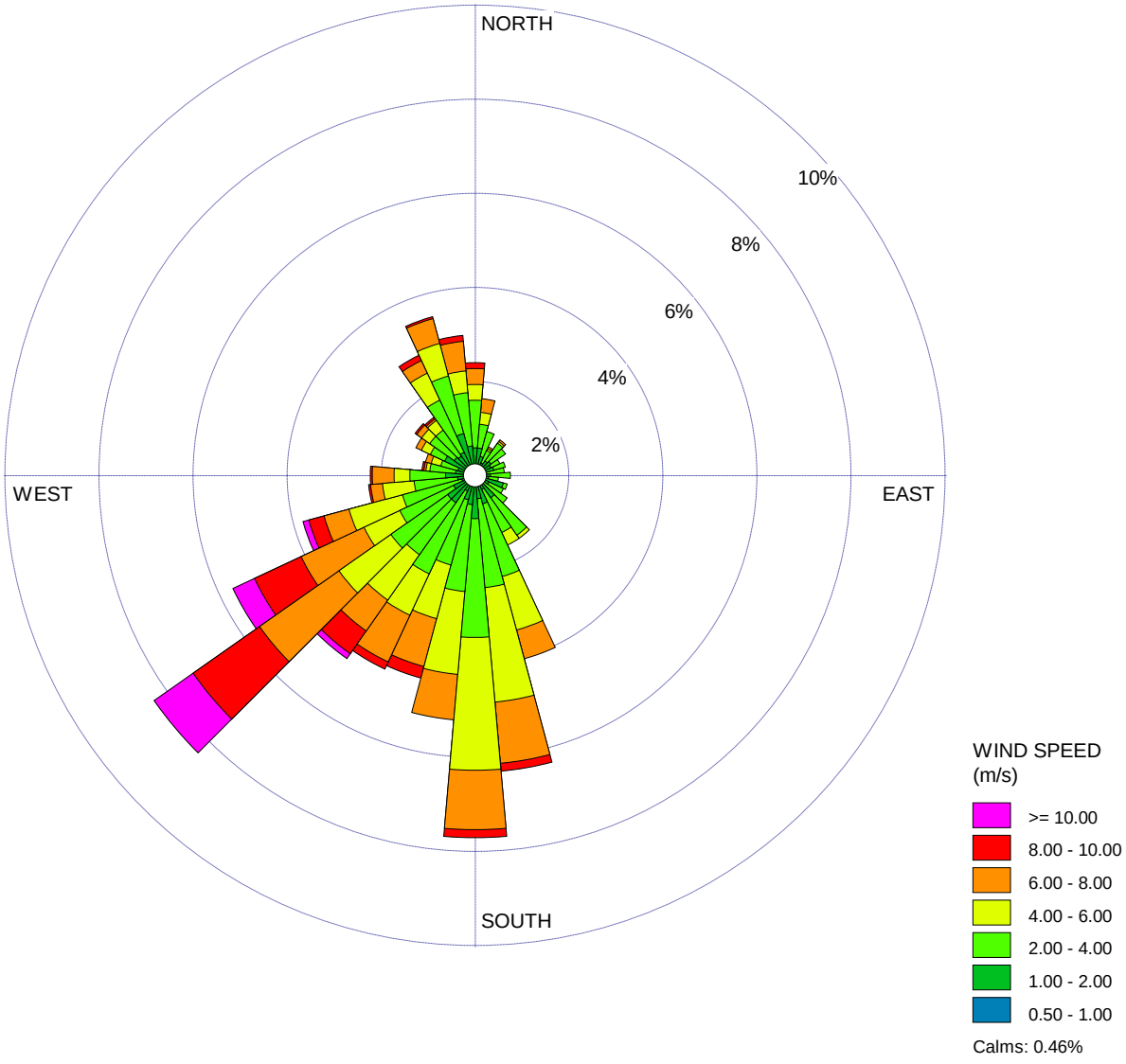
COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 1/1/2010 - 00:00** **End Date: 3/31/2010 - 23:00**	COMPANY NAME:	
		MODELER:	
	CALM WINDS: **0.64%**	TOTAL COUNT: **2159 hrs.**	
	AVG. WIND SPEED: **3.22 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2010 (2nd Quarter)

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 4/1/2010 - 00:00** **End Date: 6/30/2010 - 23:00**	COMPANY NAME:	
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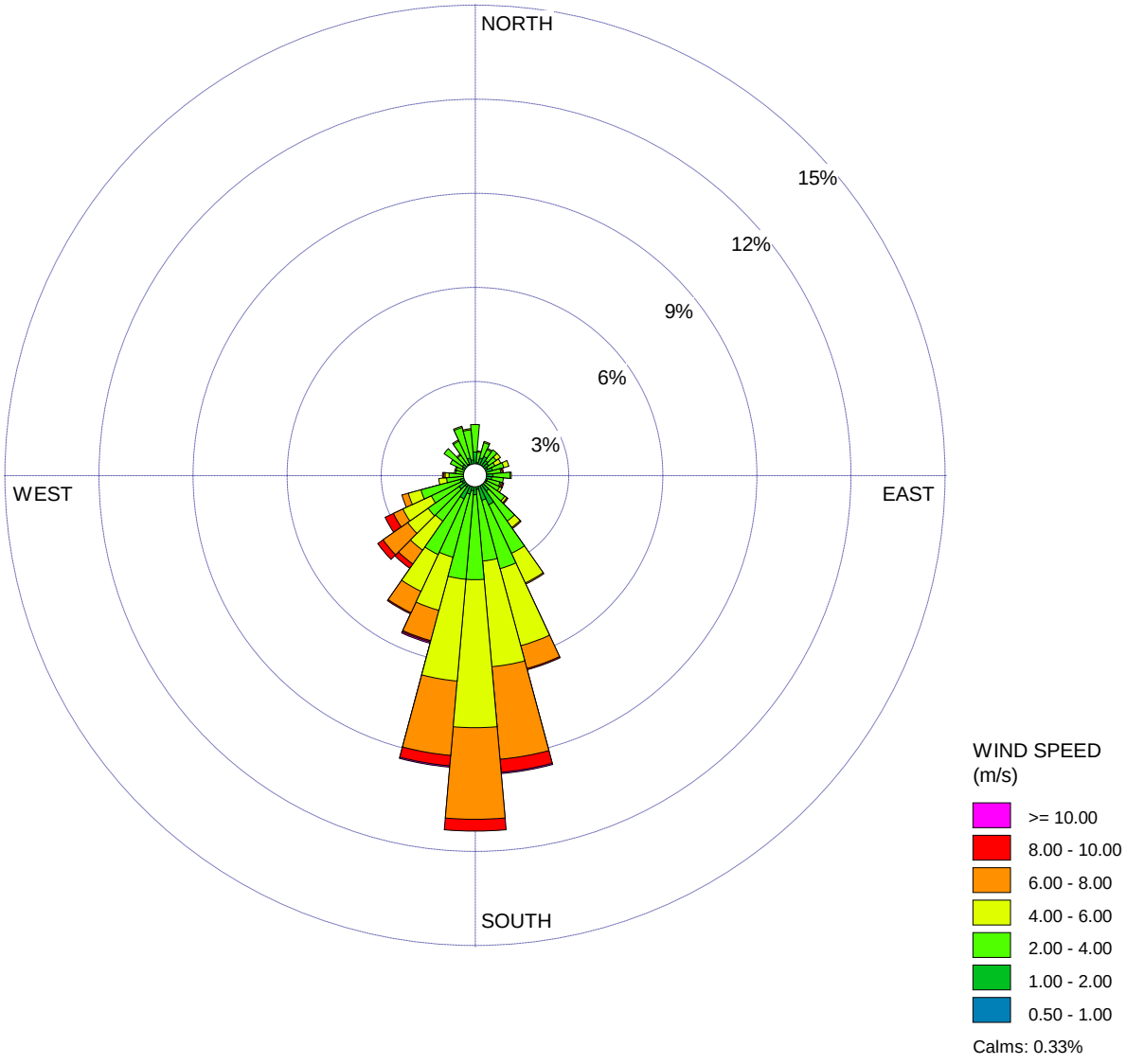
	AVG. WIND SPEED: **4.18 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2010 (3rd Quarter)

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 7/1/2010 - 00:00** **End Date: 9/30/2010 - 23:00**	COMPANY NAME:	
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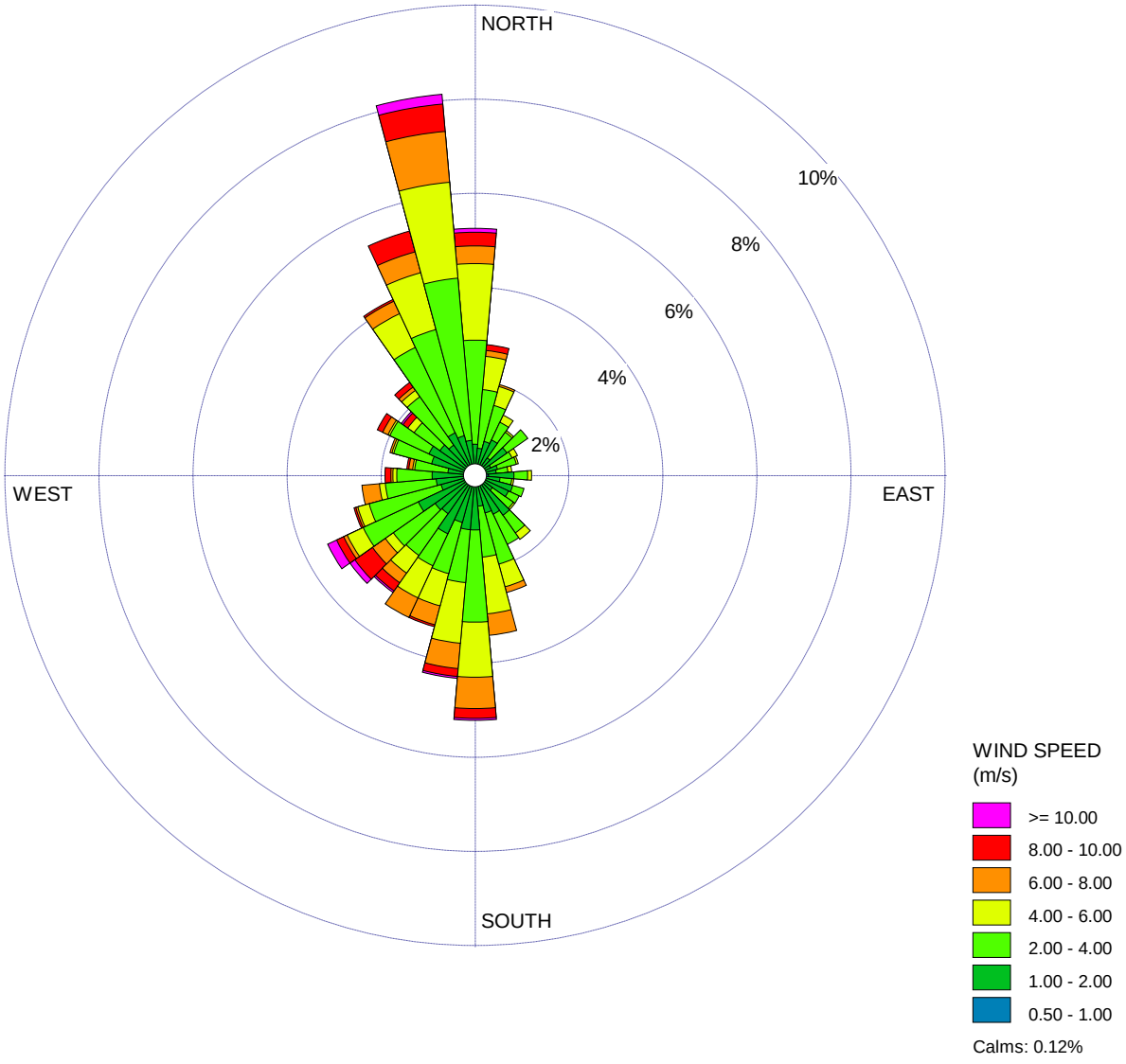
	AVG. WIND SPEED: **3.83 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2010 (4th Quarter)

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 10/1/2010 - 00:00** **End Date: 12/31/2010 - 23:00**	COMPANY NAME:	
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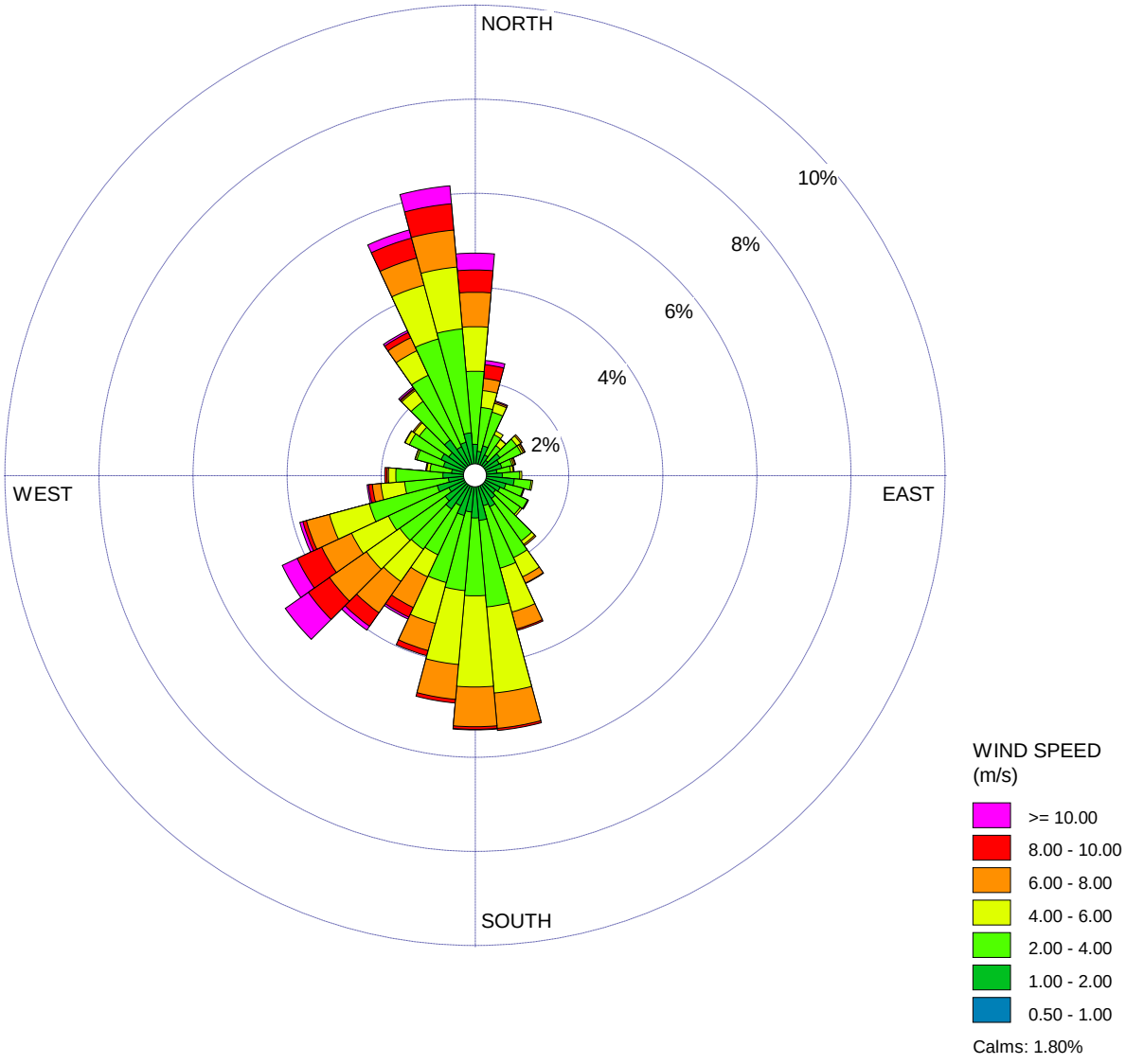
	AVG. WIND SPEED: **3.26 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2011 (All Year)

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 1/1/2011 - 00:00** **End Date: 12/31/2011 - 23:00**	COMPANY NAME:	
		MODELER:	
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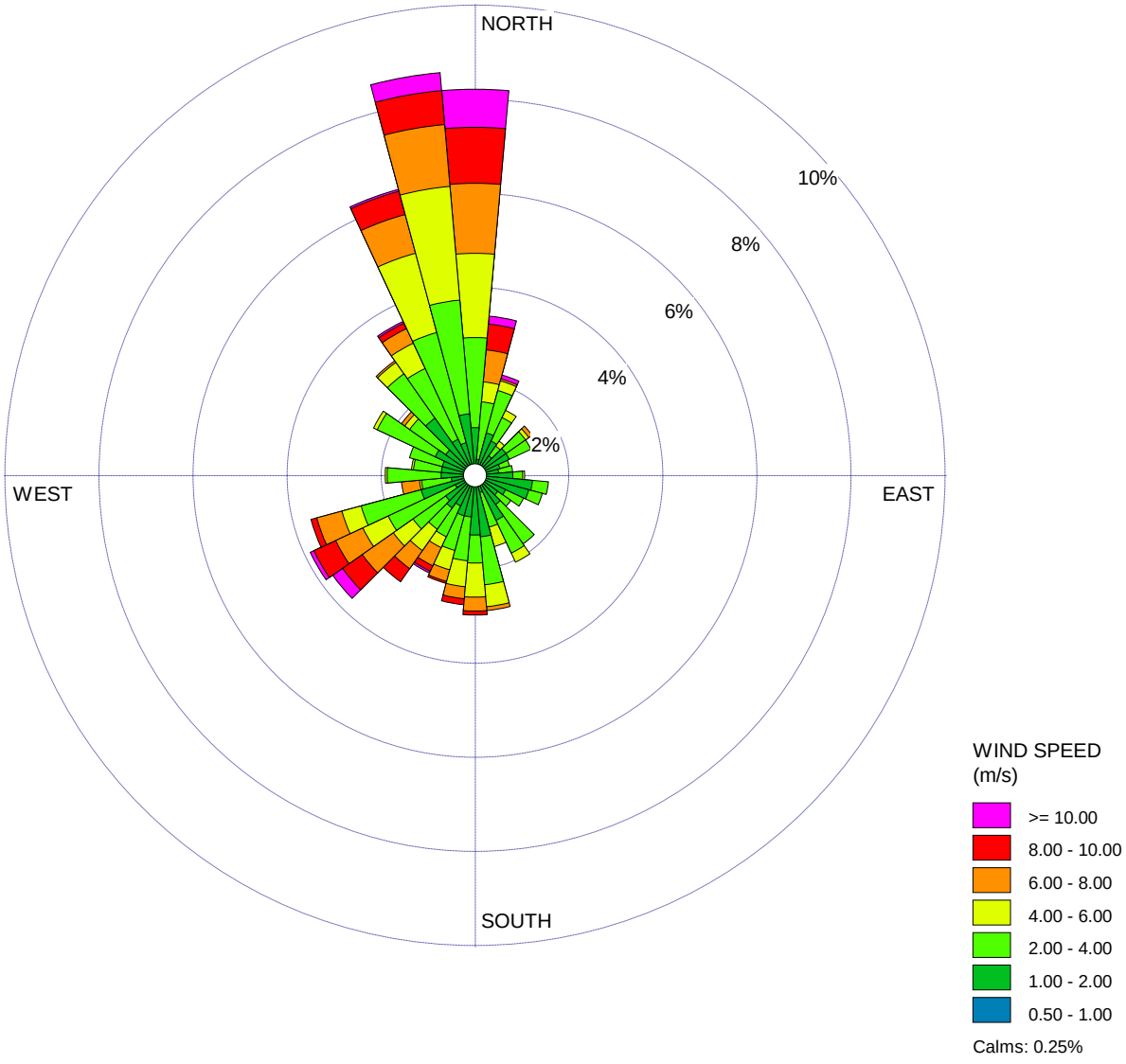
	AVG. WIND SPEED: **3.73 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2011 (1st Quarter)

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 1/1/2011 - 00:00** **End Date: 3/31/2011 - 23:00**	COMPANY NAME:	
		MODELER:	
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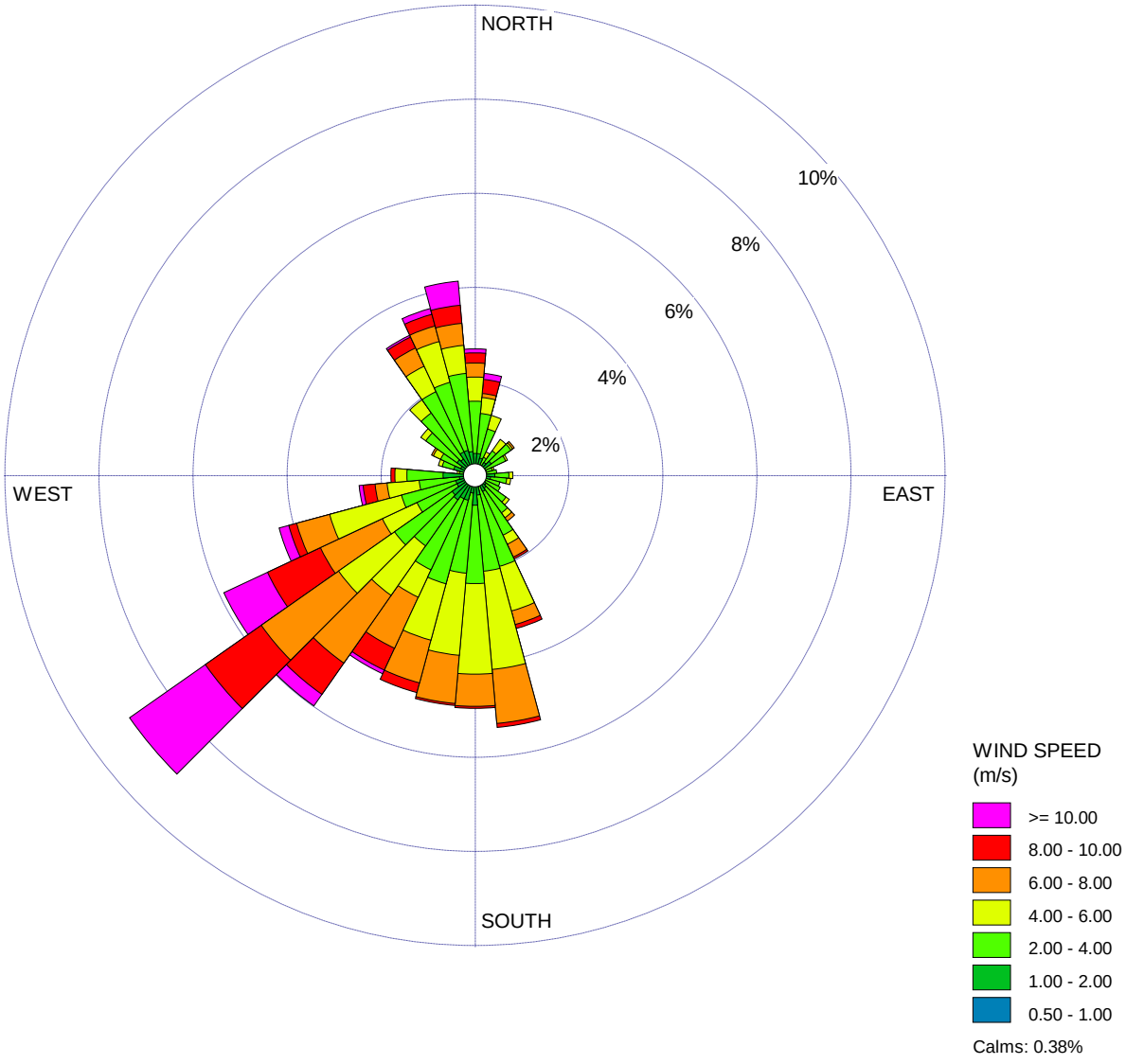
	AVG. WIND SPEED: **3.58 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2011 (2nd Quarter)

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 4/1/2011 - 00:00** **End Date: 6/30/2011 - 23:00**	COMPANY NAME:	
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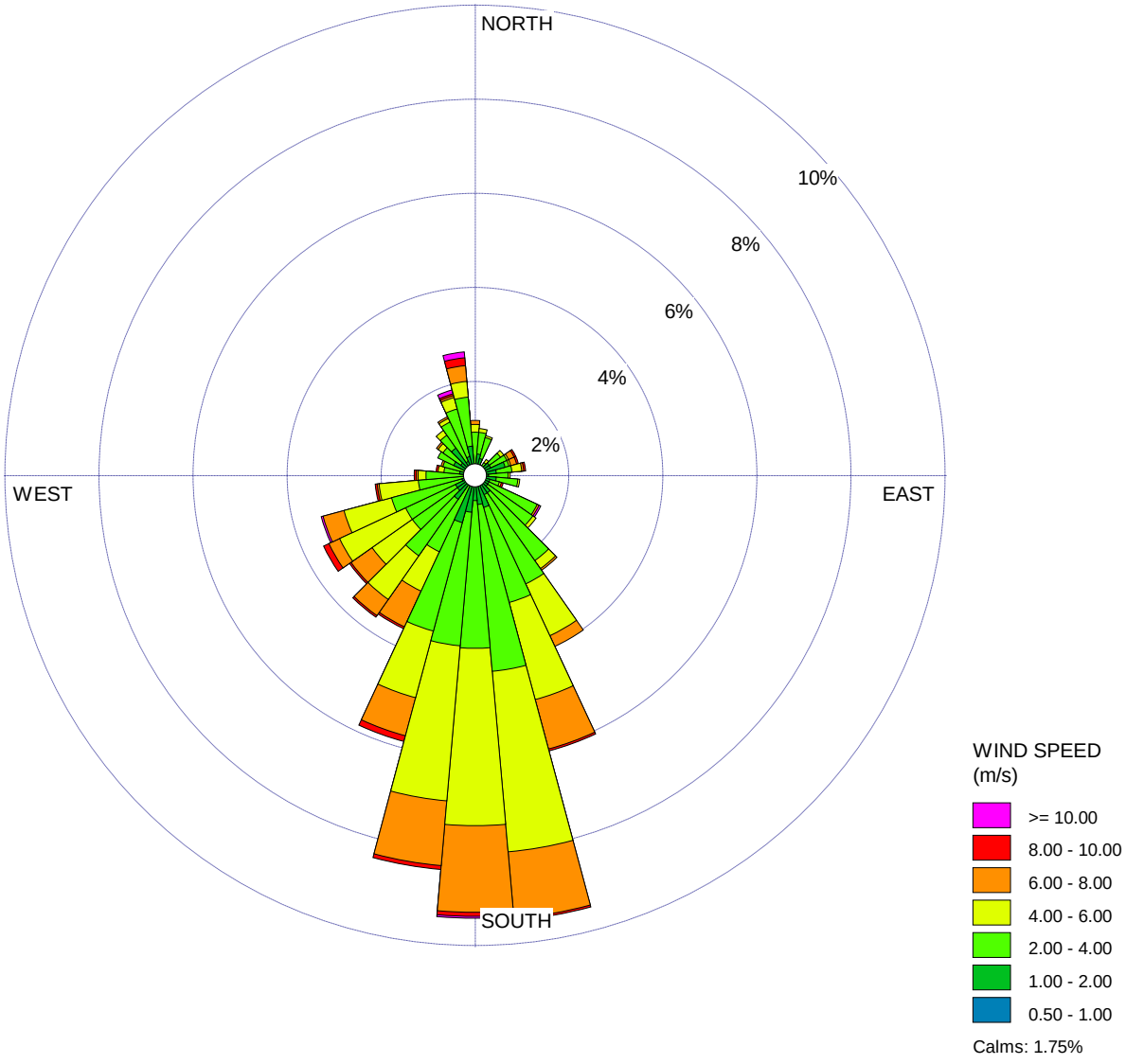
	AVG. WIND SPEED: **4.57 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2011 (3rd Quarter)

DISPLAY:

Wind Speed
Direction (blowing from)



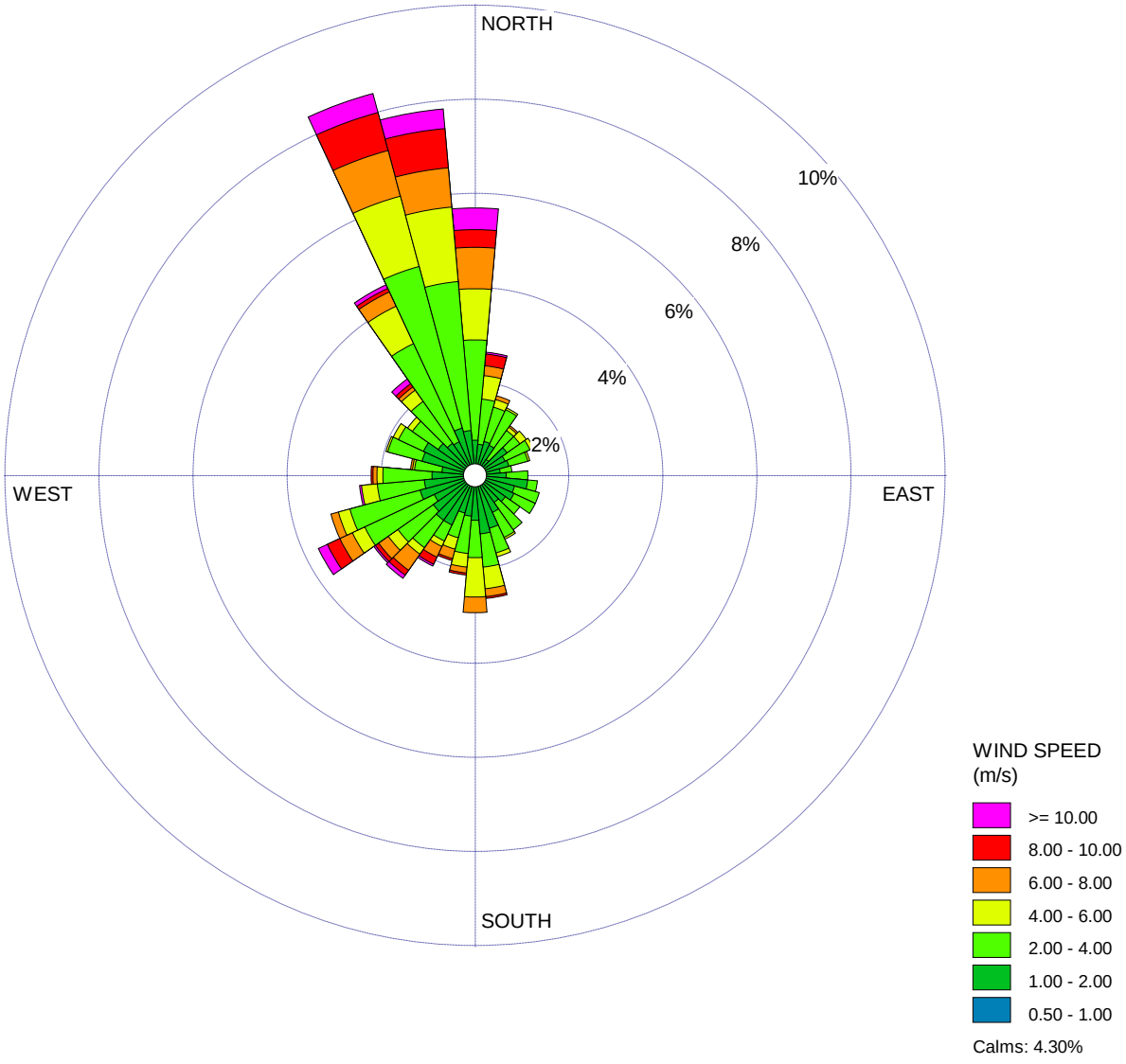
COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 7/1/2011 - 00:00** **End Date: 9/30/2011 - 23:00**	COMPANY NAME:	
		MODELER:	
	CALM WINDS: **1.75%**	TOTAL COUNT: **2197 hrs.**	
	AVG. WIND SPEED: **3.71 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2011 (4th Quarter)

DISPLAY:

Wind Speed
Direction (blowing from)



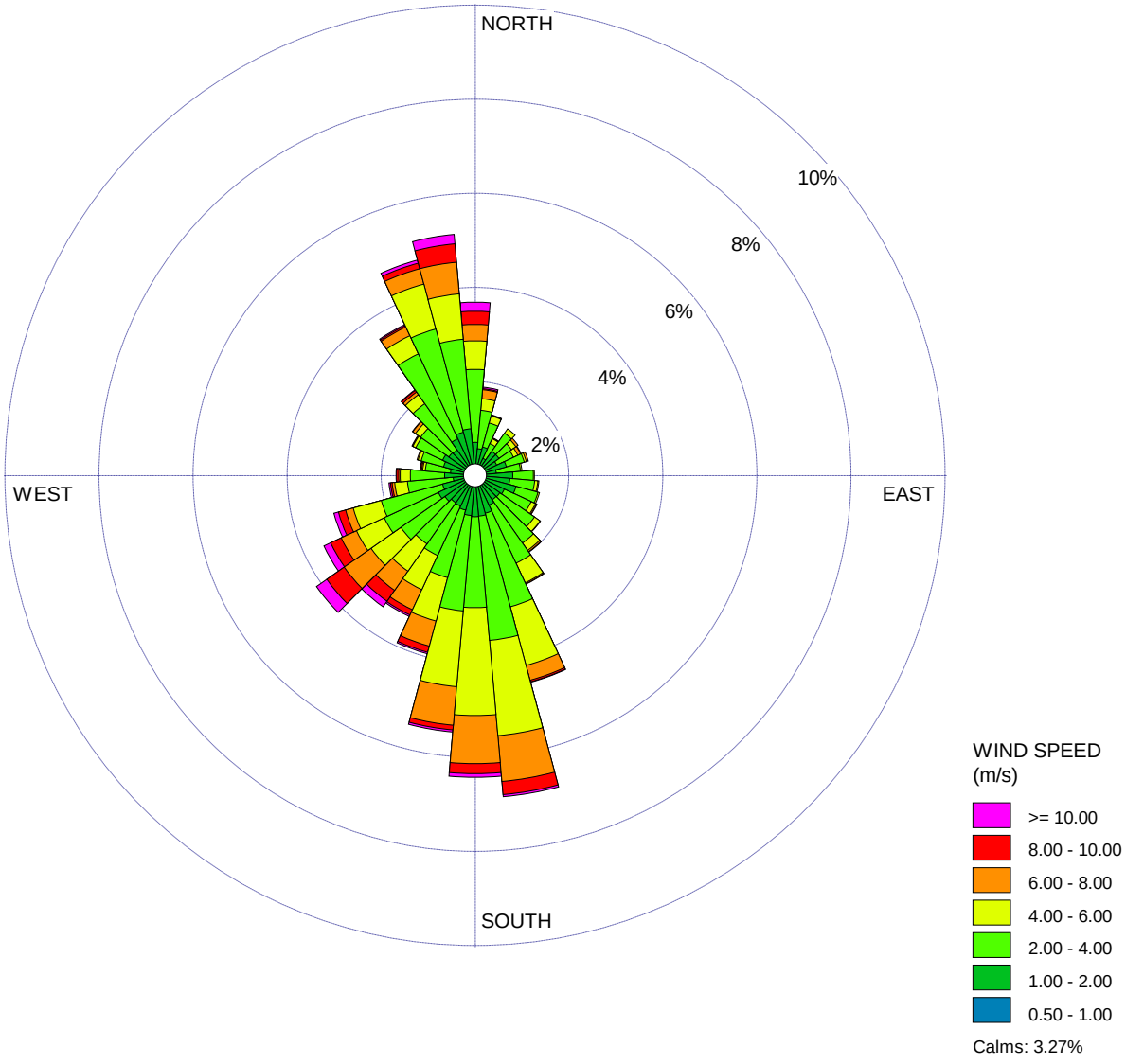
COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 10/1/2011 - 00:00** **End Date: 12/31/2011 - 23:00**	COMPANY NAME:	
		MODELER:	
	CALM WINDS: **4.30%**	TOTAL COUNT: **2200 hrs.**	
	AVG. WIND SPEED: **3.08 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2012 (All Year)

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 1/1/2012 - 00:00** **End Date: 12/31/2012 - 23:00**	COMPANY NAME:	
		MODELER:	
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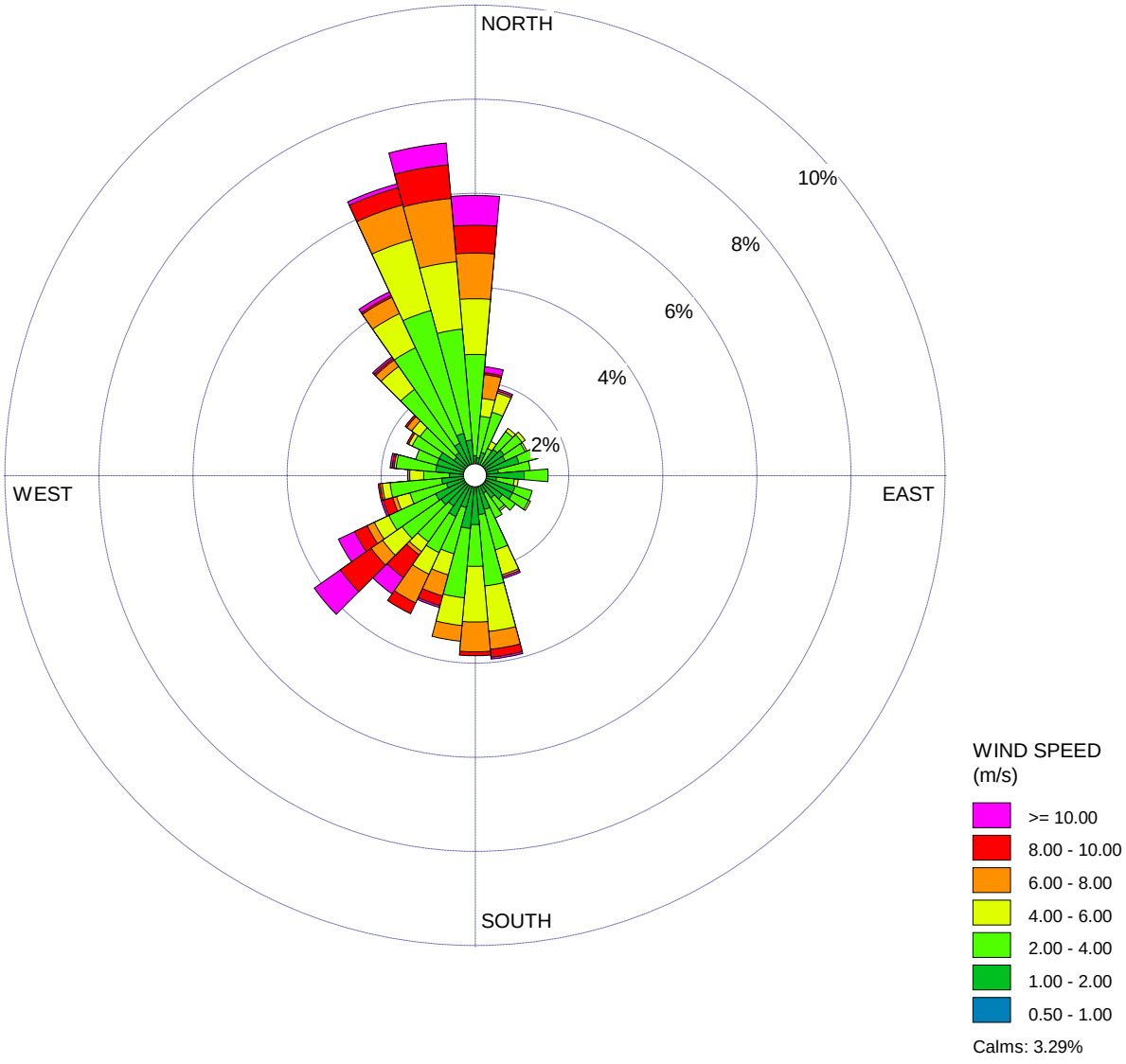
	AVG. WIND SPEED: **3.44 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2012 (1st Quarter)

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 1/1/2012 - 00:00** **End Date: 3/31/2012 - 23:00**	COMPANY NAME:	
		MODELER:	
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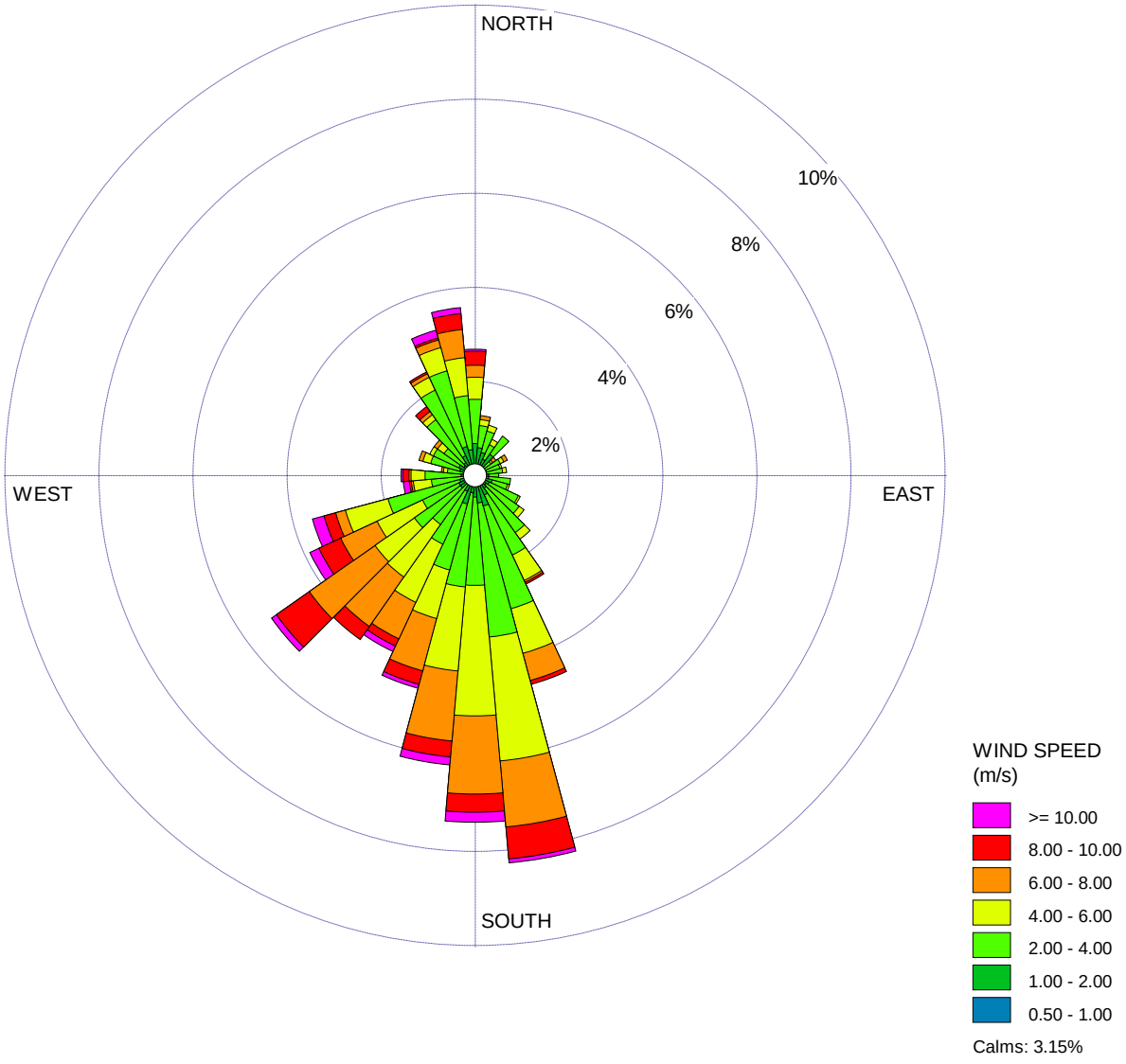
	AVG. WIND SPEED: **3.61 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2012 (2nd Quarter)

DISPLAY:

Wind Speed
Direction (blowing from)



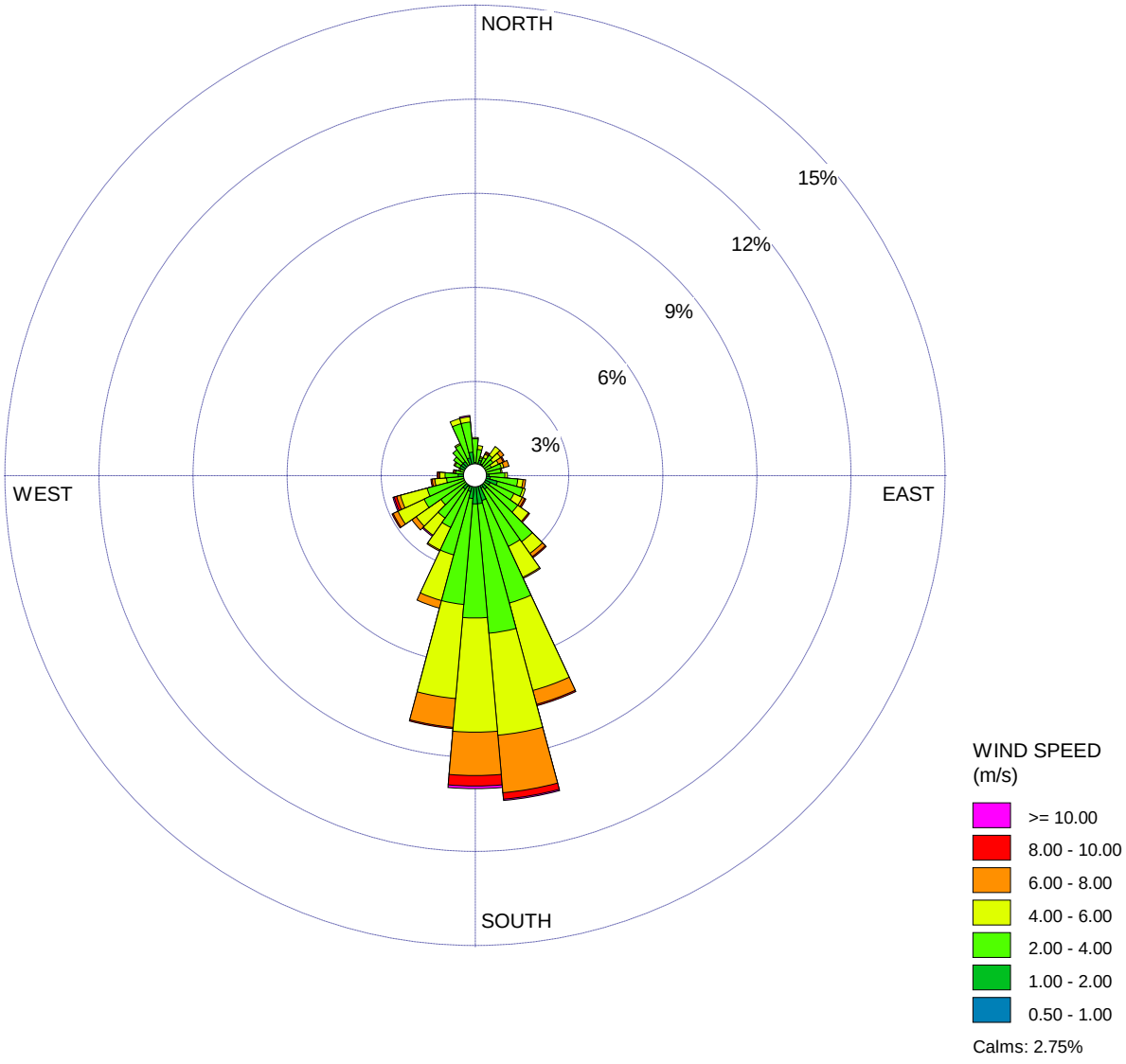
COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 4/1/2012 - 00:00** **End Date: 6/30/2012 - 23:00**	COMPANY NAME:	
		MODELER:	
	CALM WINDS: **3.15%**	TOTAL COUNT: **2153 hrs.**	
	AVG. WIND SPEED: **4.11 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2012 (3rd Quarter)

DISPLAY:

Wind Speed
Direction (blowing from)



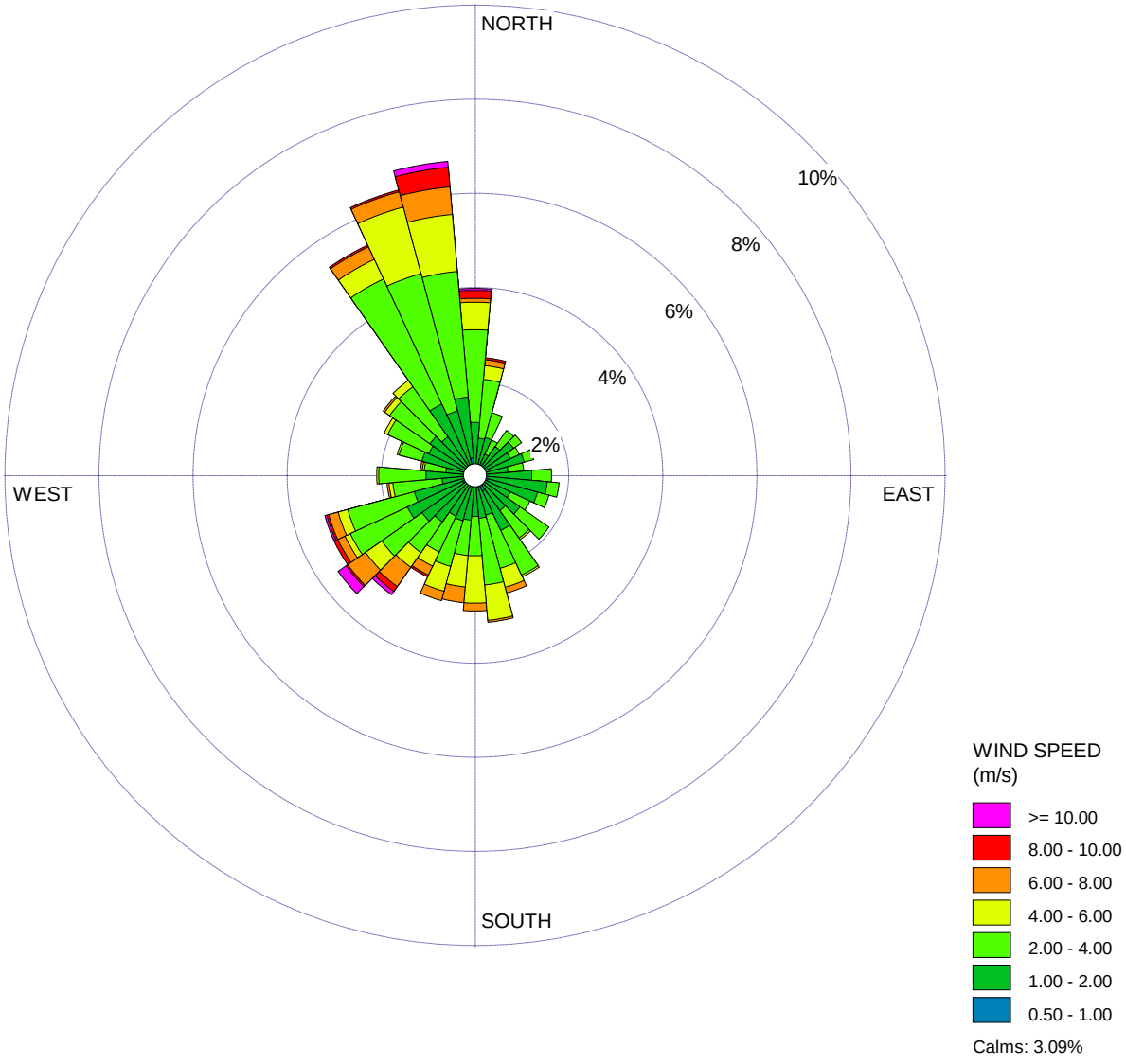
COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 7/1/2012 - 00:00** **End Date: 9/30/2012 - 23:00**	COMPANY NAME:	
		MODELER:	
	CALM WINDS: **2.75%**	TOTAL COUNT: **2199 hrs.**	
	AVG. WIND SPEED: **3.43 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2012 (4th Quarter)

DISPLAY:

Wind Speed
Direction (blowing from)



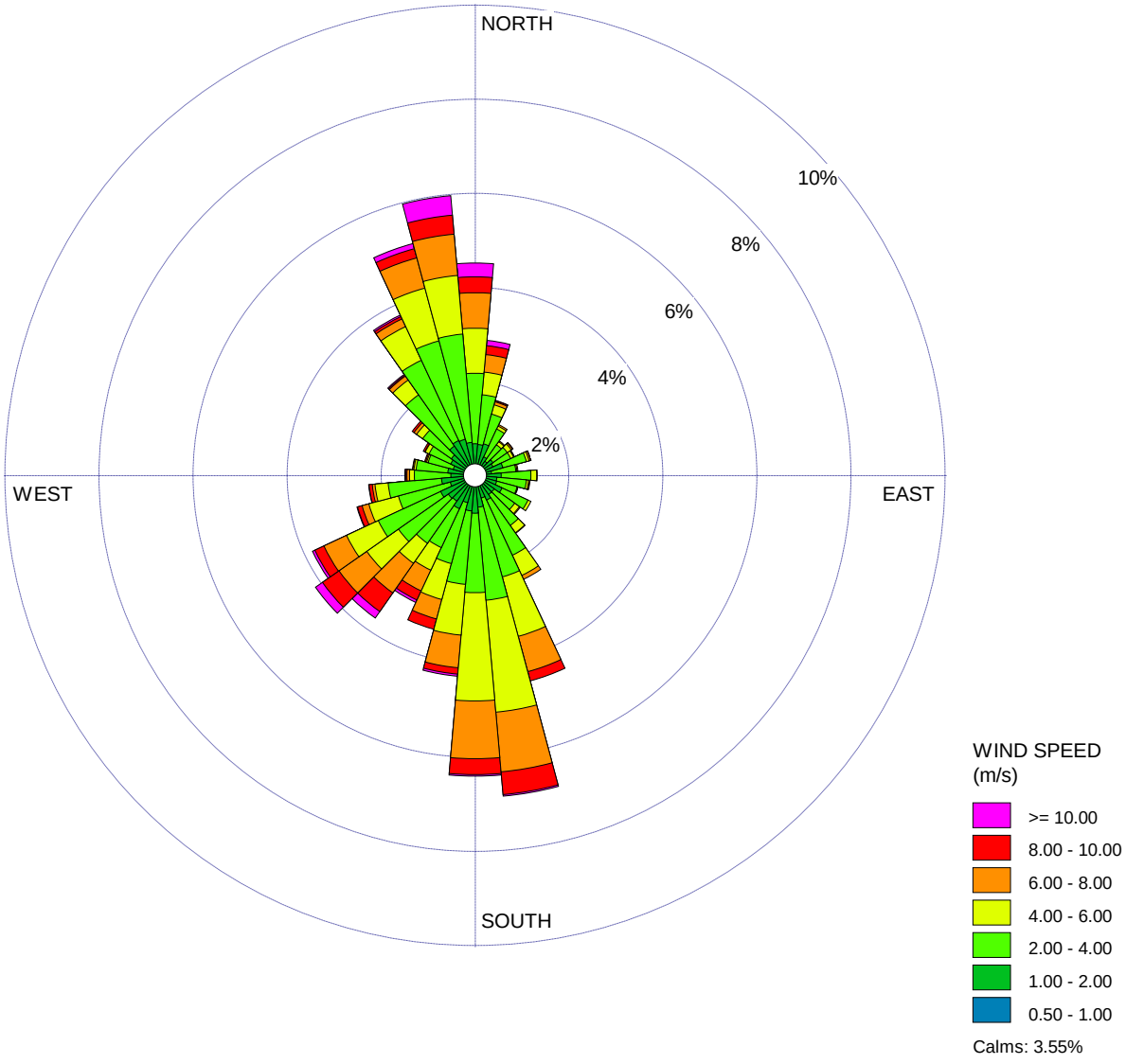
COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 10/1/2012 - 00:00** **End Date: 12/31/2012 - 23:00**	COMPANY NAME:	
		MODELER:	
	CALM WINDS: **3.09%**	TOTAL COUNT: **2196 hrs.**	
	AVG. WIND SPEED: **2.61 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2013 (All Year)

DISPLAY:

Wind Speed
Direction (blowing from)



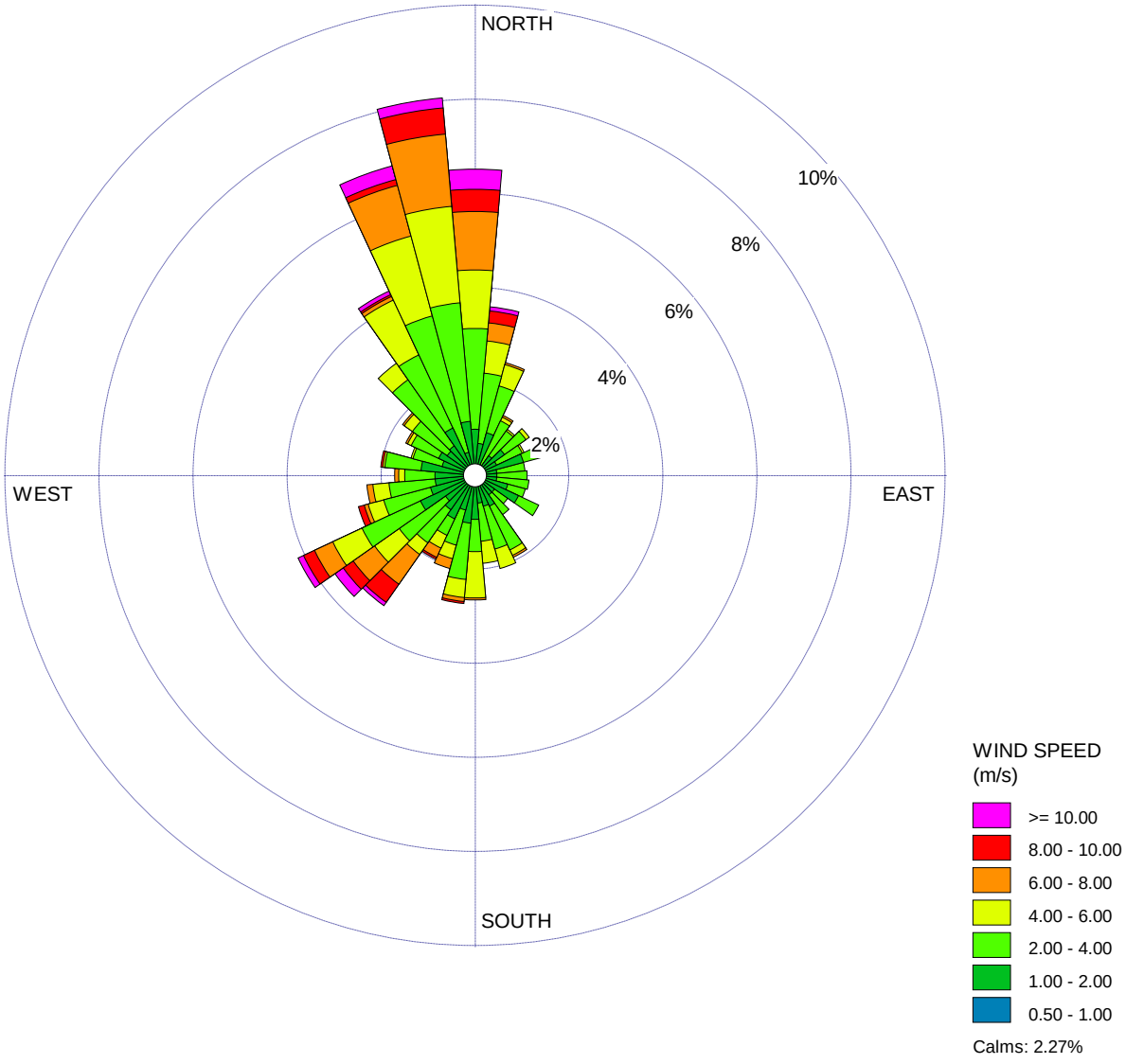
COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 1/1/2013 - 00:00** **End Date: 12/31/2013 - 16:00**	COMPANY NAME:	
		MODELER:	
	CALM WINDS: **3.55%**	TOTAL COUNT: **8698 hrs.**	
	AVG. WIND SPEED: **3.69 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2013 (1st Quarter)

DISPLAY:

Wind Speed
Direction (blowing from)



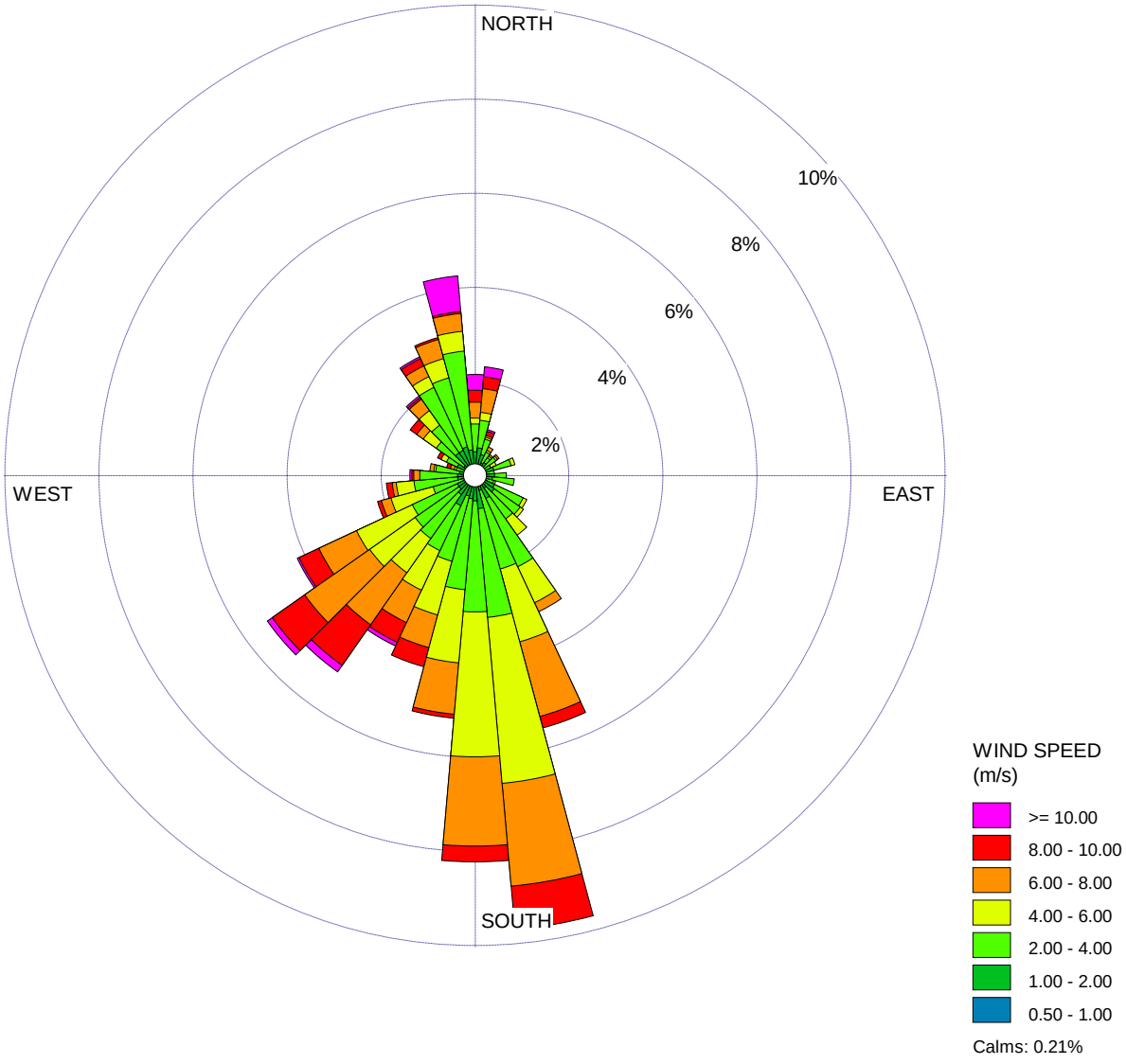
COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 1/1/2013 - 00:00** **End Date: 3/31/2013 - 23:00**	COMPANY NAME:	
		MODELER:	
	CALM WINDS: **2.27%**	TOTAL COUNT: **2142 hrs.**	
	AVG. WIND SPEED: **3.30 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2013 (2nd Quarter)

DISPLAY:

Wind Speed
Direction (blowing from)



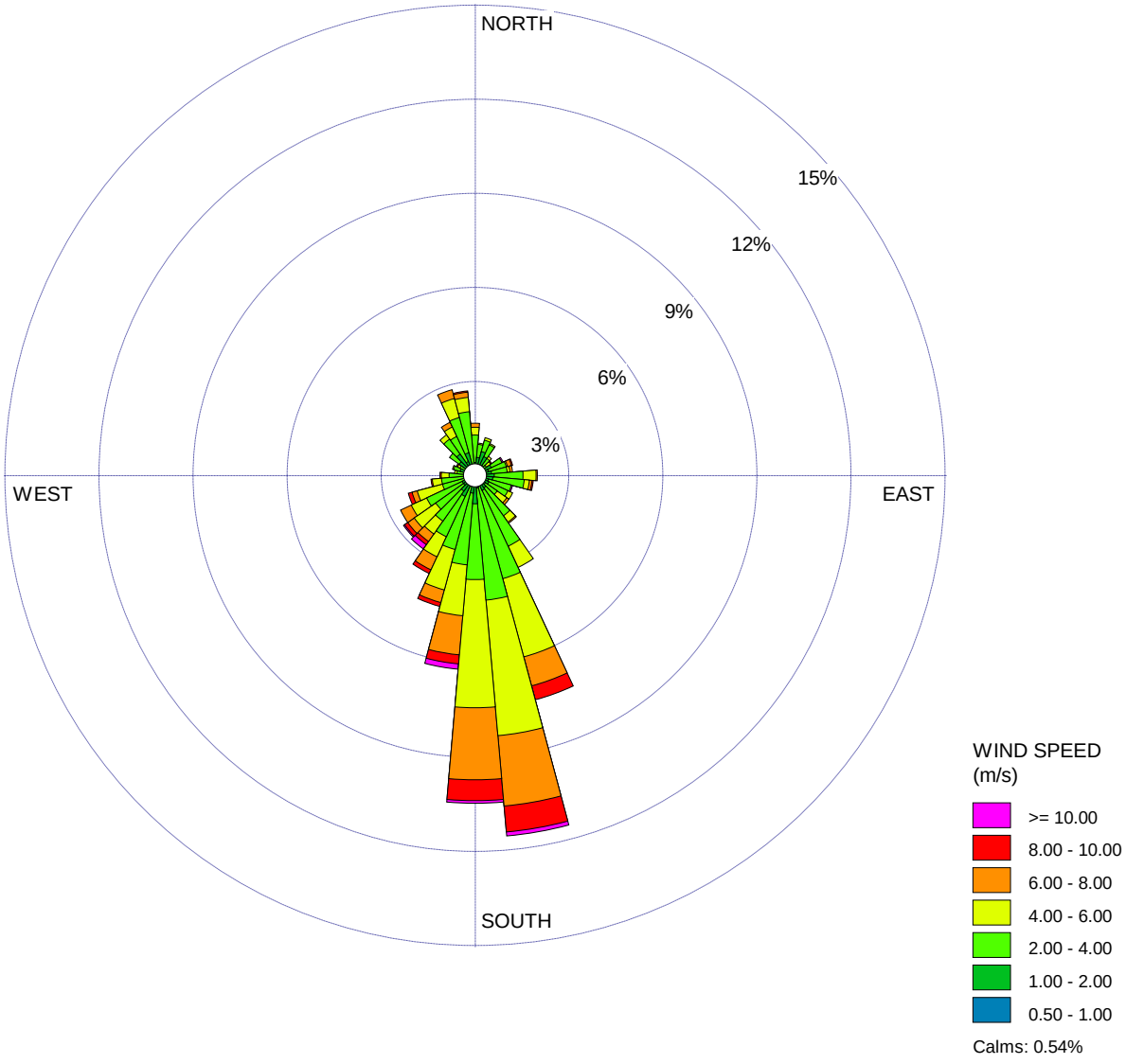
COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 4/1/2013 - 00:00** **End Date: 6/30/2013 - 23:00**	COMPANY NAME:	
		MODELER:	
	CALM WINDS: **0.21%**	TOTAL COUNT: **2180 hrs.**	
	AVG. WIND SPEED: **4.39 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2013 (3rd Quarter)

DISPLAY:

Wind Speed
Direction (blowing from)



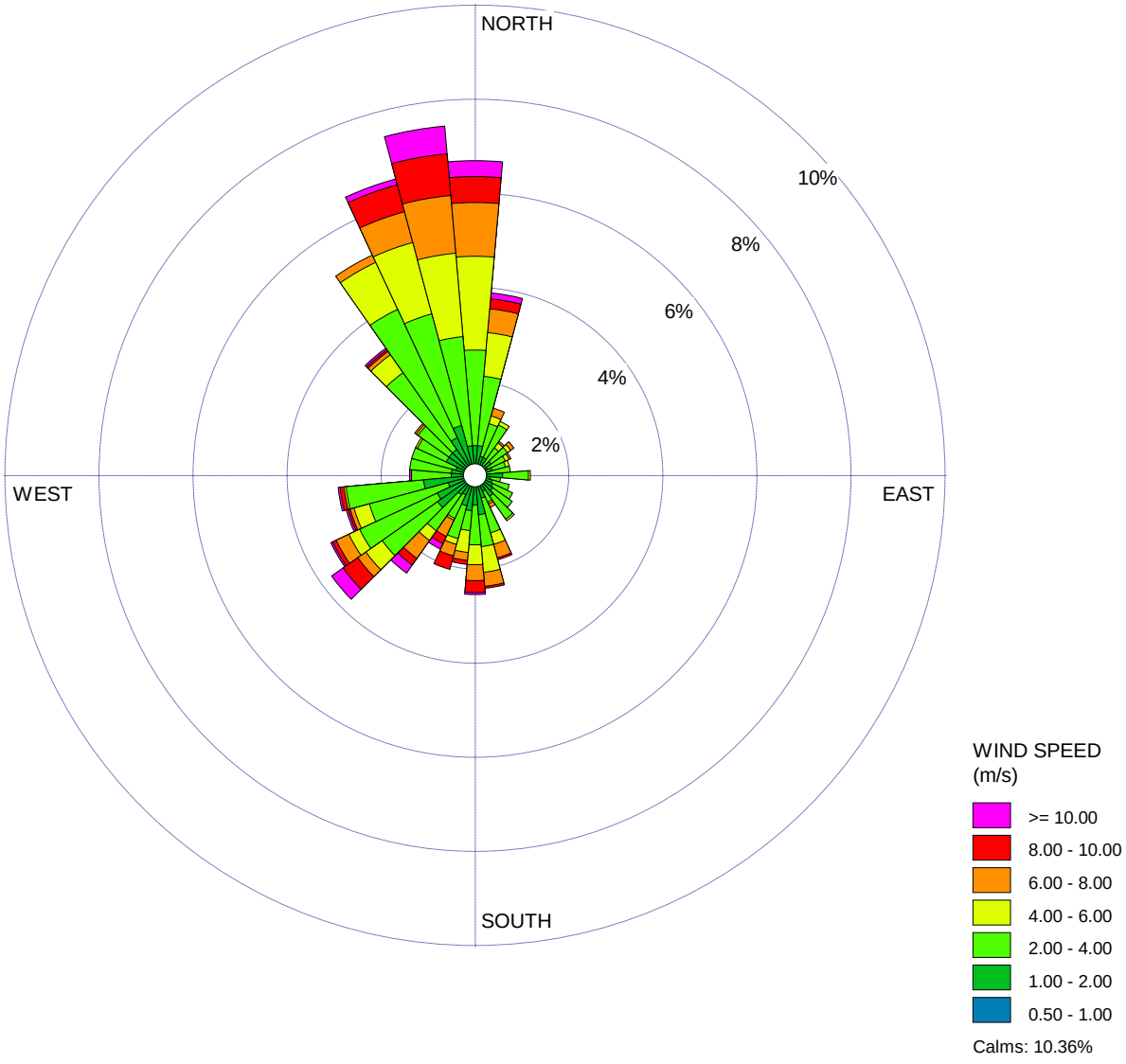
COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 7/1/2013 - 00:00** **End Date: 9/30/2013 - 23:00**	COMPANY NAME:	
		MODELER:	
	CALM WINDS: **0.54%**	TOTAL COUNT: **2207 hrs.**	
	AVG. WIND SPEED: **3.80 m/s**	DATE: **8/5/2014**	PROJECT NO.:

WIND ROSE PLOT:

Blythe, CA
2013 (4th Quarter)

DISPLAY:

Wind Speed
Direction (blowing from)



COMMENTS: Marc Valdez - Sierra Research	DATA PERIOD: **Start Date: 10/1/2013 - 00:00** **End Date: 12/31/2013 - 16:00**	COMPANY NAME:	
		MODELER:	
	CALM WINDS: **10.36%**	TOTAL COUNT: **2169 hrs.**	
	AVG. WIND SPEED: **3.27 m/s**	DATE: **8/5/2014**	PROJECT NO.:

SONORAN ENERGY PROJECT
BLYTHE, CA: 2009 THROUGH 2013
WIND FREQUENCY DISTRIBUTIONS

2009 - 2013 (ALL FIVE YEARS)
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

	Hours by Wind Speed Class							
Directions	**0.5 - 1**	**1 - 2**	**2 - 4**	**4 - 6**	**6 - 8**	**8 - 10**	**>= 10**	**Total**
355 - 5	31	297	653	382	237	143	105	1848
5 - 15	26	253	388	169	103	59	36	1034
15 - 25	23	260	309	71	15	2	8	688
25 - 35	29	213	227	47	6	1	0	523
35 - 45	32	193	205	48	7	0	0	485
45 - 55	29	235	184	43	16	2	0	509
55 - 65	23	201	201	44	15	2	1	487
65 - 75	36	243	179	25	10	2	0	495
75 - 85	27	184	196	18	6	2	0	433
85 - 95	31	259	207	22	2	0	0	521
95 - 105	26	257	195	20	4	2	0	504
105 - 115	44	244	183	7	2	2	1	483
115 - 125	33	268	239	22	5	1	1	569
125 - 135	26	231	287	36	3	2	0	585
135 - 145	33	255	402	66	10	1	0	767
145 - 155	44	260	553	193	28	3	0	1081
155 - 165	40	284	752	541	215	28	1	1861
165 - 175	36	322	895	945	488	116	11	2813
175 - 185	40	355	826	998	492	95	15	2821
185 - 195	30	318	793	719	379	71	12	2322
195 - 205	35	318	657	433	268	72	9	1792
205 - 215	46	305	546	326	271	69	16	1579
215 - 225	31	300	516	346	301	152	52	1698
225 - 235	53	298	554	380	382	238	138	2043
235 - 245	47	292	635	350	238	151	82	1795
245 - 255	36	299	611	311	120	48	29	1454
255 - 265	21	248	422	165	55	21	9	941
265 - 275	40	245	358	72	37	19	4	775
275 - 285	34	203	251	34	15	8	2	547
285 - 295	43	247	247	25	11	5	0	578
295 - 305	41	302	275	34	19	8	2	681
305 - 315	42	279	353	59	27	11	3	774
315 - 325	37	296	496	118	37	18	9	1011
325 - 335	30	331	783	274	120	31	11	1580
335 - 345	37	338	956	485	253	113	43	2225
345 - 355	38	344	918	497	357	188	119	2461
Sub-Total	1250	9777	16452	8325	4554	1686	719	42763
							Calms	864
Average Wind Speed: 3.64 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

SONORAN ENERGY PROJECT
BLYTHE, CA: 2009 THROUGH 2013
WIND FREQUENCY DISTRIBUTIONS

2009 ANNUAL
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

	Hours by Wind Speed Class							
Directions	**0.5 - 1**	**1 - 2**	**2 - 4**	**4 - 6**	**6 - 8**	**8 - 10**	**>= 10**	**Total**
355 - 5	6	61	105	82	41	24	23	342
5 - 15	10	49	67	37	16	10	9	198
15 - 25	5	41	64	9	3	0	4	126
25 - 35	8	52	46	13	1	0	0	120
35 - 45	8	42	32	10	2	0	0	94
45 - 55	5	41	34	7	3	1	0	91
55 - 65	7	40	50	12	5	0	0	114
65 - 75	8	50	32	5	0	0	0	95
75 - 85	2	45	40	5	2	0	0	94
85 - 95	8	52	40	2	1	0	0	103
95 - 105	4	41	30	6	0	1	0	82
105 - 115	4	37	36	1	1	0	0	79
115 - 125	6	62	41	4	2	0	0	115
125 - 135	9	52	50	4	1	0	0	116
135 - 145	2	57	62	12	1	0	0	134
145 - 155	9	41	118	36	4	1	0	209
155 - 165	6	62	154	117	47	2	0	388
165 - 175	5	68	163	211	100	29	1	577
175 - 185	7	63	165	193	98	21	3	550
185 - 195	6	58	165	175	77	27	1	509
195 - 205	10	69	144	100	57	18	5	403
205 - 215	8	58	136	77	62	13	2	356
215 - 225	8	56	119	80	72	23	8	366
225 - 235	13	60	115	87	77	45	15	412
235 - 245	9	51	149	82	48	18	14	371
245 - 255	7	77	127	64	21	9	7	312
255 - 265	5	51	64	45	11	4	1	181
265 - 275	4	50	67	12	10	3	1	147
275 - 285	7	37	48	14	6	2	0	114
285 - 295	9	50	53	4	0	3	0	119
295 - 305	9	61	52	4	8	1	2	137
305 - 315	7	64	80	10	9	2	2	174
315 - 325	9	55	91	19	13	6	3	196
325 - 335	10	70	156	67	39	5	2	349
335 - 345	8	60	199	99	72	25	8	471
345 - 355	9	63	151	84	76	42	19	444
Sub-Total	257	1946	3245	1789	986	335	130	8688
							Calms	59
Average Wind Speed: 3.72 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

2009: FIRST QUARTER

WIND SPEEDS AT 10 FEET HEIGHT (m/s)

	Hours by Wind Speed Class							
Directions	**0.5 - 1**	**1 - 2**	**2 - 4**	**4 - 6**	**6 - 8**	**8 - 10**	**>= 10**	**Total**
355 - 5	1	18	25	24	14	15	9	106
5 - 15	5	7	18	7	4	3	5	49
15 - 25	2	15	18	5	1	0	4	45
25 - 35	3	18	11	0	0	0	0	32
35 - 45	5	10	7	0	0	0	0	22
45 - 55	2	14	7	0	0	0	0	23
55 - 65	6	16	13	4	0	0	0	39
65 - 75	2	13	12	0	0	0	0	27
75 - 85	2	11	18	1	1	0	0	33
85 - 95	7	15	13	0	0	0	0	35
95 - 105	0	17	7	0	0	0	0	24
105 - 115	1	11	8	0	0	0	0	20
115 - 125	0	16	8	0	0	0	0	24
125 - 135	4	20	7	0	0	0	0	31
135 - 145	0	20	11	1	0	0	0	32
145 - 155	4	11	15	1	0	0	0	31
155 - 165	3	18	11	5	0	0	0	37
165 - 175	2	21	20	23	8	1	0	75
175 - 185	3	18	15	16	10	0	0	62
185 - 195	2	16	25	18	5	1	0	67
195 - 205	4	24	25	11	6	1	0	71
205 - 215	4	29	28	6	5	3	0	75
215 - 225	4	17	24	13	9	8	3	78
225 - 235	6	27	33	18	10	15	6	115
235 - 245	5	18	55	15	6	1	4	104
245 - 255	2	27	34	9	2	1	2	77
255 - 265	1	18	16	10	1	2	0	48
265 - 275	2	17	18	4	2	2	0	45
275 - 285	4	14	12	3	0	0	0	33
285 - 295	4	16	11	1	0	0	0	32
295 - 305	2	21	12	1	0	1	0	37
305 - 315	1	18	32	2	1	0	0	54
315 - 325	3	20	36	7	8	1	2	77
325 - 335	1	22	59	27	16	1	2	128
335 - 345	4	17	59	51	46	9	1	187
345 - 355	4	20	51	40	34	20	10	179
Sub-Total	105	630	774	323	189	85	48	2154
							Calms	5
Average Wind Speed: 3.42 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

2009: SECOND QUARTER
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

Directions	Hours by Wind Speed Class							
	0.5 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	>= 10	Total
355 - 5	0	11	16	10	3	0	0	40
5 - 15	2	14	13	10	5	0	0	44
15 - 25	2	6	12	0	0	0	0	20
25 - 35	2	9	11	4	0	0	0	26
35 - 45	0	13	5	5	1	0	0	24
45 - 55	1	6	8	1	0	0	0	16
55 - 65	0	4	6	3	0	0	0	13
65 - 75	0	13	7	2	0	0	0	22
75 - 85	0	7	6	0	0	0	0	13
85 - 95	0	5	5	0	0	0	0	10
95 - 105	1	7	6	2	0	0	0	16
105 - 115	1	6	7	0	0	0	0	14
115 - 125	0	11	11	1	0	0	0	23
125 - 135	0	9	15	1	0	0	0	25
135 - 145	1	11	11	3	0	0	0	26
145 - 155	0	8	43	8	1	0	0	60
155 - 165	0	11	52	41	21	1	0	126
165 - 175	0	11	59	88	48	19	1	226
175 - 185	1	12	53	75	38	7	1	187
185 - 195	0	12	50	66	33	12	0	173
195 - 205	1	12	53	45	29	11	2	153
205 - 215	0	2	45	29	25	5	2	108
215 - 225	1	11	35	29	35	10	4	125
225 - 235	0	6	32	25	37	16	7	123
235 - 245	1	4	28	35	19	9	4	100
245 - 255	1	9	20	22	8	2	1	63
255 - 265	0	9	14	19	6	1	1	50
265 - 275	0	7	14	2	8	1	1	33
275 - 285	0	8	12	7	6	2	0	35
285 - 295	0	9	8	3	0	3	0	23
295 - 305	2	8	9	1	6	0	2	28
305 - 315	2	13	9	2	3	1	1	31
315 - 325	1	4	16	3	2	1	0	27
325 - 335	1	10	15	13	8	1	0	48
335 - 345	1	11	37	4	4	0	0	57
345 - 355	0	10	27	12	4	0	0	53
Sub-Total	22	319	770	571	350	102	27	2161
							Calms	19
Average Wind Speed: 4.22 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

2009: THIRD QUARTER
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

Directions	Hours by Wind Speed Class							
	0.5 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	>= 10	Total
355 - 5	3	9	22	10	6	2	2	54
5 - 15	1	7	11	3	0	0	0	22
15 - 25	0	6	10	0	0	0	0	16
25 - 35	0	4	10	2	1	0	0	17
35 - 45	0	9	6	3	1	0	0	19
45 - 55	1	3	10	5	3	1	0	23
55 - 65	0	6	15	5	5	0	0	31
65 - 75	2	9	7	3	0	0	0	21
75 - 85	0	10	10	4	1	0	0	25
85 - 95	0	13	11	2	1	0	0	27
95 - 105	1	7	10	4	0	1	0	23
105 - 115	0	9	15	1	1	0	0	26
115 - 125	2	11	15	3	2	0	0	33
125 - 135	1	7	23	2	1	0	0	34
135 - 145	0	14	28	7	1	0	0	50
145 - 155	0	8	49	26	3	1	0	87
155 - 165	0	15	67	63	26	1	0	172
165 - 175	0	13	62	84	41	6	0	206
175 - 185	1	14	76	84	42	11	2	230
185 - 195	1	10	69	78	29	12	1	200
195 - 205	1	10	42	34	15	5	2	109
205 - 215	0	13	44	30	26	3	0	116
215 - 225	0	9	38	29	14	1	0	91
225 - 235	1	5	31	33	22	8	0	100
235 - 245	1	7	32	24	18	5	2	89
245 - 255	1	11	34	27	7	4	1	85
255 - 265	2	6	15	9	4	1	0	37
265 - 275	1	6	16	5	0	0	0	28
275 - 285	1	4	6	1	0	0	0	12
285 - 295	1	5	14	0	0	0	0	20
295 - 305	0	7	12	0	0	0	0	19
305 - 315	0	9	13	0	1	0	0	23
315 - 325	1	13	7	0	0	0	0	21
325 - 335	2	12	18	0	1	0	0	33
335 - 345	0	7	29	6	4	3	0	49
345 - 355	0	7	13	5	6	2	3	36
Sub-Total	25	315	890	592	282	67	13	2184
							Calms	17
Average Wind Speed: 3.96 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

2009: FOURTH QUARTER
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

Directions	Hours by Wind Speed Class							
	0.5 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	>= 10	Total
355 - 5	2	23	42	38	18	7	12	142
5 - 15	2	21	25	17	7	7	4	83
15 - 25	1	14	24	4	2	0	0	45
25 - 35	3	21	14	7	0	0	0	45
35 - 45	3	10	14	2	0	0	0	29
45 - 55	1	18	9	1	0	0	0	29
55 - 65	1	14	16	0	0	0	0	31
65 - 75	4	15	6	0	0	0	0	25
75 - 85	0	17	6	0	0	0	0	23
85 - 95	1	19	11	0	0	0	0	31
95 - 105	2	10	7	0	0	0	0	19
105 - 115	2	11	6	0	0	0	0	19
115 - 125	4	24	7	0	0	0	0	35
125 - 135	4	16	5	1	0	0	0	26
135 - 145	1	12	12	1	0	0	0	26
145 - 155	5	14	11	1	0	0	0	31
155 - 165	3	18	24	8	0	0	0	53
165 - 175	3	23	22	16	3	3	0	70
175 - 185	2	19	21	18	8	3	0	71
185 - 195	3	20	21	13	10	2	0	69
195 - 205	4	23	24	10	7	1	1	70
205 - 215	4	14	19	12	6	2	0	57
215 - 225	3	19	22	9	14	4	1	72
225 - 235	6	22	19	11	8	6	2	74
235 - 245	2	22	34	8	5	3	4	78
245 - 255	3	30	39	6	4	2	3	87
255 - 265	2	18	19	7	0	0	0	46
265 - 275	1	20	19	1	0	0	0	41
275 - 285	2	11	18	3	0	0	0	34
285 - 295	4	20	20	0	0	0	0	44
295 - 305	5	25	19	2	2	0	0	53
305 - 315	4	24	26	6	4	1	1	66
315 - 325	4	18	32	9	3	4	1	71
325 - 335	6	26	64	27	14	3	0	140
335 - 345	3	25	74	38	18	13	7	178
345 - 355	5	26	60	27	32	20	6	176
Sub-Total	105	682	811	303	165	81	42	2189
							Calms	18
Average Wind Speed: 3.30 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

SONORAN ENERGY PROJECT
BLYTHE, CA: 2009 THROUGH 2013
WIND FREQUENCY DISTRIBUTIONS

2010: ANNUAL
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

	Hours by Wind Speed Class							
Directions	**0.5 - 1**	**1 - 2**	**2 - 4**	**4 - 6**	**6 - 8**	**8 - 10**	**>= 10**	**Total**
355 - 5	9	70	139	77	33	22	7	357
5 - 15	7	57	71	35	14	4	6	194
15 - 25	6	55	74	13	2	0	0	150
25 - 35	4	60	50	10	1	0	0	125
35 - 45	4	47	59	7	2	0	0	119
45 - 55	9	53	49	8	2	0	0	121
55 - 65	4	38	33	13	0	0	0	88
65 - 75	3	48	46	8	0	0	0	105
75 - 85	4	45	38	3	1	1	0	92
85 - 95	10	46	39	3	0	0	0	98
95 - 105	7	47	30	1	0	0	0	85
105 - 115	13	49	30	1	1	1	0	95
115 - 125	6	55	31	3	0	0	0	95
125 - 135	6	39	53	4	0	1	0	103
135 - 145	9	64	71	12	2	0	0	158
145 - 155	7	66	93	34	1	0	0	201
155 - 165	8	68	139	107	37	2	0	361
165 - 175	9	51	156	178	121	15	3	533
175 - 185	12	81	192	225	119	20	1	650
185 - 195	7	62	159	164	101	16	3	512
195 - 205	5	67	131	98	71	12	1	385
205 - 215	13	73	124	85	60	6	2	363
215 - 225	0	65	112	83	45	30	7	342
225 - 235	12	65	117	74	94	66	30	458
235 - 245	9	66	117	67	49	41	18	367
245 - 255	4	60	130	56	26	9	6	291
255 - 265	3	53	87	26	18	1	1	189
265 - 275	10	56	68	18	16	6	0	174
275 - 285	11	38	54	5	4	2	1	115
285 - 295	8	56	49	9	6	0	0	128
295 - 305	10	73	56	7	8	3	0	157
305 - 315	11	62	74	11	3	4	1	166
315 - 325	9	51	91	19	6	4	0	180
325 - 335	5	66	134	48	20	7	0	280
335 - 345	10	76	161	90	39	20	3	399
345 - 355	9	68	195	99	73	25	11	480
Sub-Total	273	2096	3252	1701	975	318	101	8716
							Calms	37
Average Wind Speed: 3.62 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

2010: FIRST QUARTER

WIND SPEEDS AT 10 FEET HEIGHT (m/s)

Directions	Hours by Wind Speed Class							
	0.5 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	>= 10	Total
355 - 5	4	27	41	30	16	12	5	135
5 - 15	2	24	21	11	4	1	6	69
15 - 25	1	18	30	2	1	0	0	52
25 - 35	2	19	27	4	0	0	0	52
35 - 45	1	16	22	5	1	0	0	45
45 - 55	3	16	20	4	2	0	0	45
55 - 65	0	13	10	5	0	0	0	28
65 - 75	2	13	21	3	0	0	0	39
75 - 85	1	22	12	0	1	0	0	36
85 - 95	1	13	9	0	0	0	0	23
95 - 105	3	18	10	0	0	0	0	31
105 - 115	4	13	12	0	0	0	0	29
115 - 125	4	20	6	1	0	0	0	31
125 - 135	5	16	5	1	0	0	0	27
135 - 145	5	14	9	0	1	0	0	29
145 - 155	3	15	11	2	0	0	0	31
155 - 165	2	19	20	6	1	1	0	49
165 - 175	2	19	30	10	8	1	2	72
175 - 185	5	23	20	17	3	2	0	70
185 - 195	3	11	20	13	8	4	1	60
195 - 205	0	19	20	11	12	4	0	66
205 - 215	5	19	13	13	5	1	2	58
215 - 225	0	13	22	17	7	7	3	69
225 - 235	2	18	27	18	14	9	3	91
235 - 245	3	17	30	14	4	4	1	73
245 - 255	3	24	30	12	7	0	3	79
255 - 265	1	19	24	1	3	0	1	49
265 - 275	3	18	20	5	3	1	0	50
275 - 285	5	13	16	1	1	0	1	37
285 - 295	2	22	13	2	2	0	0	41
295 - 305	2	27	16	1	2	0	0	48
305 - 315	5	21	26	2	0	0	0	54
315 - 325	5	18	32	8	3	0	0	66
325 - 335	2	22	38	13	6	3	0	84
335 - 345	2	27	51	42	15	8	3	148
345 - 355	5	27	62	38	32	8	6	178
Sub-Total	98	673	796	312	162	66	37	2144
							Calms	15
Average Wind Speed: 3.22 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

2010: SECOND QUARTER
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

Directions	Hours by Wind Speed Class							
	0.5 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	>= 10	Total
355 - 5	1	13	24	8	8	3	0	57
5 - 15	1	13	12	6	7	0	0	39
15 - 25	0	10	13	0	0	0	0	23
25 - 35	0	7	7	1	1	0	0	16
35 - 45	1	8	11	1	1	0	0	22
45 - 55	1	9	9	0	0	0	0	19
55 - 65	0	9	5	0	0	0	0	14
65 - 75	0	10	6	0	0	0	0	16
75 - 85	1	5	9	0	0	0	0	15
85 - 95	1	7	10	0	0	0	0	18
95 - 105	1	6	5	0	0	0	0	12
105 - 115	1	14	2	0	0	0	0	17
115 - 125	0	8	8	0	0	0	0	16
125 - 135	0	4	16	0	0	0	0	20
135 - 145	1	13	23	2	0	0	0	39
145 - 155	1	7	24	7	0	0	0	39
155 - 165	1	14	38	28	15	0	0	96
165 - 175	1	11	45	58	31	4	0	150
175 - 185	1	21	60	67	30	4	0	183
185 - 195	0	15	44	42	23	0	0	124
195 - 205	1	12	34	28	25	6	0	106
205 - 215	0	9	46	23	26	4	0	108
215 - 225	0	17	32	28	19	14	3	113
225 - 235	2	15	35	32	49	41	24	198
235 - 245	0	12	30	20	35	26	12	135
245 - 255	0	7	31	28	13	8	3	90
255 - 265	0	9	22	16	6	1	0	54
265 - 275	1	14	18	8	11	1	0	53
275 - 285	1	9	13	2	1	1	0	27
285 - 295	1	8	9	5	3	0	0	26
295 - 305	0	17	8	5	3	0	0	33
305 - 315	1	12	15	5	3	1	0	37
315 - 325	1	11	16	6	1	1	0	36
325 - 335	0	13	29	15	7	3	0	67
335 - 345	3	19	30	17	13	1	0	83
345 - 355	0	15	27	11	15	3	0	71
Sub-Total	24	403	766	469	346	122	42	2172
							Calms	11
Average Wind Speed: 4.18 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

2010: THIRD QUARTER
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

Directions	Hours by Wind Speed Class							
	0.5 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	>= 10	Total
355 - 5	1	17	21	0	0	0	0	39
5 - 15	3	7	8	1	0	0	0	19
15 - 25	2	12	12	1	0	0	0	27
25 - 35	0	16	6	1	0	0	0	23
35 - 45	1	13	10	0	0	0	0	24
45 - 55	0	13	7	4	0	0	0	24
55 - 65	3	8	6	5	0	0	0	22
65 - 75	0	14	9	4	0	0	0	27
75 - 85	0	9	11	1	0	1	0	22
85 - 95	1	13	13	1	0	0	0	28
95 - 105	1	12	9	0	0	0	0	22
105 - 115	2	8	10	1	1	1	0	23
115 - 125	0	10	11	2	0	0	0	23
125 - 135	1	8	19	2	0	1	0	31
135 - 145	0	15	28	6	1	0	0	50
145 - 155	1	24	41	25	1	0	0	92
155 - 165	1	19	54	61	18	1	0	154
165 - 175	1	10	55	81	71	10	1	229
175 - 185	2	13	65	113	70	9	0	272
185 - 195	0	12	68	78	57	8	1	224
195 - 205	1	14	50	42	24	1	1	133
205 - 215	2	18	47	31	18	1	0	117
215 - 225	0	11	32	27	13	4	0	87
225 - 235	3	12	29	19	23	5	0	91
235 - 245	1	10	26	24	8	7	0	76
245 - 255	1	11	31	10	5	0	0	58
255 - 265	1	6	15	6	0	0	0	28
265 - 275	3	5	12	3	1	1	0	25
275 - 285	4	3	8	1	0	0	0	16
285 - 295	2	6	7	1	0	0	0	16
295 - 305	5	6	10	0	0	0	0	21
305 - 315	2	10	17	0	0	0	0	29
315 - 325	0	6	13	1	0	0	0	20
325 - 335	0	10	19	1	0	0	0	30
335 - 345	1	13	24	1	0	0	0	39
345 - 355	1	11	23	1	0	0	0	36
Sub-Total	47	405	826	555	311	50	3	2197
							Calms	8
Average Wind Speed: 3.83 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

2010: FOURTH QUARTER
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

Directions	Hours by Wind Speed Class							
	0.5 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	>= 10	Total
355 - 5	3	13	53	39	9	7	2	126
5 - 15	1	13	30	17	3	3	0	67
15 - 25	3	15	19	10	1	0	0	48
25 - 35	2	18	10	4	0	0	0	34
35 - 45	1	10	16	1	0	0	0	28
45 - 55	5	15	13	0	0	0	0	33
55 - 65	1	8	12	3	0	0	0	24
65 - 75	1	11	10	1	0	0	0	23
75 - 85	2	9	6	2	0	0	0	19
85 - 95	7	13	7	2	0	0	0	29
95 - 105	2	11	6	1	0	0	0	20
105 - 115	6	14	6	0	0	0	0	26
115 - 125	2	17	6	0	0	0	0	25
125 - 135	0	11	13	1	0	0	0	25
135 - 145	3	22	11	4	0	0	0	40
145 - 155	2	20	17	0	0	0	0	39
155 - 165	4	16	27	12	3	0	0	62
165 - 175	5	11	26	29	11	0	0	82
175 - 185	4	24	47	28	16	5	1	125
185 - 195	4	24	27	31	13	4	1	104
195 - 205	3	22	27	17	10	1	0	80
205 - 215	6	27	18	18	11	0	0	80
215 - 225	0	24	26	11	6	5	1	73
225 - 235	5	20	26	5	8	11	3	78
235 - 245	5	27	31	9	2	4	5	83
245 - 255	0	18	38	6	1	1	0	64
255 - 265	1	19	26	3	9	0	0	58
265 - 275	3	19	18	2	1	3	0	46
275 - 285	1	13	17	1	2	1	0	35
285 - 295	3	20	20	1	1	0	0	45
295 - 305	3	23	22	1	3	3	0	55
305 - 315	3	19	16	4	0	3	1	46
315 - 325	3	16	30	4	2	3	0	58
325 - 335	3	21	48	19	7	1	0	99
335 - 345	4	17	56	30	11	11	0	129
345 - 355	3	15	83	49	26	14	5	195
Sub-Total	104	615	864	365	156	80	19	2203
							Calms	3
Average Wind Speed: 3.26 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

SONORAN ENERGY PROJECT
BLYTHE, CA: 2009 THROUGH 2013
WIND FREQUENCY DISTRIBUTIONS

2011: ANNUAL
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

	Hours by Wind Speed Class							
Directions	**0.5 - 1**	**1 - 2**	**2 - 4**	**4 - 6**	**6 - 8**	**8 - 10**	**>= 10**	**Total**
355 - 5	4	55	138	84	65	42	32	420
5 - 15	1	45	83	32	23	26	8	218
15 - 25	5	53	66	17	3	0	2	146
25 - 35	6	37	42	8	0	0	0	93
35 - 45	5	30	34	14	1	0	0	84
45 - 55	8	50	39	9	3	0	0	109
55 - 65	5	46	46	4	3	1	0	105
65 - 75	7	46	20	3	3	1	0	80
75 - 85	11	31	26	5	1	1	0	75
85 - 95	5	47	33	4	0	0	0	89
95 - 105	4	71	32	3	0	0	0	110
105 - 115	9	52	34	1	0	1	0	97
115 - 125	6	47	57	0	1	0	1	112
125 - 135	6	42	57	4	0	0	0	109
135 - 145	8	46	98	8	3	0	0	163
145 - 155	5	61	106	40	13	1	0	226
155 - 165	8	52	122	86	33	3	0	304
165 - 175	10	76	164	163	67	4	0	484
175 - 185	7	74	147	172	75	5	1	481
185 - 195	6	64	149	140	66	7	0	432
195 - 205	13	66	131	80	53	10	0	353
205 - 215	6	58	102	46	64	20	4	300
215 - 225	8	70	93	74	72	31	9	357
225 - 235	10	59	105	77	85	49	53	438
235 - 245	9	46	126	77	62	51	31	402
245 - 255	9	65	133	78	45	7	6	343
255 - 265	4	47	83	45	16	7	3	205
265 - 275	9	52	89	14	3	4	0	171
275 - 285	4	41	41	6	1	1	0	94
285 - 295	11	51	52	3	1	0	0	118
295 - 305	4	67	66	9	1	0	0	147
305 - 315	11	50	68	12	3	0	0	144
315 - 325	4	78	89	25	3	2	3	204
325 - 335	2	58	149	51	27	11	4	302
335 - 345	5	60	202	105	53	39	16	480
345 - 355	3	78	197	117	70	50	34	549
Sub-Total	238	1971	3219	1616	919	374	207	8544
							Calms	160
Average Wind Speed: 3.73 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

2011: FIRST QUARTER

WIND SPEEDS AT 10 FEET HEIGHT (m/s)

Directions	Hours by Wind Speed Class							
	0.5 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	>= 10	Total
355 - 5	1	23	45	42	35	28	19	193
5 - 15	0	8	29	10	16	13	4	80
15 - 25	2	20	22	5	1	0	2	52
25 - 35	4	15	13	4	0	0	0	36
35 - 45	3	9	6	3	0	0	0	21
45 - 55	1	18	12	2	2	0	0	35
55 - 65	3	16	12	0	0	0	0	31
65 - 75	0	13	5	0	0	0	0	18
75 - 85	4	8	7	0	0	0	0	19
85 - 95	1	18	5	1	0	0	0	25
95 - 105	3	26	8	0	0	0	0	37
105 - 115	3	25	7	0	0	0	0	35
115 - 125	1	16	10	0	0	0	0	27
125 - 135	2	12	8	0	0	0	0	22
135 - 145	3	15	24	0	0	0	0	42
145 - 155	2	23	18	5	0	0	0	48
155 - 165	0	9	18	10	0	0	0	37
165 - 175	3	28	24	11	2	0	0	68
175 - 185	4	26	14	17	7	2	0	70
185 - 195	2	19	22	13	6	3	0	65
195 - 205	5	16	18	10	6	1	0	56
205 - 215	1	16	17	6	10	3	1	54
215 - 225	4	16	13	13	11	8	0	65
225 - 235	3	15	20	12	19	12	6	87
235 - 245	2	9	37	14	15	12	2	91
245 - 255	3	25	31	10	13	3	0	85
255 - 265	0	12	15	1	9	0	0	37
265 - 275	4	13	27	1	0	0	0	45
275 - 285	1	16	14	1	0	0	0	32
285 - 295	1	16	17	0	0	0	0	34
295 - 305	2	20	32	2	0	0	0	56
305 - 315	5	13	22	3	2	0	0	45
315 - 325	2	33	27	7	1	0	0	70
325 - 335	2	18	39	14	8	3	1	85
335 - 345	2	15	57	41	20	12	1	148
345 - 355	2	29	57	57	31	17	9	202
Sub-Total	81	629	752	315	214	117	45	2153
							Calms	6
Average Wind Speed: 3.58 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

2011: SECOND QUARTER
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

Directions	Hours by Wind Speed Class							
	0.5 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	>= 10	Total
355 - 5	0	11	26	12	7	5	2	63
5 - 15	0	11	20	8	2	7	3	51
15 - 25	1	8	15	7	0	0	0	31
25 - 35	1	3	6	3	0	0	0	13
35 - 45	0	8	7	7	0	0	0	22
45 - 55	0	10	12	1	1	0	0	24
55 - 65	0	6	11	1	0	0	0	18
65 - 75	1	5	3	1	0	0	0	10
75 - 85	1	5	5	0	0	0	0	11
85 - 95	0	10	7	2	0	0	0	19
95 - 105	1	7	8	2	0	0	0	18
105 - 115	2	2	9	0	0	0	0	13
115 - 125	1	5	8	0	0	0	0	14
125 - 135	1	6	12	2	0	0	0	21
135 - 145	2	6	15	3	2	0	0	28
145 - 155	0	9	24	5	7	1	0	46
155 - 165	2	4	41	23	7	2	0	79
165 - 175	1	9	38	49	27	2	0	126
175 - 185	0	15	39	45	16	1	0	116
185 - 195	2	7	40	41	24	1	0	115
195 - 205	2	11	43	29	22	5	0	112
205 - 215	0	13	39	15	28	12	2	109
215 - 225	2	13	28	30	41	19	7	140
225 - 235	0	14	35	34	47	34	46	210
235 - 245	2	8	22	19	34	29	24	138
245 - 255	0	10	28	37	17	4	5	101
255 - 265	0	8	20	16	6	6	2	58
265 - 275	1	15	18	6	0	2	0	42
275 - 285	0	3	5	1	0	0	0	9
285 - 295	2	9	6	2	0	0	0	19
295 - 305	0	8	11	4	1	0	0	24
305 - 315	1	10	19	3	0	0	0	33
315 - 325	0	10	28	8	0	0	0	46
325 - 335	0	13	33	14	10	6	1	77
335 - 345	0	13	35	21	8	6	3	86
345 - 355	0	12	39	14	11	9	12	97
Sub-Total	26	317	755	465	318	151	107	2139
							Calms	9
Average Wind Speed: 4.57 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

2011: THIRD QUARTER
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

Directions	Hours by Wind Speed Class							
	0.5 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	>= 10	Total
355 - 5	2	4	16	4	2	0	0	28
5 - 15	1	10	11	2	0	0	0	24
15 - 25	1	8	11	1	0	0	0	21
25 - 35	1	2	3	0	0	0	0	6
35 - 45	0	5	3	2	0	0	0	10
45 - 55	2	7	7	2	0	0	0	18
55 - 65	2	7	9	1	3	1	0	23
65 - 75	1	15	2	1	3	1	0	23
75 - 85	3	8	8	5	1	1	0	26
85 - 95	2	5	10	1	0	0	0	18
95 - 105	0	11	11	1	0	0	0	23
105 - 115	0	8	5	1	0	1	0	15
115 - 125	0	8	27	0	1	0	1	37
125 - 135	0	8	28	2	0	0	0	38
135 - 145	2	9	42	5	1	0	0	59
145 - 155	1	10	50	29	6	0	0	96
155 - 165	0	17	50	51	26	1	0	145
165 - 175	1	14	85	92	34	1	0	227
175 - 185	0	13	75	90	44	2	1	225
185 - 195	1	18	68	79	33	2	0	201
195 - 205	1	24	57	35	20	3	0	140
205 - 215	0	6	37	22	20	1	0	86
215 - 225	0	15	35	27	10	1	0	88
225 - 235	2	9	28	25	13	1	0	78
235 - 245	0	11	28	37	6	3	0	85
245 - 255	1	6	37	25	11	0	1	81
255 - 265	1	4	24	20	1	1	0	51
265 - 275	1	5	19	4	1	1	0	31
275 - 285	1	7	8	3	0	1	0	20
285 - 295	2	4	11	0	1	0	0	18
295 - 305	1	11	9	0	0	0	0	21
305 - 315	0	9	11	3	1	0	0	24
315 - 325	2	15	8	3	0	0	0	28
325 - 335	0	8	22	2	1	0	0	33
335 - 345	1	9	25	6	1	1	2	45
345 - 355	0	15	25	8	8	4	3	63
Sub-Total	33	345	905	589	248	27	8	2155
							Calms	42
Average Wind Speed: 3.71 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

2011: FOURTH QUARTER
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

Directions	Hours by Wind Speed Class							
	0.5 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	>= 10	Total
355 - 5	1	17	51	26	21	9	11	136
5 - 15	0	16	23	12	5	6	1	63
15 - 25	1	17	18	4	2	0	0	42
25 - 35	0	17	20	1	0	0	0	38
35 - 45	2	8	18	2	1	0	0	31
45 - 55	5	15	8	4	0	0	0	32
55 - 65	0	17	14	2	0	0	0	33
65 - 75	5	13	10	1	0	0	0	29
75 - 85	3	10	6	0	0	0	0	19
85 - 95	2	14	11	0	0	0	0	27
95 - 105	0	27	5	0	0	0	0	32
105 - 115	4	17	13	0	0	0	0	34
115 - 125	4	18	12	0	0	0	0	34
125 - 135	3	16	9	0	0	0	0	28
135 - 145	1	16	17	0	0	0	0	34
145 - 155	2	19	14	1	0	0	0	36
155 - 165	6	22	13	2	0	0	0	43
165 - 175	5	25	17	11	4	1	0	63
175 - 185	3	20	19	20	8	0	0	70
185 - 195	1	20	19	7	3	1	0	51
195 - 205	5	15	13	6	5	1	0	45
205 - 215	5	23	9	3	6	4	1	51
215 - 225	2	26	17	4	10	3	2	64
225 - 235	5	21	22	6	6	2	1	63
235 - 245	5	18	39	7	7	7	5	88
245 - 255	5	24	37	6	4	0	0	76
255 - 265	3	23	24	8	0	0	1	59
265 - 275	3	19	25	3	2	1	0	53
275 - 285	2	15	14	1	1	0	0	33
285 - 295	6	22	18	1	0	0	0	47
295 - 305	1	28	14	3	0	0	0	46
305 - 315	5	18	16	3	0	0	0	42
315 - 325	0	20	26	7	2	2	3	60
325 - 335	0	19	55	21	8	2	2	107
335 - 345	2	23	85	37	24	20	10	201
345 - 355	1	22	76	38	20	20	10	187
Sub-Total	98	680	807	247	139	79	47	2097
							Calms	103
Average Wind Speed: 3.08 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

SONORAN ENERGY PROJECT
BLYTHE, CA: 2009 THROUGH 2013
WIND FREQUENCY DISTRIBUTIONS

2012: ANNUAL
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

	Hours by Wind Speed Class							
Directions	**0.5 - 1**	**1 - 2**	**2 - 4**	**4 - 6**	**6 - 8**	**8 - 10**	**>= 10**	**Total**
355 - 5	6	57	138	54	31	25	17	328
5 - 15	5	46	73	22	17	2	3	168
15 - 25	4	52	47	14	1	0	1	119
25 - 35	6	30	31	10	1	1	0	79
35 - 45	10	46	42	10	0	0	0	108
45 - 55	7	49	29	10	5	0	0	100
55 - 65	4	42	35	9	6	1	0	97
65 - 75	9	53	35	4	4	0	0	105
75 - 85	6	35	46	3	0	0	0	90
85 - 95	4	68	39	2	0	0	0	113
95 - 105	8	59	47	6	2	0	0	122
105 - 115	11	70	43	3	0	0	0	127
115 - 125	11	51	56	9	2	1	0	130
125 - 135	4	54	80	13	0	1	0	152
135 - 145	8	49	100	17	3	1	0	178
145 - 155	12	51	121	41	2	1	0	228
155 - 165	12	63	183	115	29	3	1	406
165 - 175	9	69	236	181	87	25	4	611
175 - 185	5	74	172	204	91	19	7	572
185 - 195	4	73	181	144	73	9	4	488
195 - 205	7	62	132	85	49	12	3	350
205 - 215	9	56	103	71	42	11	3	295
215 - 225	10	54	95	63	44	25	13	304
225 - 235	11	59	102	69	62	40	24	367
235 - 245	11	66	113	58	32	22	14	316
245 - 255	10	54	120	55	15	14	9	277
255 - 265	3	39	87	24	5	3	3	164
265 - 275	10	48	65	19	3	4	1	150
275 - 285	7	40	48	5	2	2	1	105
285 - 295	9	53	44	6	2	0	0	114
295 - 305	13	55	56	6	1	1	0	132
305 - 315	7	54	65	12	6	1	0	145
315 - 325	8	51	107	21	6	4	1	198
325 - 335	7	70	177	38	18	3	2	315
335 - 345	5	80	202	88	30	11	6	422
345 - 355	13	76	170	86	60	35	18	458
Sub-Total	285	2008	3420	1577	731	277	135	8433
							Calms	292
Average Wind Speed: 3.44 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

2012: FIRST QUARTER

WIND SPEEDS AT 10 FEET HEIGHT (m/s)

Directions	Hours by Wind Speed Class							
	0.5 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	>= 10	Total
355 - 5	1	9	51	28	23	14	15	141
5 - 15	0	9	21	9	12	1	3	55
15 - 25	2	10	21	10	1	0	1	45
25 - 35	1	4	10	4	0	0	0	19
35 - 45	2	14	11	2	0	0	0	29
45 - 55	1	17	11	2	0	0	0	31
55 - 65	1	16	11	1	0	0	0	29
65 - 75	4	19	9	1	0	0	0	33
75 - 85	2	10	16	0	0	0	0	28
85 - 95	1	24	12	0	0	0	0	37
95 - 105	2	9	9	2	0	0	0	22
105 - 115	3	18	9	0	0	0	0	30
115 - 125	6	15	9	1	0	0	0	31
125 - 135	1	16	8	0	0	0	0	25
135 - 145	4	10	7	1	0	0	0	22
145 - 155	2	8	14	0	0	0	0	24
155 - 165	4	14	21	13	1	0	1	54
165 - 175	2	18	36	23	9	4	1	93
175 - 185	3	22	21	28	15	2	0	91
185 - 195	1	26	35	14	8	0	0	84
195 - 205	1	16	24	11	11	5	1	69
205 - 215	3	20	20	12	16	6	0	77
215 - 225	4	15	22	6	2	14	10	73
225 - 235	5	16	24	12	7	19	16	99
235 - 245	3	19	26	8	4	7	9	76
245 - 255	2	13	19	7	2	5	1	49
255 - 265	1	16	26	4	1	1	0	49
265 - 275	2	11	13	7	1	0	0	34
275 - 285	2	18	20	1	0	1	1	43
285 - 295	4	16	11	0	0	0	0	31
295 - 305	3	17	15	2	0	1	0	38
305 - 315	1	12	21	5	3	1	0	43
315 - 325	1	13	39	14	4	1	1	73
325 - 335	2	16	53	19	9	1	2	102
335 - 345	2	20	64	37	18	9	2	152
345 - 355	2	16	56	34	32	17	11	168
Sub-Total	81	542	795	318	179	109	75	2099
							Calms	78
Average Wind Speed: 3.61 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

2012: SECOND QUARTER
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

Directions	Hours by Wind Speed Class							
	0.5 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	>= 10	Total
355 - 5	1	15	22	11	6	7	1	63
5 - 15	2	12	11	3	2	0	0	30
15 - 25	2	10	11	3	0	0	0	26
25 - 35	2	7	8	3	0	0	0	20
35 - 45	4	9	11	0	0	0	0	24
45 - 55	0	6	4	1	2	0	0	13
55 - 65	0	2	12	2	2	0	0	18
65 - 75	1	5	7	1	0	0	0	14
75 - 85	2	2	10	2	0	0	0	16
85 - 95	0	7	5	0	0	0	0	12
95 - 105	1	6	11	0	0	0	0	18
105 - 115	1	8	8	1	0	0	0	18
115 - 125	1	7	16	1	0	0	0	25
125 - 135	0	7	20	3	0	0	0	30
135 - 145	1	7	27	4	0	0	0	39
145 - 155	1	10	33	14	1	1	0	60
155 - 165	2	14	53	23	14	2	0	108
165 - 175	2	12	67	62	33	16	2	194
175 - 185	0	11	44	65	39	9	5	173
185 - 195	1	8	47	42	35	8	4	145
195 - 205	1	14	34	25	27	7	2	110
205 - 215	1	8	29	32	20	4	3	97
215 - 225	0	3	27	32	30	8	0	100
225 - 235	2	7	28	24	40	20	3	124
235 - 245	0	9	20	25	20	12	5	91
245 - 255	1	7	37	22	5	6	6	84
255 - 265	0	3	19	9	1	1	3	36
265 - 275	1	6	18	7	1	3	1	37
275 - 285	0	4	10	2	1	0	0	17
285 - 295	1	7	15	4	2	0	0	29
295 - 305	2	7	14	2	0	0	0	25
305 - 315	1	6	12	4	2	0	0	25
315 - 325	1	7	26	3	2	3	0	42
325 - 335	1	10	36	7	2	1	0	57
335 - 345	0	15	39	12	4	1	4	75
345 - 355	1	12	27	19	14	8	3	84
Sub-Total	37	290	818	470	305	117	42	2079
							Calms	74
Average Wind Speed: 4.11 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

2012: THIRD QUARTER
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

Directions	Hours by Wind Speed Class							
	0.5 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	>= 10	Total
355 - 5	0	10	18	1	0	0	0	29
5 - 15	1	8	11	3	0	0	0	23
15 - 25	0	12	2	1	0	0	0	15
25 - 35	0	10	5	3	1	1	0	20
35 - 45	0	9	10	8	0	0	0	27
45 - 55	0	8	9	7	3	0	0	27
55 - 65	2	5	7	6	4	1	0	25
65 - 75	2	5	14	2	4	0	0	27
75 - 85	1	7	12	1	0	0	0	21
85 - 95	1	10	12	2	0	0	0	25
95 - 105	0	12	21	4	2	0	0	39
105 - 115	0	18	20	2	0	0	0	40
115 - 125	1	12	20	7	2	1	0	43
125 - 135	0	6	34	10	0	1	0	51
135 - 145	1	12	49	11	3	1	0	77
145 - 155	0	11	49	26	1	0	0	87
155 - 165	0	20	81	69	11	1	0	182
165 - 175	1	21	99	78	44	5	1	249
175 - 185	0	22	87	87	33	8	2	239
185 - 195	0	18	81	72	22	1	0	194
195 - 205	1	12	50	36	6	0	0	105
205 - 215	1	9	34	19	1	0	0	64
215 - 225	3	10	27	16	0	0	1	57
225 - 235	1	6	25	23	4	0	0	59
235 - 245	1	7	35	22	4	1	0	70
245 - 255	1	8	29	21	3	2	1	65
255 - 265	0	5	17	9	2	1	0	34
265 - 275	1	12	10	4	1	1	0	29
275 - 285	1	7	7	1	0	1	0	17
285 - 295	2	4	6	1	0	0	0	13
295 - 305	3	10	4	0	1	0	0	18
305 - 315	0	13	7	0	0	0	0	20
315 - 325	0	13	11	0	0	0	0	24
325 - 335	2	6	18	1	0	0	0	27
335 - 345	0	14	27	4	0	0	0	45
345 - 355	1	17	23	4	0	0	1	46
Sub-Total	28	389	971	561	152	26	6	2133
							Calms	66
Average Wind Speed: 3.43 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

2012: FOURTH QUARTER
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

	Hours by Wind Speed Class							
Directions	**0.5 - 1**	**1 - 2**	**2 - 4**	**4 - 6**	**6 - 8**	**8 - 10**	**>= 10**	**Total**
355 - 5	4	23	47	14	2	4	1	95
5 - 15	2	17	30	7	3	1	0	60
15 - 25	0	20	13	0	0	0	0	33
25 - 35	3	9	8	0	0	0	0	20
35 - 45	4	14	10	0	0	0	0	28
45 - 55	6	18	5	0	0	0	0	29
55 - 65	1	19	5	0	0	0	0	25
65 - 75	2	24	5	0	0	0	0	31
75 - 85	1	16	8	0	0	0	0	25
85 - 95	2	27	10	0	0	0	0	39
95 - 105	5	32	6	0	0	0	0	43
105 - 115	7	26	6	0	0	0	0	39
115 - 125	3	17	11	0	0	0	0	31
125 - 135	3	25	18	0	0	0	0	46
135 - 145	2	20	17	1	0	0	0	40
145 - 155	9	22	25	1	0	0	0	57
155 - 165	6	15	28	10	3	0	0	62
165 - 175	4	18	34	18	1	0	0	75
175 - 185	2	19	20	24	4	0	0	69
185 - 195	2	21	18	16	8	0	0	65
195 - 205	4	20	24	13	5	0	0	66
205 - 215	4	19	20	8	5	1	0	57
215 - 225	3	26	19	9	12	3	2	74
225 - 235	3	30	25	10	11	1	5	85
235 - 245	7	31	32	3	4	2	0	79
245 - 255	6	26	35	5	5	1	1	79
255 - 265	2	15	25	2	1	0	0	45
265 - 275	6	19	24	1	0	0	0	50
275 - 285	4	11	11	1	1	0	0	28
285 - 295	2	26	12	1	0	0	0	41
295 - 305	5	21	23	2	0	0	0	51
305 - 315	5	23	25	3	1	0	0	57
315 - 325	6	18	31	4	0	0	0	59
325 - 335	2	38	70	11	7	1	0	129
335 - 345	3	31	72	35	8	1	0	150
345 - 355	9	31	64	29	14	10	3	160
Sub-Total	139	787	836	228	95	25	12	2122
							Calms	74
Average Wind Speed: 2.61 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

SONORAN ENERGY PROJECT
BLYTHE, CA: 2009 THROUGH 2013
WIND FREQUENCY DISTRIBUTIONS

2013: ANNUAL
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

	Hours by Wind Speed Class							
Directions	**0.5 - 1**	**1 - 2**	**2 - 4**	**4 - 6**	**6 - 8**	**8 - 10**	**>= 10**	**Total**
355 - 5	6	54	133	85	67	30	26	401
5 - 15	3	56	94	43	33	17	10	256
15 - 25	3	59	58	18	6	2	1	147
25 - 35	5	34	58	6	3	0	0	106
35 - 45	5	28	38	7	2	0	0	80
45 - 55	0	42	33	9	3	1	0	88
55 - 65	3	35	37	6	1	0	1	83
65 - 75	9	46	46	5	3	1	0	110
75 - 85	4	28	46	2	2	0	0	82
85 - 95	4	46	56	11	1	0	0	118
95 - 105	3	39	56	4	2	1	0	105
105 - 115	7	36	40	1	0	0	1	85
115 - 125	4	53	54	6	0	0	0	117
125 - 135	1	44	47	11	2	0	0	105
135 - 145	6	39	71	17	1	0	0	134
145 - 155	11	41	115	42	8	0	0	217
155 - 165	6	39	154	116	69	18	0	402
165 - 175	3	58	176	212	113	43	3	608
175 - 185	9	63	150	204	109	30	3	568
185 - 195	7	61	139	96	62	12	4	381
195 - 205	0	54	119	70	38	20	0	301
205 - 215	10	60	81	47	43	19	5	265
215 - 225	5	55	97	46	68	43	15	329
225 - 235	7	55	115	73	64	38	16	368
235 - 245	9	63	130	66	47	19	5	339
245 - 255	6	43	101	58	13	9	1	231
255 - 265	6	58	101	25	5	6	1	202
265 - 275	7	39	69	9	5	2	2	133
275 - 285	5	47	60	4	2	1	0	119
285 - 295	6	37	49	3	2	2	0	99
295 - 305	5	46	45	8	1	3	0	108
305 - 315	6	49	66	14	6	4	0	145
315 - 325	7	61	118	34	9	2	2	233
325 - 335	6	67	167	70	16	5	3	334
335 - 345	9	62	192	103	59	18	10	453
345 - 355	4	59	205	111	78	36	37	530
Sub-Total	197	1756	3316	1642	943	382	146	8382
							Calms	316
Average Wind Speed: 3.69 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

2013: FIRST QUARTER

WIND SPEEDS AT 10 FEET HEIGHT (m/s)

Directions	Hours by Wind Speed Class							
	0.5 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	>= 10	Total
355 - 5	4	19	50	29	29	11	10	152
5 - 15	0	16	35	16	9	6	2	84
15 - 25	1	21	24	11	1	0	0	58
25 - 35	1	5	24	2	1	0	0	33
35 - 45	1	11	15	1	0	0	0	28
45 - 55	0	18	13	2	0	0	0	33
55 - 65	2	10	14	1	0	0	0	27
65 - 75	4	21	16	0	0	0	0	41
75 - 85	2	9	14	0	0	0	0	25
85 - 95	2	9	15	0	0	0	0	26
95 - 105	0	11	16	0	0	0	0	27
105 - 115	4	13	9	0	0	0	0	26
115 - 125	2	22	11	0	0	0	0	35
125 - 135	0	12	8	0	0	0	0	20
135 - 145	1	11	12	0	0	0	0	24
145 - 155	1	16	24	3	1	0	0	45
155 - 165	3	13	22	10	0	0	0	48
165 - 175	1	13	19	11	0	0	0	44
175 - 185	5	17	16	23	1	0	0	62
185 - 195	4	20	28	9	2	1	0	64
195 - 205	0	18	18	7	5	0	0	48
205 - 215	3	21	9	7	5	1	0	46
215 - 225	1	20	20	7	18	11	2	79
225 - 235	1	17	28	15	13	6	5	85
235 - 245	4	26	32	16	10	6	3	97
245 - 255	3	20	24	8	2	3	0	60
255 - 265	2	18	23	8	3	0	0	54
265 - 275	3	17	15	3	2	0	0	40
275 - 285	2	25	18	1	0	1	0	47
285 - 295	4	13	15	1	0	0	0	33
295 - 305	1	19	15	2	1	0	0	38
305 - 315	3	14	21	5	1	0	0	44
315 - 325	3	15	40	10	0	0	0	68
325 - 335	3	23	40	30	2	1	2	101
335 - 345	3	9	70	41	26	3	7	159
345 - 355	3	24	59	48	36	13	5	188
Sub-Total	77	586	832	327	168	63	36	2089
							Calms	53
Average Wind Speed: 3.30 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

2013: SECOND QUARTER
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

Directions	Hours by Wind Speed Class							
	0.5 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	>= 10	Total
355 - 5	0	12	14	3	8	6	8	51
5 - 15	1	13	14	4	12	6	5	55
15 - 25	0	11	8	1	1	2	1	24
25 - 35	1	6	6	1	2	0	0	16
35 - 45	1	7	3	1	1	0	0	13
45 - 55	0	6	7	1	1	0	0	15
55 - 65	1	4	4	3	0	0	0	12
65 - 75	1	9	9	2	0	0	0	21
75 - 85	0	3	7	0	0	0	0	10
85 - 95	0	10	6	0	0	0	0	16
95 - 105	2	7	11	0	0	0	0	20
105 - 115	0	6	4	1	0	0	0	11
115 - 125	0	11	16	2	0	0	0	29
125 - 135	1	11	16	2	0	0	0	30
135 - 145	0	8	19	10	0	0	0	37
145 - 155	4	9	38	20	5	0	0	76
155 - 165	1	7	41	38	39	6	0	132
165 - 175	0	17	55	84	52	22	0	230
175 - 185	1	12	56	73	45	8	0	195
185 - 195	0	12	46	37	26	2	0	123
195 - 205	0	11	34	28	17	10	0	100
205 - 215	0	17	25	22	18	11	2	95
215 - 225	1	11	27	21	32	25	4	121
225 - 235	4	6	27	28	40	20	3	128
235 - 245	1	9	25	31	21	11	1	99
245 - 255	0	6	16	22	5	2	0	51
255 - 265	0	9	22	9	2	3	0	45
265 - 275	0	9	19	0	3	1	1	33
275 - 285	1	7	12	1	2	0	0	23
285 - 295	0	4	6	1	2	2	0	15
295 - 305	1	9	6	3	0	2	0	21
305 - 315	0	7	17	8	4	4	0	40
315 - 325	0	14	17	9	7	1	1	49
325 - 335	1	13	35	6	6	4	1	66
335 - 345	3	12	36	10	10	1	0	72
345 - 355	0	13	50	10	9	1	18	101
Sub-Total	26	338	754	492	370	150	45	2175
							Calms	5
Average Wind Speed: 4.39 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

2013: THIRD QUARTER
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

Directions	Hours by Wind Speed Class							
	0.5 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	>= 10	Total
355 - 5	0	10	21	6	3	0	0	40
5 - 15	1	13	10	1	0	0	0	25
15 - 25	2	17	9	2	0	0	0	30
25 - 35	3	13	10	1	0	0	0	27
35 - 45	2	7	7	2	0	0	0	18
45 - 55	0	8	3	4	0	1	0	16
55 - 65	0	14	9	0	0	0	1	24
65 - 75	3	8	14	1	3	1	0	30
75 - 85	1	12	12	2	2	0	0	29
85 - 95	2	13	22	10	1	0	0	48
95 - 105	1	13	24	4	2	1	0	45
105 - 115	2	9	18	0	0	0	1	30
115 - 125	0	12	16	4	0	0	0	32
125 - 135	0	10	11	9	2	0	0	32
135 - 145	3	9	26	6	1	0	0	45
145 - 155	4	9	47	18	0	0	0	78
155 - 165	0	9	73	62	23	11	0	178
165 - 175	0	10	86	104	54	20	3	277
175 - 185	2	20	58	98	55	16	2	251
185 - 195	0	14	55	39	30	7	4	149
195 - 205	0	9	50	32	10	3	0	104
205 - 215	4	14	34	17	11	3	0	83
215 - 225	2	13	28	12	7	3	4	69
225 - 235	2	9	26	20	6	3	1	67
235 - 245	2	9	30	13	9	0	0	63
245 - 255	0	6	20	20	4	3	0	53
255 - 265	2	7	17	7	0	1	0	34
265 - 275	1	4	15	6	0	1	0	27
275 - 285	1	4	9	2	0	0	0	16
285 - 295	0	12	5	1	0	0	0	18
295 - 305	1	4	8	2	0	1	0	16
305 - 315	2	13	9	0	0	0	0	24
315 - 325	2	18	14	4	0	0	0	38
325 - 335	1	11	21	8	4	0	0	45
335 - 345	2	16	28	15	7	0	0	68
345 - 355	1	7	41	11	4	1	0	65
Sub-Total	49	386	886	543	238	76	16	2194
							Calms	13
Average Wind Speed: 3.80 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

2013: FOURTH QUARTER
WIND SPEEDS AT 10 FEET HEIGHT (m/s)

Directions	Hours by Wind Speed Class							
	0.5 - 1	1 - 2	2 - 4	4 - 6	6 - 8	8 - 10	>= 10	Total
355 - 5	2	13	48	47	27	13	8	158
5 - 15	1	14	35	22	12	5	3	92
15 - 25	0	10	17	4	4	0	0	35
25 - 35	0	10	18	2	0	0	0	30
35 - 45	1	3	13	3	1	0	0	21
45 - 55	0	10	10	2	2	0	0	24
55 - 65	0	7	10	2	1	0	0	20
65 - 75	1	8	7	2	0	0	0	18
75 - 85	1	4	13	0	0	0	0	18
85 - 95	0	14	13	1	0	0	0	28
95 - 105	0	8	5	0	0	0	0	13
105 - 115	1	8	9	0	0	0	0	18
115 - 125	2	8	11	0	0	0	0	21
125 - 135	0	11	12	0	0	0	0	23
135 - 145	2	11	14	1	0	0	0	28
145 - 155	2	7	6	1	2	0	0	18
155 - 165	2	10	18	6	7	1	0	44
165 - 175	2	18	16	13	7	1	0	57
175 - 185	1	14	20	10	8	6	1	60
185 - 195	3	15	10	11	4	2	0	45
195 - 205	0	16	17	3	6	7	0	49
205 - 215	3	8	13	1	9	4	3	41
215 - 225	1	11	22	6	11	4	5	60
225 - 235	0	23	34	10	5	9	7	88
235 - 245	2	19	43	6	7	2	1	80
245 - 255	3	11	41	8	2	1	1	67
255 - 265	2	24	39	1	0	2	1	69
265 - 275	3	9	20	0	0	0	1	33
275 - 285	1	11	21	0	0	0	0	33
285 - 295	2	8	23	0	0	0	0	33
295 - 305	2	14	16	1	0	0	0	33
305 - 315	1	15	19	1	1	0	0	37
315 - 325	2	14	47	11	2	1	1	78
325 - 335	1	20	71	26	4	0	0	122
335 - 345	1	25	58	37	16	14	3	154
345 - 355	0	15	55	42	29	21	14	176
Sub-Total	45	446	844	280	167	93	49	1924
							Calms	245
Average Wind Speed: 3.27 m/s							**Missing/Incomplete***	197

* Indicates that some or all of the data fields in the dataset are missing or incomplete for an hour.

Appendix 3.1B
Detailed Emission Calculations

APPENDIX 3.1B

Table 3.1B-1: GE Performance Runs for 7HA.02 Gas Turbine
Table 3.1B-2: Rapid Response Startup Emissions
Table 3.1B-3: Emissions and Operating Parameters for Auxiliary Boiler
Table 3.1B-4: Emissions and Operating Parameters for Emergency Firepump Engine
Table 3.1B-5: Emissions and Operating Parameters for Cooling Tower
Table 3.1B-6: Detailed Calculations for Maximum Hourly, Daily, and Annual Criteria Pollutant Emissions
Table 3.1B-7: Detailed Calculations for Maximum Hourly, Daily, and Annual Fuel Use
Table 3.1B-8: Gas Turbine Commissioning Schedule and Emissions
Table 3.1B-9: Greenhouse Gas Emissions Calculations
Table 3.1B-10: Nitrogen Emissions
Table 3.1B-11: Emissions from Existing Blythe Energy Project
Table 3.1B-12: Non-Criteria Pollutant Emissions Calculations
Table 3.1B-13: Non-Criteria Pollutant Emissions Calculations for the BEP Gas Turbines

Table 3.1B-1
Sonoran Energy Project
GE Performance Runs for 7HA.02 Gas Turbine

Case Description	Hot 100% Load DF w/Evap Cooling	Hot 100% Load no DF w/Evap Cooling	Hot Min Load no Evap Cooling	Avg 100% Load DF w/Evap Cooling	Avg 100% Load no DF w/Evap Cooling	Avg. Min Load no Evap Cooling	ISO 100% Load w/ DF, w/ Evap Cooling	ISO 100% Load w/ DF, no Evap Cooling	Cold 100% Load w/ DF	Cold 100% Load no DF	Cold Min Load
Case #	**9**	**10**	**11**	**6**	**7**	**8**	**1**	**2**	**3**	**4**	**5**
Ambient Conditions											
Dry Bulb, °F	110.0	110.0	110.0	74.0	74.0	74.0	59.0	59.0	39.0	39.0	39.0
Wet Bulb, °F											
RH, %	13.0	13.0	13.0	31.0	31.0	31.0	60.0	60.0	47.0	47.0	47.0
Altitude, ft	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0	350.0
Ambient Pressure, psia	14.511	14.511	14.511	14.511	14.511	14.511	14.511	14.511	14.511	14.511	14.511
Engine Inlet											
Comp Inlet Temp, °F	55.0	55.0	110.0	58.7	58.7	58.7	59.0	59.0	39.0	39.0	39.0
RH, %	75.2	75.2	13.0	85.0	85.0	31.0	60.0	92.9	47.0	47.0	47.0
Inlet chiller	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Evap Cooling	on	on	off	on	on	off	on	off	off	off	off
Partload %	**100**	**100**	**64**	**100**	**100**	**43**	**100**	**100**	**100**	**100**	**40**
Gross Power Output, kW	**526,546**	**497,325**	**289,030**	**525,291**	**496,258**	**248,868**	**531,397**	**523,256**	**543,923**	**515,193**	**245,648**
Plant Net Output, kW	**510,750**	**483,151**	**288,240**	**509,532**	**482,115**	**248,080**	**530,590**	**522,450**	**526,518**	**499,737**	**244,860**
Gross HR, Btu/kW-hr, HHV	**6,514**	**6,451**	**6,817**	**6,488**	**6,421**	**7,054**	**6,491**	**6,484**	**6,511**	**6,444**	**7,177**
Net HR, Btu/kW-hr, HHV	**6,715**	**6,640**	**6,836**	**6,688**	**6,609**	**7,076**	**6,501**	**6,494**	**6,726**	**6,643**	**7,200**
Fuel Flow											
MMBtu/hr, HHV	3,208	3,208	1,970	3,186	3,186	1,756	3,228	3,171	3,320	3,320	1,763
SCFM	51,854	51,854	31,846	51,502	51,502	28,374	52,173	51,260	53,659	53,659	28,493
lb/hr	140,295	140,295	86,164	139,346	139,346	76,771	141,161	138,690	145,185	145,180	77,094
NOx Control	DLN/SCR	DLN/SCR	DLN/SCR	DLN/SCR	DLN/SCR	DLN/SCR	DLN/SCR	DLN/SCR	DLN/SCR	DLN/SCR	DLN/SCR
Duct Firing											
MMBtu/hr, LHV	199.4			199.44			199.44	199.44	199.44		
MMBtu/hr, HHV	221.6	0	0	221.6	0	0	221.6	221.6	221.6	0	0
lb/hr	9,691	0	0	9,691	0	0	9,691	9,691	9,691	0	0
SCFM	3,582	0	0	3,581.7	0.0	0.0	3,582	3,582	3,582	0	0
Total Heat Input, MMBtu/hr HHV	3,430	3,208.1	1,970.3	3,408	3,186	1,756	3,450	3,393	3,542	3,320	1,763
Exhaust Parameters											
Temperature, °F	163	176	165	158	168	153	157	157	155	163	150
lb/sec	1617	1614	1136	1580	1577	998	95813	94722	98405	98235	58937
lb/hr	5821700	5811500	4088800	5686400	5676200	3591900	5748800	5683300	5904300	5894100	3536200
%O2 (vol., dry)	12.14%	12.76%	13.93%	12.03%	12.67%	13.83%	12.03%	12.09%	12.09%	12.70%	13.70%
%CO2 (vol., dry)	5.03%	4.67%	4.01%	5.09%	4.72%	4.06%	5.09%	5.05%	5.06%	4.71%	4.14%
Estimated Maximum Emissions (at Stack)											
NOx ppmvd Ref 15% O2	2	2	2	2	2	2	2	2	2	2	2
NOx as NO2, lb/hr	25.2	23.4	14.4	25.0	23.3	12.8	25.3	24.9	26.0	24.2	12.9
CO ppmvd Ref 15% O2	2	2	2	2	2	2	2	2	2	2	2
CO, lb/hr	15.3	14.3	8.75	15.2	14.2	7.80	15.4	15.1	15.8	14.8	7.83
VOC, ppmvd Ref 15% O2	2	1	1	2	1	1	2	2	2	1	1
VOC, lb/hr		4.08	2.5	8.69	4.05	2.23	8.8	8.66	9.03	4.22	2.24
NH3 ppmvd Ref 15% O2	5	5	5	5	5	5	5	5	5	5	5

Table 3.1B-2
Sonoran Energy Project
Rapid Response Startup Emissions

Event	Duration, minutes	Emissions, lb/event				Emissions, lb/hr			
		NOx	CO	VOC	PM10/PM2.5	NOx	CO	VOC	PM10/PM2.5
Cold Start	45	181	132	10	6.6	188	136	12	9.1
Warm Start	40	146	130	10	5.9	155	135	13	9.2
Hot Start	21	97	123	9	3.1	114	133	15	9.6
Shutdown	14	4.9	136	28	2.1	25	148	35	9.8

Duration and lb/event from rev GE memo dated 2/24/15
lb/hr calculated assuming full load operation with duct firing for the rest of the hour.

Rapid Response Lite Startup Emissions

Event	Duration, minutes	Emissions, lb/event				Emissions, lb/hr			
		NOx	CO	VOC	PM10/PM2.5	NOx	CO	VOC	PM10/PM2.5
Cold Start	45	140	127	10	6.6	147	131	12	9.1
Warm Start	40	95	124	9	5.9	104	129	12	9.2
Hot Start	20	51	119	9	2.9	68	130	15	9.6
Shutdown	14	4.9	136	28	2.1	25	148	35	9.8

Duration and lb/event from rev GE memo dated 2/24/15
lb/hr calculated assuming full load operation with duct firing for the rest of the hour.

Table 3.1B-3
Sonoran Energy Project
Emissions and Operating Parameters for Auxiliary Boiler

Mfr/Model	Babcock & Wilcox FM 10-66 Package Boiler or equivalent		
Fuel	Natural Gas		
Load	100%	50%	25%
Steam Production, lb/hr	50,000	25,000	12,500
Steam Pressure, psi	300.00	300.00	300.00
Maximum Heat Input (MMBtu/hr)	66.3	32.3	16.2
F-factor (dscf/MMBtu)	8,710		
Reference O2	3.00%		
Actual O2	3.00%		
Exhaust Temperature (F)	600	480	441
Exhaust Rate (dscfm @ 3% O2)	10,958	5,335	2,683
Exhaust Rate (wacfm @ actual O2)	28,481	12,297	5,927

Pollutant	Emission Rate, ppmvd @ 3% O2	Emission Factors (lb/MMBtu)	Maximum Emissions (lb/hr)
NOx (normal operation)	7	0.0084	0.56
NOx (startup/shutdown)	25	0.0301	1.99
NOx (boiler tuning)	100	0.1202	7.97
SOx		0.0014	0.09
CO (normal operation)	50	0.0366	2.43
CO (startup/shutdown)	250	0.1830	12.13
VOC (normal operation)	7	0.0042	0.28
VOC (startup/shutdown)	25	0.0150	0.99
PM10	0.005 gr/dscf	0.007	0.46

Stack Diameter	35 inches	0.89 meters
Stack Height	50 feet	

Table 3.1B-4
Sonoran Energy Project
Emissions and Operating Parameters for Emergency Firepump Engine

Make/Model	Clarke JU6H-UFADR0 or equivalent
EPA Emissions Certification	Tier 3
Rating	238 bhp
Fuel	Diesel
Fuel Consumption	11.7 gal/hr
	1.61 MMBtu/hr(1)
Exhaust Temperature	848 deg F
Exhaust Diameter	6.065 inches
Exhaust Flow Rate	1513 acfm
Exhaust Velocity	125.7 ft/sec

	NOx	CO	VOC	SOx	PM10
Emission Factor (g/bhp-hr)	2.56	0.60	0.07	0.0047	0.08
Hourly Emissions (lb/hr)	1.34	0.31	0.04	0.0025	0.04

Notes:
(1) Based on default heat content for #2 diesel of 138,000 Btu/gal (from 40 CFR 98)

Table 3.1B-5
Sonoran Energy Project
Emissions and Operating Parameters for Cooling Tower

Manufacturer	SPX/Marley
Model	F448A48A3.010A
Number of towers	1
Number of cells per tower	10
Fan stack diameter (ft)	28
Exhaust temperature (F)	79.00
Exhaust flow rate per cell (acfm)	1,359,101
Water Circulation Rate, gal/min	129,480
Drift Rate	0.0005%
Water Drift (lbs/hr)	323.57
TDS Level, mg/L	5000
Emissions	
PM10 lb/hr	1.62
PM10 tpy	7.10
PM10 emissions per cell, lb/hr	0.162
PM10 emissions per cell, g/s	0.020

Table 3.1B-6
Sonoran Energy Project
Detailed Calculations for Maximum Hourly, Daily, and Annual Criteria Pollutant Emissions

Equipment	max. hour	hrs/day	hrs/yr	NOx lb/hr		SOx lb/hr		CO lb/hr		VOC	PM10/PM2.5	NH3
				short-term (1)	annual avg (2)	short-term (1)	annual avg (2)	short-term (1)	annual avg (2)	lb/hr	lb/hr	lb/hr (3)
Gas Turbine 1, base load, no duct firing	0	0	5500	24.2	18.1	4.4	2.3	14.8	11.0	4.2	8.0	22.4
Gas Turbine 1, base load w/ duct firing	0	20	1500	26.0	19.4	4.9	2.5	15.8	11.8	9.0	10.0	23.9
Gas Turbine 1, cold starts	1	1	50	187.5	187.5	4.9	2.5	136.0	136.0	12.3	9.1	11.2
Gas Turbine 1, warm starts	0	0	150	154.7	154.7	4.9	2.5	135.3	135.3	13.0	9.2	11.2
Gas Turbine 1, hot starts	0	1	0	113.9	113.9	4.9	2.5	133.3	133.3	14.9	9.6	11.2
Gas Turbine 1, shutdowns	0	2	200	24.8	24.8	4.9	2.5	148.1	148.1	34.9	9.8	11.2
Auxiliary Boiler normal ops	1	22	6600	0.56	0.56	0.09	0.05	2.43	2.43	0.28	0.46	0.00
Auxiliary Boiler startup	0	2	400	1.99	1.99	0.09	0.05	12.13	12.13	0.69	0.46	0.00
Emergency Firepump Engine	0	24	200	1.34	1.34	0.00	0.00	0.31	0.31	0.04	0.04	0.00
Cooling Tower 1	1	24	8760	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.62	0.00

Notes:
1. Based on 2.0 ppm, 1-hour average
2. Based on 1.5 ppm, annual average
3. Based on 5.0 ppm, 3-hour average

Table 3.1B-6 (cont'd)
Detailed Calculations for Maximum Hourly, Daily, and Annual Criteria Pollutant Emissions

	NOx			SOx			CO			VOC			PM10			NH3	
Equipment	Max lb/hr	Max lb/day	Total tpy	Max lb/hr	Max lb/day	Total tpy	Max lb/hr	Max lb/day	Total tpy	Max lb/hr	Max lb/day	Total tpy	Max lb/hr	Max lb/day	Total tpy	Max lb/hr	Total tpy
Gas Turbine 1, base load, no duct firing	0.0	0.0	49.90	0.0	0.0	6.3	0.0	0.0	30.4	0.0	0.0	11.6	0.0	0.0	22.0	0.0	61.6
Gas Turbine 1, base load w/ duct firing	0.0	520.0	14.52	0.0	98.1	1.8	0.0	316.0	8.8	0.0	180.6	6.8	10.0	200.0	7.5	0.0	17.9
Gas Turbine 1, cold starts	187.5	187.5	4.69	4.9	4.9	0.1	136.0	136.0	3.4	12.3	12.3	0.3	0.0	9.1	0.2	11.2	0.3
Gas Turbine 1, warm starts	0.0	0.0	11.60	0.0	0.0	0.2	0.0	0.0	10.1	0.0	0.0	1.0	0.0	0.0	0.7	0.0	0.8
Gas Turbine 1, hot starts	0.0	113.9	0.00	0.0	4.9	0.0	0.0	133.3	0.0	0.0	14.9	0.0	0.0	9.6	0.0	0.0	0.0
Gas Turbine 1, shutdowns	0.0	49.7	2.48	0.0	9.8	0.2	0.0	296.2	14.8	0.0	69.8	3.5	0.0	19.5	1.0	0.0	1.1
Auxiliary Boiler normal ops	0.6	12.3	1.84	0.09	2.01	0.15	2.4	53.4	8.00	0.28	6.1	0.92	0.46	10.20	1.5	0.00	0.00
Auxiliary Boiler startup	0.0	4.0	0.40	0.0	0.18	0.01	0.0	24.3	2.43	0.0	1.39	0.14	0.00	0.93	0.1	0.00	0.00
Emergency Firepump Engine	0.0	32.2	0.13	0.0	0.06	0.0002	0.0	7.6	0.03	0.0	0.9	0.00	0.00	1.01	4.20E-03	0.00	0.00
Cooling Tower	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.62	38.90	7.1	0.00	0.00
Total, SEP	188.1 lb/hr	919.6 lb/day	85.6 tpy	5.0 lb/hr	120.0 lb/day	8.8 tpy	138.4 lb/hr	966.6 lb/day	78.0 tpy	12.5 lb/hr	286.0 lb/day	24.2 tpy	12.1 lb/hr	289.3 lb/day	40.1 tpy	11.2 lb/hr	81.7 tpy
Total, Current BEP II License		1,168.0	168.4		154.0	11.8		892.0	151.6		505.1	51.9		346.6	61.0		272.9

Table 3.1B-7
Sonoran Energy Project
Detailed Calculations for Maximum Hourly, Daily, and Annual Fuel Use

Equipment	Operating Schedule			Heat Input (1,2)			Power Generation	
	max. hour	hrs/day	hrs/yr	MMBtu/hr	MMBtu/day	MMBtu/yr	MW	GWh/yr
Gas Turbine 1, base load w/ duct firing	0	20	1500	3,557.9	71,158.3	5,336,876.1	543.9	815.9
Gas Turbine 1, base load, no duct firing	0	4	5500	3,335.3	13,341.2	18,344,090.8	515.2	2,833.6
Gas Turbine 1, cold starts	1	0	50	2,896.7	0.0	144,836.4	352.8	17.6
Gas Turbine 1, warm starts	0	0	150	2,918.4	0.0	437,752.5	338.5	50.8
Gas Turbine 1, hot starts	0	0	0	2,478.3	0.0	0.0	221.5	0.0
Gas Turbine 1, shutdowns	0	0	200	2,918.4	0.0	583,670.0	324.5	64.9
Auxiliary Boiler normal ops	1	24	6800	66.3	1,590.2	450,564.6	0	0.0
Auxiliary Boiler startup	0	0	200	66.3	0.0	13,251.9	0	0.0
Emergency Firepump Engine	0	24	200	1.6	38.8	322.9	0	0.0
Total, gas turbine					84,500	24,847,230	--	3,790.0
Total, aux boiler					1,600	463,820	--	0
SEP Total					86,128	25,311,365	--	3,790.0
Current BEP II license, gas turbines					114,765	37,900,412		
Current BEP II license, aux. boiler					1,440	150,007		
Current BEP II license, total					116,208	38,050,564		

Notes:
1. Reflects startup fuel consumption estimates for "Rapid Response" Startup Curves
2. Shutdown heat input assumes 12 min at max load w/o db and 48 min at same output as hot startup

Table 3.1B-8
Sonoran Energy Project
Gas Turbine Commissioning Schedule and Emissions

Altagas Sonoran 7HA.02 Rapid Response "Lite" Combined Cycle Power Plant Typical Commissioning Emissions, IPS 1006605, Rev 9, 2/9/15

TEST DESCRIPTION	GT LOAD	TOTAL FIRING	Estimated Emissions After Controls				Estimated Total Tons After Control				Estimated Max lb/day (from GE 2/9/15 memo)			
			NOx lbs/hr	CO lbs/hr	VOC lbs/hr	PM10 lbs/hr	NOx tons	CO tons	VOC tons	PM10 tons	NOx tons	CO tons	VOC tons	PM10 tons
	%	hr												
Power island pre-commissioning tests														
Auxiliary boiler firing, steam to gland seal, condenser vacuu	0	0.0												
HRSG chemical cleaning	0	0.0												
GT Initial Start-up														
GT first firing on primary fuel	0	5.0	295	228	17	8.0	**0.74**	**0.57**	**0.04**	**0.02**				
GT FSNL on primary fuel & generator filtration	0	7.5	295	228	17	8.0	**1.1**	**0.86**	**0.07**	**0.03**				
GT intertriping matrix checks	0	0.0	295	228	17	8.0	**0.0**	**0.00**	**0.00**	**0.00**				
GT generator short circuit, overspeed and open circuit tests	0	12.5	295	228	17	8.0	**1.8**	**1.4**	**0.11**	**0.05**				
GT Sync & Load														
GT first synchro	8	5.0	97	4919	464	8.0	**0.2**	**12.3**	**1.2**	**0.02**				
HRSG Steam blows														
HRSG MS steam blows	25	60.0	625	44	5.0	8.0	**18.7**	**1.3**	**0.15**	**0.24**				
HRSG CRH & HRH steam blows	25	43.75	625	44	5.0	8.0	**13.7**	**1.0**	**0.11**	**0.18**				
HRSG LP steam blows	25	15.0	625	44	5.0	8.0	**4.7**	**0.33**	**0.04**	**0.06**				
HRSG Operation on Steam Bypass														
HRSG startup, steam bypasses checks	50	60.0	187	28	2.5	8.0	**5.6**	**0.83**	**0.07**	**0.24**				
HRSG steam safety valves tests	50	60.0	187	28	2.5	8.0	**5.6**	**0.83**	**0.07**	**0.24**				
HRSG & BOP control loop tuning	50	40.0	187	28	2.5	8.0	**3.7**	**0.55**	**0.05**	**0.16**				
Load Catalyst														
GT Loading up to Base on PPM with Primary Fuel														
Part load tests	50	20.0	15	2.8	1.7	8.0	**0.15**	**0.03**	**0.02**	**0.08**				
Full load tests	100	7.5	25	4.1	2.6	8.0	**0.09**	**0.02**	**0.01**	**0.03**				
HRSG operation on bypass for steam purity	50	30.0	15	2.8	1.7	8.0	**0.22**	**0.04**	**0.03**	**0.12**				
ST Initial Start-up														
ST generator filtration	7	7.5	260	104	12	8.0	**1.0**	**0.39**	**0.05**	**0.03**				
ST intertriping checks	0	0.0	159	126	15	8.0	**0.0**	**0.0**	**0.0**	**0.00**				
ST generator short circuit, overspeed and open circuit tests	25	15.0	337	24	4.3	8.0	**2.5**	**0.18**	**0.03**	**0.06**				
ST Sync & Load														
ST first synchro	25	7.5	337	24	4.3	8.0	**1.3**	**0.1**	**0.02**	**0.03**				
ST tests on load with one GT	75	50.0	20	3.3	2.0	8.0	**0.49**	**0.08**	**0.05**	**0.20**				
GT Tuning up to Base with Primary Fuel														
Part load tests	50	52.5	15	2.8	1.7	8.0	**0.39**	**0.07**	**0.05**	**0.21**				
Full load tests	100	20.0	25	4.1	2.6	8.0	**0.25**	**0.04**	**0.03**	**0.08**				
CC Operation Tuning														
GT part load, full load rejection & house load tests	75	25.0	20	3.3	2.0	8.0	**0.24**	**0.04**	**0.03**	**0.10**				
GT, HRSG & ST trip tests and operation tuning	75	62.5	20	3.3	2.0	8.0	**0.61**	**0.10**	**0.06**	**0.25**				
ST full load	100	27.5	25	4.1	2.6	8.0	**0.34**	**0.06**	**0.04**	**0.11**				
Hot, warm, cold start-ups	50	60.0	15	2.8	1.7	8.0	**0.45**	**0.08**	**0.05**	**0.24**				
Restart	75	15.0	20	3.3	2.0	8.0	**0.15**	**0.02**	**0.02**	**0.06**				
Full Load	100	22.5	25	4.1	2.6	8.0	**0.28**	**0.05**	**0.03**	**0.09**				
GT's & ST part load, full load rejection & house load tests	100	22.5	25	4.1	2.6	8.0	**0.28**	**0.05**	**0.03**	**0.09**				
CC Performance tests (gaseous, noise emissions, output & HR)														
Capacity performance tests with primary fuel	100	45.0	25	4.1	2.6	8.0	**0.56**	**0.09**	**0.06**	**0.18**				
Precision performance tests with primary fuel	100	15.0	25	4.1	2.6	8.0	**0.19**	**0.03**	**0.02**	**0.06**				
Special tests														
Noise guarantee additional tests at part load	75	22.5	20	3.3	2.0	8.0	**0.22**	**0.04**	**0.02**	**0.09**				
Grid code tests, NPI tests, etc	75	0.0	20	3.3	2.0	8.0	**0.0**	**0.0**	**0.0**	**0.0**				
Other		0.0	159	126	15	8.0	**0.0**	**0.0**	**0.0**	**0.0**				
Reliability Run test														
9 days RR on primary fuel	100	384.0	25	4.1	2.6	8.0	**4.8**	**0.8**	**0.5**	**1.54**				
Commissioning Ends														
Total		1220.3	NA	NA	NA	NA	**70**	**22**	**3.0**	**4.9**				
Max Value			625	4919	464	8.0	**18.7**	**12.3**	**1.2**	**1.5**	**15,613**	**28,477**	**2,617**	**211**

Table 3.1B-9
Sonoran Energy Project
Greenhouse Gas Emissions Calculations

Unit	Total Number of Units	Heat Input (MMBtu/hr HHV)	Gross Output (kW)	Net Output (kW)	Operating Hours per year	Annual Fuel Use (MMBtu/yr HHV)	Estimated Annual Gross MWh	Estimated Annual Net MWh	Estimated Btu/kWh	Maximum Emissions, metric ton/yr				Facility-Wide Emissions, MT/yr CO2e	Facility-Wide Emissions, tons/yr CO2e	Facility-Wide CO2e MT/MWh		Gas Turbine CO2e lbs/MWh	
										CO2	CH4	N2O	SF6			Gross	Net	Gross	Net
Gas Turbine with duct firing	1	3,557.9	543,923	530,590	1500	5,336,876	815,884	795,885		283,175	5	0.5	--						
Gas Turbine Only	1	3,335.3	526,546	510,750	5500	18,344,091	2,896,003	2,809,123		973,337	18	1.8	--						
Gas Turbine startup/shutdown	1	varies	varies	varies	400	1,166,259	133,313	133,313		61,882	1	0.1	--						
Auxiliary Boiler	1	66.3	0	0	7000	463,816	n/a	n/a		24,610	0.5	0.05	--						
Fire Pump Engine	1	1.61	0	0	200	323	n/a	n/a		24	0.001	0.0002	--						
Circuit breakers	13	--	--	--	8760	0	n/a	n/a		--	--	--	0.0006						
Total						25,311,365	3,845,201	3,738,321	6,583	1,343,028	25	3	0.001						
CO2-Equivalent										1,343,028	633	754	13	1,344,428	1,481,963	0.350	0.360	771	793
Current Licensed Project										1,919,412	213	5		1,926,176					

Fuel	Emission Factors, kg/MMBtu			
	CO2 (1)	CH4 (2)	N2O (2)	SF6 (4)
Natural Gas	53.06	0.001	0.0001	n/a
Diesel Fuel	73.96	0.003	0.0006	n/a
Propane	62.87	0.003	0.0006	
Global Warming Potential (3)	1	25	298	22800

Notes: 1. 40 CFR 98, Table C-1 (revised 11/29/13).
2. 40 CFR 98, Table C-2 (revised 11/29/13).
3. 40 CFR 98, Table A-1 (revised 11/29/13).
4. Sulfur hexafluoride (SF6) will be used as an insulating medium in 2 circuit breakers. The SF6 contents of the circuit breakers is estimated as follows:
-- 1 245 kV breakers at 230 lb/breaker
-- 1 24 kV breaker at 25 lb/breaker
The IEC standard for SF6 leakage is less than 0.5%; the NEMA leakage standard for new circuit breakers is 0.1%. A maximum leakage rate of 0.5% per year is assumed.

Table 3.1B-10 Sonoran
Energy Project
Nitrogen Emissions

Annual NOx emissions, SEP	85.6 tpy
N/NO2 molecular weight ratio (14/46)	0.304
N emissions from NO2	26.0 tpy
Annual NH3 emissions, SEP	81.7 tpy
N/NH3 molecular weight ratio (14/17)	0.824
N emissions from NH3	67.3 tpy
Total Annual N from SEP	93.4 tpy
Annual Reductions in NOx from BEP	-105 tpy
N/NO2 molecular weight ratio (14/46)	0.304
Reduction in N emissions from BEP	-32.0 tpy
NOx ERCs provided for SEP	-108.8 tpy
N/NO2 molecular weight ratio (14/46)	0.304
N emissions from NO2	-33.1 tpy
Net N emissions change	28.3 tpy

Table 3.1B-11
Sonoran Energy Project
Emissions from Existing Blythe Energy Project

	Pollutant				
	NOx	SO2*	CO	VOC	PM10/PM2.5*
CT1 and CT2, with duct burner (each)					
pounds per hour	19.8	2.7	17.5	2.9	*6.2*
pounds per start	376	-	3600	-	--
pounds per day	2881	65	4002	119.5	*149.3*
CT1 and CT2, with duct burner (total)					
tons per year	97	*12*	97	24	*54.5*
Diesel fire water pump					
pounds per hour	9.39	0.62	2.02	0.75	6.70E-01
pounds per day	9.39	0.62	2.02	0.75	6.70E-01
tons per year	9.39E-02	6.20E-03	2.02E-02	7.50E-03	6.70E-03
Main cooling tower (each of 8 cells)					
pounds per hour	-	-	-	-	6.38E-02
pounds per day	-	-	-	-	1.53
tons per year	-	-	-	-	0.28
Chiller cooling tower (each of 12 cells)					
pounds per hour	-	-	-	-	3.00E-03
pounds per day	-	-	-	-	7.17E-02
tons per year	-	-	-	-	1.31E-02
Total, All Units					
pounds per hour	49.0	6.0	37.0	6.6	13.7
pounds per day	5,771.4	130.6	8,006.0	239.8	312.2
tons per year	97.1	12.0	97.0	24.0	56.9

Note:

* Gas turbine PM and SO2 emission rates reflect contemporaneous reductions proposed as part of this project.

Source:

BEP Title V permit (as amended May 7, 2015)

Table 3.1B-12
Sonoran Energy Project
Non-Criteria Pollutant Emissions Calculations

Gas Turbine

Pollutant	Uncontrolled Emission Factor, lb/MMBtu	Basis	Controlled Emission Factor, lb/MMBtu	Total Emissions, lb/hr (4)	Total Emissions, tpy (5)
Ammonia	6.71E-03	Permit Limit(3)	6.71E-03	23.9	81.7
Propylene	7.63E-04	0.5*CATEF(2)	3.82E-04	1.4	4.7
Hazardous Air Pollutants (HAPs) - Federal					
Acetaldehyde	4.00E-05	0.5*AP-42(1)	2.00E-05	7.12E-02	0.25
Acrolein	6.42E-06	0.5*AP-42(1)	3.21E-06	1.14E-02	0.04
Benzene	1.20E-05	0.5*AP-42(1)	5.99E-06	2.13E-02	0.07
1,3-Butadiene	4.30E-07	0.5*AP-42(1)	2.15E-07	7.65E-04	2.67E-03
Ethylbenzene	3.20E-05	0.5*AP-42(1)	1.60E-05	5.69E-02	0.20
Formaldehyde	9.00E-04	0.5*CATEF(2)	4.50E-04	1.60E+00	5.59
Hexane, n-	2.54E-04	0.5*CATEF(2)	1.27E-04	4.52E-01	1.58
Naphthalene	1.31E-06	0.5*AP-42(1)	6.53E-07	2.32E-03	0.01
Total PAHs (listed individually below)	6.43E-07	SUM	3.22E-07	1.14E-03	4.00E-03
Acenaphthene	1.86E-08	0.5*CATEF(2)	9.32E-09	3.32E-05	1.16E-04
Acenapthyene	1.44E-08	0.5*CATEF(2)	7.21E-09	2.57E-05	8.96E-05
Anthracene	3.32E-08	0.5*CATEF(2)	1.66E-08	5.91E-05	2.06E-04
Benzo(a)anthracene	2.22E-08	0.5*CATEF(2)	1.11E-08	3.95E-05	1.38E-04
Benzo(a)pyrene	1.36E-08	0.5*CATEF(2)	6.82E-09	2.43E-05	8.47E-05
Benzo(e)pyrene	5.34E-10	0.5*CATEF(2)	2.67E-10	9.50E-07	3.32E-06
Benzo(b)fluoranthrene	1.11E-08	0.5*CATEF(2)	5.54E-09	1.97E-05	6.88E-05
Benzo(k)fluoranthrene	1.08E-08	0.5*CATEF(2)	5.40E-09	1.92E-05	6.71E-05
Benzo(g,h,i)perylene	1.34E-08	0.5*CATEF(2)	6.72E-09	2.39E-05	8.35E-05
Chrysene	2.48E-08	0.5*CATEF(2)	1.24E-08	4.41E-05	1.54E-04
Dibenz(a,h)anthracene	2.30E-08	0.5*CATEF(2)	1.15E-08	4.09E-05	1.43E-04
Fluoranthene	4.24E-08	0.5*CATEF(2)	2.12E-08	7.54E-05	2.63E-04
Fluorene	5.70E-08	0.5*CATEF(2)	2.85E-08	1.01E-04	3.54E-04
Indeno(1,2,3-cd)pyrene	2.30E-08	0.5*CATEF(2)	1.15E-08	4.09E-05	1.43E-04
Phenanthrene	3.08E-07	0.5*CATEF(2)	1.54E-07	5.48E-04	1.91E-03
Pyrene	2.72E-08	0.5*CATEF(2)	1.36E-08	4.84E-05	1.69E-04
Propylene oxide	2.90E-05	0.5*AP-42(1)	1.45E-05	5.16E-02	0.18
Toluene	1.31E-04	0.5*AP-42(1)	6.53E-05	2.32E-01	0.81
Xylene	6.40E-05	0.5*AP-42(1)	3.20E-05	1.14E-01	0.40
Total HAPs					**9.14**

Notes:
(1) AP-42, Table 3.1-3, 4/00.
(2) From CARB CATEF database (converted from lbs/MMscf to lbs/MMBtu based on site natural gas HHV of 1,036 Btu/s
(3) Based on 5 ppm ammonia slip from SCR system.
(4) Based on maximum hourly heat input of 3,557.9 MMBtu/hr
(5) Based on proposed annual fuel use of 24,847,226 MMBtu/yr

Table 3.1B-12 (cont'd)
Auxiliary Boiler

Pollutant	Emission Factor, lb/MMscf	Basis	Emission Factor, lb/MMBtu (3)	Total Emissions, lb/hr (4)	Total Emissions, tpy (5)
Propylene	0.53	VCAPCD (1)	5.12E-04	0.03	0.12
Hazardous Air Pollutants (HAPs) - Federal					
Acetaldehyde	8.87E-03	CATEF (2)	8.56E-06	5.67E-04	1.99E-03
Acrolein	0.0027	VCAPCD (1)	2.61E-06	1.73E-04	6.04E-04
Benzene	4.31E-03	CATEF (2)	4.16E-06	2.76E-04	9.65E-04
Ethylbenzene	0.0069	VCAPCD (1)	6.66E-06	4.41E-04	1.54E-03
Formaldehyde	2.21E-01	CATEF (2)	2.13E-04	1.41E-02	4.95E-02
Hexane	0.0046	VCAPCD (1)	4.44E-06	2.94E-04	1.03E-03
Naphthalene	0.0003	VCAPCD (1)	2.90E-07	1.92E-05	6.72E-05
PAHs	0.0001	VCAPCD (1)	9.65E-08	6.40E-06	2.24E-05
Toluene	0.0265	VCAPCD (1)	2.56E-05	1.69E-03	5.93E-03
Xylene	0.0197	VCAPCD (1)	1.90E-05	1.26E-03	4.41E-03
Total HAPs					**6.60E-02**

Notes:
(1) Ventura County APCD, AB2588 Combustion Emission Factors, May 17, 2001.
(2) From CARB CATEF database.
(3) Converted from lbs/MMscf to lbs/MMBtu based on site natural gas HHV of 1,036 Btu/scf
(4) Based on maximum hourly heat input of 66.3 MMBtu/hr
(5) Based on proposed annual fuel use of 463,816 MMBtu/yr

Chemical	Units	Max. Conc. in Circ. Water (1)	Total Emissions, lb/hr	Total Emissions, tpy
Ammonia	ppm as NH3	NA	NA	NA
Arsenic	ppm as As	0.015	5.83E-07	2.55E-06
Cadmium	ppm as Cd	NA	NA	NA
Hexavalent Chromium	ppm as Cr	NA	NA	NA
Total Chromium	ppm as Cr	0	0.0	0.0
Copper	ppm as Cu	0.35	1.36E-05	5.95E-05
Lead	ppm as Pb	NA	NA	NA
Mercury	ppm as Hg	NA	NA	NA
Nickel	ppm as Ni	NA	NA	NA
Selenium	ppm as Se	0.045	1.75E-06	7.66E-06

Notes:
(1) From Section 2, Table 2.4. Assumes 5 cycles of concentration.
(2) Based on cooling tower water throughput of 7,768,800 gal/hr
68,055 MMgal/yr
and drift rate of 0.0005%

Diesel Fire Pump Engine

	Emission Rate, g/bhp-hr	Total Emissions, lb/hr	Total Emissions, tpy
Diesel Particulate Matter	0.08	0.04	4.20E-03

Table 3.1B-13
Sonoran Energy Project
Non-Criteria Pollutant Emissions Calculations for the BEP Gas Turbines

Pollutant	Uncontrolled Emission Factor, lb/MMBtu	Basis	Controlled Emission Factor, lb/MMBtu	Total Emissions, tpy (5)
Ammonia	1.34E-02	Permit Limit (3)	1.34E-02	213.9
Propylene	7.63E-04	0.5*CATEF(2)	3.82E-04	6.1
Hazardous Air Pollutants (HAPs) - Federal				
Acetaldehyde	4.00E-05	0.5*AP-42(1)	2.00E-05	0.32
Acrolein	6.42E-06	0.5*AP-42(1)	3.21E-06	0.05
Benzene	1.20E-05	0.5*AP-42(1)	5.99E-06	0.10
1,3-Butadiene	4.30E-07	0.5*AP-42(1)	2.15E-07	3.42E-03
Ethylbenzene	3.20E-05	0.5*AP-42(1)	1.60E-05	0.25
Formaldehyde	9.00E-04	0.5*CATEF(2)	4.50E-04	7.17
Hexane, n-	2.54E-04	0.5*CATEF(2)	1.27E-04	2.02
Naphthalene	1.31E-06	0.5*AP-42(1)	6.53E-07	0.01
Total PAHs (listed individually below)	6.43E-07	SUM	3.22E-07	5.12E-03
Acenaphthene	1.86E-08	0.5*CATEF(2)	9.32E-09	1.48E-04
Acenapthylene	1.44E-08	0.5*CATEF(2)	7.21E-09	1.15E-04
Anthracene	3.32E-08	0.5*CATEF(2)	1.66E-08	2.64E-04
Benzo(a)anthracene	2.22E-08	0.5*CATEF(2)	1.11E-08	1.77E-04
Benzo(a)pyrene	1.36E-08	0.5*CATEF(2)	6.82E-09	1.09E-04
Benzo(e)pyrene	5.34E-10	0.5*CATEF(2)	2.67E-10	4.25E-06
Benzo(b)fluoranthrene	1.11E-08	0.5*CATEF(2)	5.54E-09	8.82E-05
Benzo(k)fluoranthrene	1.08E-08	0.5*CATEF(2)	5.40E-09	8.60E-05
Benzo(g,h,i)perylene	1.34E-08	0.5*CATEF(2)	6.72E-09	1.07E-04
Chrysene	2.48E-08	0.5*CATEF(2)	1.24E-08	1.97E-04
Dibenz(a,h)anthracene	2.30E-08	0.5*CATEF(2)	1.15E-08	1.83E-04
Fluoranthene	4.24E-08	0.5*CATEF(2)	2.12E-08	3.38E-04
Fluorene	5.70E-08	0.5*CATEF(2)	2.85E-08	4.54E-04
Indeno(1,2,3-cd)pyrene	2.30E-08	0.5*CATEF(2)	1.15E-08	1.83E-04
Phenanthrene	3.08E-07	0.5*CATEF(2)	1.54E-07	2.45E-03
Pyrene	2.72E-08	0.5*CATEF(2)	1.36E-08	2.17E-04
Propylene oxide	2.90E-05	0.5*AP-42(1)	1.45E-05	0.23
Toluene	1.31E-04	0.5*AP-42(1)	6.53E-05	1.04
Xylene	6.40E-05	0.5*AP-42(1)	3.20E-05	0.51
Total HAPs				**11.71**

Notes:
(1) AP-42, Table 3.1-3, 4/00.
(2) From CARB CATEF database (converted from lbs/MMscf to lbs/MMBtu based on site natural gas HHV of 1,036 Btu/scf).
(3) Based on 10 ppm ammonia slip from SCR system.
(5) Based on maximum annual fuel use of 31,852,800 MMBtu/yr (permit limit)

Appendix 3.1C
Construction Impacts

APPENDIX 3.1C

Construction Impacts

3.1C.1 Construction Emissions

Construction of the proposed project is expected to last approximately 22 months. Construction activities will occur in the following main phases:

- Site preparation;
- Foundation work;
- Installation of major equipment; and
- Construction/installation of major structures.

The transmission route for the electricity generated by the project would use existing transmission infrastructure to the extent possible and would entail a short, approximately 1,320-foot transmission connection. Construction emissions related to the transmission line have been evaluated separately.

The emissions and resulting ambient air quality impacts were calculated for each phase and for both project and transmission line construction. The results of this analysis are discussed below.

Construction Activities and Emissions Calculations

Construction of the project will begin with site preparation activities, which include installation of drainage systems, underground utilities and conduits, grading and backfilling operations, and installation of pilings. After site preparation is finished, construction of the foundations and structures is expected to begin. Once the foundations and structures are finished, installation and assembly of the mechanical and electrical equipment are scheduled to commence. During grading and backfilling, engineered fill will be brought onsite to fill low areas where heavy equipment will be placed and excess soil removed during grading will be moved to adjacent property owned by the Project Owner. The excess soil will be stored in piles at this adjacent property until needed.

The primary emission sources during construction will include exhaust from heavy construction equipment and vehicles, and fugitive dust generated by grading and excavating activities.

Combustion emissions during construction will result from the following:

- Exhaust from diesel construction equipment used for site preparation, grading, excavation, trenching, and construction of onsite structures;
- Exhaust from water trucks used to control construction dust emissions;
- Exhaust from portable welding machines;
- Exhaust from pickup trucks and diesel trucks used to transport workers and materials around the construction site;
- Exhaust from diesel trucks used to deliver concrete, fuel, and construction supplies to the construction site including the heavy hauling of major components using truck and/or rail; and
- Exhaust from vehicles used by workers to commute to the construction site.

Fugitive dust emissions from the construction will result from the following:

- Dust entrained during site preparation and grading/excavation at the construction site;

- Dust entrained during onsite travel on paved and unpaved surfaces;
- Dust entrained during aggregate and soil loading and unloading operations; and
- Wind erosion of areas disturbed during construction activities.

To determine the potential worst-case daily construction impacts, exhaust and dust emission rates have been evaluated for each source of emissions. Maximum short-term exhaust emissions impacts are calculated based on the equipment mix expected during Month 5 of the construction schedule, while maximum fugitive dust emissions are expected to occur during Month 13.[1] Annual emissions are based on the average equipment mix during the peak 12-month period out of the overall 22-month construction period. The detailed construction emissions calculations are shown in the tables attached to this analysis. As discussed in the modeling protocol submitted to the MDAQMD and CEC (see Appendix 3.1E), the CalEEMod model was used to calculate construction emissions for the proposed project. CalEEMod calculations were supplemented with manual calculations for windblown dust and some fugitive dust emissions, since those types of emissions are not handled well by the model. The following section provides additional details regarding the assumptions used in calculating emissions using CalEEMod, as well as the procedures used to calculate dust emissions external to the model.

Emissions of Fugitive Dust from Onsite Construction Activities. CalEEMod generates estimates for fugitive dust emissions only during the "grading" phase of the construction period. To ensure that fugitive dust emissions from onsite construction activities were not underestimated, the CalEEMod model phase type "Grading" was selected for the entire construction period. With this phase type selection, the CalEEMod model calculates dust emissions associated with various activities including grading, dozer operation, crawler tractor operation, and loader/loading activities.[2]

Emissions of Fugitive Dust from Soil Movement. Emissions from the import of fill material to SEP and the movement of excess soil from SEP to adjacent property owned by the Project Owner during Months 4-6 of the construction period were calculated manually. Dust emission from the soil movement activities result from several major activities:

- Loading of fill material onto storage piles. Emissions from adding material onto a receiving surface were calculated using EPA AP-42 methods. The amount of excess soil movement for these calculations was determined by estimating the amount of excess soil moved during each month. The material loaded onto the piles will be treated to control fugitive emissions.
- Haul truck traffic to the storage area. For the hauling of excess soil to the adjacent property, the haul trucks were assumed to travel on the access road between the two plants (BEP and SEP) and then via Riverside Avenue onto the dirt road that is west of Buck Blvd to the storage pile area (roughly halfway between the north and south boundary fences of the adjacent property). EPA AP-42 methods are used to calculate fugitive dust emissions for these unpaved haul truck travel.
- Windblown dust. Emissions of windblown dust from the soil storage pile at the adjacent property were estimated using the methods described in the SCAQMD CEQA air quality handbook.[3] The storage pile area was estimated by assuming a pile height of 15 feet and a rectangular surface area; the silt content approximated as 4.3% (consistent with the

[1] See calculations in Attachment 3.1C-1.

[2] Section 4.3 of the CalEEMod User Guide, Appendix A.

[3] CEQA Air Quality Handbook, South Coast Air Quality Management District, Table A9-9-E

silt content of the soil). Dust suppression methods will be used to minimize windblown dust emissions from the soil storage pile until vegetation is established to hold the soil in place.

Detailed assumptions and calculations are documented in Attachment 3.1C-1.

Windblown Dust at the SEP Construction Site. Emissions of windblown dust are not accounted for in CalEEMod and must be calculated manually. The disturbed area for these calculations was determined by dividing the total active construction area (25 acres) by the months of construction. A PM_{10} emission factor of 0.011 ton/acre-month was used to estimate these emissions.[4]

Construction Access. As described in Section 2 of the Petition to Amend, primary construction access will be via a temporary construction access road off Hobson Way, at the southeast corner of the plant site. Additional construction access will be via the permanent plant access road to Hobson Way, at the southwest corner of the plant site. These primary construction access roads will be paved. Other portions of the SEP site will be graveled to provide internal access to project facilities and site buildings. The construction worker parking and laydown areas will be also be graveled to reduce the generation of fugitive dust. For the construction air quality impact analysis, onsite worker and delivery truck travel was assumed to occur on graveled surfaces (workers traveling to and from parking areas, delivery trucks traveling to and from laydown areas).

Onsite Vehicle Emissions. For delivery and haul vehicles, the onsite travel distance was taken as the distance from the plant entrance to the center of the laydown area. For worker vehicles, the onsite travel distance was taken as the distance from the plant entrance to the center of the parking area.

CalEEMod does not calculate exhaust emissions from delivery and worker vehicles traveling within the construction site, so these exhaust emissions were evaluated manually using the ratio of the onsite vehicle trip distance (one-way trip distances of 0.27 mile for worker travel and 0.46 mile for delivery and haul truck travel) to the offsite vehicle trip distances (one-way trip distances of 41 miles for workers and 60 miles for delivery and haul trucks).

For onsite vehicle fugitive dust emissions, EPA AP-42 methods were used to calculate dust emissions. As discussed above, onsite vehicle travel (workers, delivery and haul trucks) was assumed to occur on graveled surfaces.

Paved/Unpaved Surface Travel Emissions Calculation Assumptions. The CalEEMod model default silt content and silt loading values were used for the unpaved/paved surface travel emission calculations. As described in the CalEEMod model user guide (Section 4.4.3), EPA AP-42 methods are used to calculate fugitive dust emissions for paved and unpaved road travel. The CalEEMod model defaults for silt content/silt loading are based on statewide averages; these values are a silt content of 4.3% and a silt loading of 0.1 g/m2.

Exhaust Emission Source Assumptions. The number, type, and engine rating of the equipment used in the construction impact analysis were based on equipment schedules provided by the owner's engineer. The CalEEMod model default engine load factors were used for the construction emission calculations (a function of the type of construction equipment in question). Due to the large number of construction vehicles required for the project (which

[4] Source: Table ES-2, "Improvement of Specific Emission Factors (BACM Project No. 1), Final Report", prepared for South Coast AQMD by Midwest Research Institute, March 1996.

impacts the availability of Tier 4 engines), it was assumed that EPA Tier 4i engines would be used for the larger equipment (engines equal to greater than 75 hp) and EPA Tier 4 engines would be used for smaller equipment (engines <75 hp).

Available Mitigation Measures

Listed below are typical mitigation measures that will be used to control exhaust emissions from the diesel equipment and potential emissions of fugitive dust during construction activities.

- Dust suppressants will be applied to unpaved surface travel and disturbed areas in the project construction site as frequently as necessary to prevent fugitive dust plumes. The frequency of application can be reduced or eliminated during periods of precipitation.
- The vehicle speed limit will be 10 miles per hour within the construction site.
- The construction site entrances will be posted with visible speed limit signs.
- Construction equipment vehicle tires will be inspected and cleaned as necessary to be cleaned free of dirt prior to entering paved roadways.
- Gravel ramps of at least 20 feet in length will be provided at the tire cleaning station.
- Unpaved exits from the construction site will be graveled or treated to prevent track-out to public roadways.
- Construction vehicles will enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the Compliance Project Manager.
- Construction areas adjacent to any paved roadway will be provided with sandbags or other measures as specified in the Storm Water Pollution Prevention Plan (SWPPP) to prevent run-off to roadways.
- Paved roads within the construction site will be cleaned at least once per day (or less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.
- At least the first 500 feet of any public roadway exiting from the construction site will be cleaned at least once daily when dirt or runoff from the construction site is visible on public roadways.
- Soil storage piles and disturbed areas that remain inactive for longer than 10 days will be covered or treated with appropriate dust suppressant compounds.
- Vehicles used to transport solid bulk material on public roadways and having the potential to cause visible emissions will be provided with a cover, or the materials will be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.
- Wind erosion control techniques (such as windbreaks, chemical dust suppressants, and/or vegetation) will be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.

An on-site Air Quality Construction Mitigation Manager will be responsible for directing and documenting compliance with construction-related mitigation conditions.

Estimates of Emissions with Mitigation Measures: Onsite Construction

Tables 3.1C-1 and 3.1C-2 show the estimated maximum daily and annual heavy equipment exhaust and fugitive dust emissions with the assumptions described above and the recommended mitigation measures for onsite construction activities. Detailed emission calculations are included as Attachment 3.1C-1.

TABLE 3.1C-1

Maximum Daily Emissions During Construction, Pounds per Day

	NOx	SO2	VOC	CO	PM10	PM2.5
Onsite						
Construction and Onsite Vehicle Exhaust	59.2	0.18	2.8	89.5	0.28	0.28
Fugitive Dust	--	--	--	--	19.0	3.5
Total Onsite Emissions	59.2	0.2	2.8	89.5	19.3	3.8
Offsite						
Worker Travel, Delivery and Haul Trucks[a]						
-- Exhaust	106.1	0.25	9.4	162.4	3.8	3.6
-- Fugitive Dust	--	--	--	--	25.8	7.0
Transmission Line Construction						
-- Exhaust	159.3	0.59	9.67	312.3	0.3	0.3
-- Fugitive Dust	--	--	--	--	7.3	3.4
Total Offsite Emissions	265.4	1.10	19.1	474.6	36.4	17.0 13.4
Total Emissions	324.6	1.3	21.9	564.1	58.0	18.2

a. Offsite activities.

TABLE 3.1C-2

Peak Annual Emissions During Construction, Tons per Year

	NOx	SO2	VOC	CO	PM10	PM2.5	GHG[b]
Onsite							
Construction and Onsite Vehicle Exhaust	6.3	0.02	0.38	12.5	0.04	0.04	2,245
Fugitive Dust	--	--	--	--	2.4	0.43	--
Total Onsite Emissions	6.3	0.02	0.4	12.5	2.4	0.5	2,245
Offsite							
Worker Travel, Delivery and Haul Trucks[a]							
-- Exhaust	5.4	0.036	0.6	13.3	0.14	0.13	2,861
-- Fugitive Dust	--	--	--	--	2.1	0.57	--
Transmission Line Construction							
-- Exhaust	4.00	0.015	0.25	8.0	0.03	0.03	1,397
-- Fugitive Dust	--	--	--	--	0.3	0.1	--
Total Offsite Emissions	9.4	0.1	0.9	21.3	2.5	0.8	4,258
Total Emissions	15.7	0.1	1.3	33.8	4.9	1.3	6,504

a. Offsite activities.

b. Metric tons of CO_2e.

3.1C.2 Greenhouse Gas Emissions During Construction

Greenhouse gas emissions (GHG) during construction were also evaluated. Total GHG emissions over the 22-month construction period are summarized in Table 3.1C-3 below. Detailed emissions calculations are provided in Attachment 3.1C-1.

TABLE 3.1C-3

GHG Emissions During the Construction Period, MT

	CO_2	CH_4	N_2O	CO_2e
Onsite				
Construction and Onsite Vehicle Exhaust	3,228	0.85	0.00	3,249
Offsite				
Worker Travel, Delivery and Haul Trucks	3,507	0.11	0.00	3,510
Transmission Line Construction	1,387	0.39	0.00	1,397
Total Emissions	8,123	1.35	0.00	8,157

3.1C.3 Air Quality Impact Analysis

A dispersion modeling analysis was conducted based on the emissions discussed above using the approach discussed in the modeling protocol submitted to the MDAQMD and CEC (see Appendix 3.1D).

As shown below in Table 3.1C-4, the results of the analysis indicate that construction activities are not expected to cause or contribute to exceedances of state or federal standards for criteria pollutants, with the exception of the state PM_{10}standards . For this pollutant and averaging periods, existing background concentrations already exceed state standards. The best available emission control techniques will be used to minimize emissions during construction. The project construction impacts are not unusual in comparison to most construction sites; construction sites that use good dust suppression techniques and low-emitting vehicles typically do not cause violations of air quality standards.

A health risk assessment of construction impacts was performed in accordance with OEHHA guidance, which requires adjusting the 30-year lifetime dosage to an exposure period equal to that of the construction Period. At the point of maximum impact (along the property fenceline), the cancer risk approximately 0.03 in one million. This is well below the significance threshold of 10 in one million. Because the offsite DPM impacts fall off sharply with distance from the project fenceline, the residential risk at the nearest residential receptor, approximately 0.75 mile away, is also expected to be below this significance threshold.

The adjacent Blythe Energy Project will be in operation during the construction of SEP, so potential cumulative impacts have also been evaluated. Because the construction impacts are so localized, they are not expected to overlap with any areas that are significantly impacted by BEP.

Table 3.1C-4
Modeled Maximum Impacts During the Construction Period[a]

Pollutant	Averaging Time	Maximum Impact, SEP ($\mu g/m^3$)	Maximum Impact, BEP[d] ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total Impact ($\mu g/m^3$)	State Standard ($\mu g/m^3$)	Federal Standard ($\mu g/m^3$)
NO_2	1-hour[b]	130.7	4.8	77.1	196.2	339	--
	Annual	3.6	0.1	13.2	16.8	57	100
SO_2	1-hour	1.9	0.8	22.9	24.8	655	--
	3-hour	1.6	0.7	22.6	24.2	--105	196--
	24-hour	0.35	0.25	2.6	3.0		
CO	1-hour	1,009.2	5.1	4,000	5,009	23,000	40,000
	8-hour	504.6	2.1	1,698	2,203	10,000	10,000
PM_{10}	24-hour	17.1	0.8	127	144.2	50	150
	Annual	1.3	0.1	22.1	23.5	20	--
$PM_{2.5}$[c]	24-hour	2.8	0.8	13.8	16.6	--	35
	Annual	0.2	0.1	6.5	6.8	12	12

a. Impacts shown are conservative because they include construction of the substation that is no longer part of the proposed project.
b. Only compliance with the state 1-hour NO_2 and SO_2 standards is evaluated. The federal 1-hour average standards for these pollutants are 3-year statistically based standards, while the construction period will last for less than 2 years.
c. 24-hr $PM_{2.5}$ background concentration reflects 3-year average of the 98th percentile values based on form of standard.
d. BEP impact at location of maximum SEP construction impact. Combined concentration does not necessarily equal the sum of the individual concentrations because the individual maxima may occur during different hours at the same receptor.

Attachment 3.1C-1

Detailed Construction Emissions Calculations from CalEEMod

Maximum Daily Emissions During Construction (lbs/day)						
	NOx	**CO**	**VOC**	**SOx**	**PM10**	**PM2.5**
Onsite						
Off-Road Equipment and Onsite Vehicle Combustion [1]	59.19	89.47	2.77	0.18	0.28	0.28
Fugitive Dust, Project Site-Construction [2]					13.61	1.36
Wind Erosion, Project Site Construction [2]					0.83	0.33
Soil Movement, Project Site Construction - Fugitive Dust [2]					4.61	1.84
Total Onsite Emission (Project Site Construction)	59.2	89.5	2.8	0.2	19.3	3.8
Offsite						
Transmission Line Construction						
Off-Road Equipment and Vehicle Combustion [3]	151.0	298.2	8.9	0.5	0.9	0.9
Fugitive Dust [4]					3.3	1.6
Wind Erosion [4]					0.8	0.3
Worker Travel						
Project Site Workforce, Combustion [5]	11.01	94.38	3.73	0.21	0.11	0.10
Project Site Workforce - Fugitive Dust					17.52	4.67
T-Line Workforce, Combustion [6]	1.05	8.97	0.35	0.02	0.01	0.01
T-Line Workforce - Fugitive Dust					1.67	0.44
Delivery Trucks						
Project Site Deliveries, Combustion [5]	23.86	17.06	1.38	0.08	0.73	0.67
Project Site Deliveries - Fugitive Dust					2.52	0.72
T-Line Deliveries, Combustion [6]	7.16	5.12	0.41	0.02	0.22	0.20
T-Line Deliveries - Fugitive Dust					0.75	0.22
Haul Trucks						
Project Site Haul Trucks, Combustion [5]	71.28	50.93	4.34	0.25	2.09	1.92
Project Site Haul Trucks - Fugitive Dust					5.79	1.60
Total Offsite Emissions						
Total Offsite Emissions, Project Site Construction	106.1	162.4	9.4	0.5	28.8	9.7
Total Offsite Emissions, T-Line Construction [7]	159.2	312.3	9.7	0.6	7.6	3.7
Total Offsite Emissions	265.4	474.6	19.1	1.1	36.4	13.4
Maximum Daily Emissions	324.6	564.1	21.9	1.3	55.7	17.2

Notes:

1. Includes on-site construction activity. Maximum emissions occur in month 11.

2. Includes on-site construction activity. Maximum onsite fugitive dust emissions occur in month 13; wind erosion and soil movement dust emissions are taken from the same period.

3. Maximum transmission line construction emissions occur in month 11.

4. Maximum transmission line construction and vehicle fugitive emissions in month 11, wind erosion dust emissions are taken from the

5. Maximum project site construction emissions for worker travel in month 13, delivery trucks in month 10, and haul trucks in month 7.

6. Maximum T-line construction emissions for worker travel and delivery trucks in month 9.

7. 7-month T-line construction occurs during months 7 to 13

Peak Annual Emissions During Construction (tons/yr, rolling 12-month maximum)						
	NOx	**CO**	**VOC**	**SOx**	**PM10**	**PM2.5**
Onsite						
Off-Road Equipment and Onsite Vehicle Combustion [1]	6.32	12.48	0.38	0.02	0.04	0.04
Fugitive Dust, Project Site Construction [2]					1.38	0.03
Wind Erosion, Project Site Construction [2]					0.15	0.06
Soil Movement, Project Site Construction - Fugitive Dust [2]					0.84	0.34
Total Onsite Emission (Project Site Construction)	6.3	12.5	0.4	0.02	2.4	0.5
Offsite						
Transmission Line Construction						
T-Line Off-Road Equipment and Vehicle Combustion [4]	3.74	7.39	0.22	0.01	0.02	0.02
T-Line Construction Fugitive Dust [4]					0.08	0.04
T-Line Wind Erosion [4]					0.08	0.03
Worker Travel						
Project Site Workforce, Combustion [3]	1.14	10.20	0.39	0.02	0.01	0.01
Project Site Workforce - Fugitive Dust					1.69	0.45
T-Line Workforce, Combustion [5]	0.05	0.48	0.02	0.001	0.001	0.0005
T-Line Workforce - Fugitive Dust					0.08	0.02
Delivery Trucks						
Project Site Deliveries, Combustion (combustion) [3]	1.60	1.12	0.09	0.005	0.05	0.04
Project Site Deliveries - Fugitive Dust					0.16	0.05
T-Line Deliveries, Combustion [4]	0.21	0.15	0.01	0.00	0.01	0.01
T-Line Deliveries - Fugitive Dust					0.02	0.01
Haul Trucks						
Project Site Haul Trucks, Combustion [3]	2.67	1.99	0.17	0.01	0.08	0.07
Project Site Haul Trucks - Fugitive Dust					0.22	0.06
Total Offsite Emissions						
Total Offsite Emissions, Project Site Construction	5.4	13.3	0.6	0.04	2.2	0.7
Total Offsite Emissions, T-Line Construction [4]	4.0	8.0	0.3	0.0	0.3	0.1
Total Offsite Emissions	9.4	21.3	0.9	0.1	2.5	0.8
Maximum Annual Emissions	15.7	33.8	1.3	0.1	4.9	1.3

1. Includes on-site construction activity. Maximum 12-month emissions occur from months 4 to 15

2. Includes on-site construction activity. Maximum 12-month emissions occur from months 7 to 18, wind erosion and soil movement dust emissions are taken from the same period.

3. Maximum 12-month emissions for worker travel from months 7 to 18, delivery trucks from months 2 to 13, and haul trucks from months 1 to 12

4. 7-month total transmission line construction emission from months 7 to 13 of the 22-month construction period

Short Term Impacts (24 hours and less)					
Daily working hours (hrs/day)	10				
	NOx	CO	SOx	PM10	PM2.5
Project Site Construction Emissions					
Off Road Equipment and Onsite Vehicle Combustion (lbs/day)	59.19	89.47	0.18	0.28	0.28
Off Road Equipment and Onsite Vehicle Combustion (lbs/hr)	5.92	8.95	0.02	0.03	0.03
Off Road Equipment and Onsite Vehicle Combustion (g/sec)	0.75	1.13	0.002	0.00	0.00
Off Road Equipment and Onsite Vehicle Fugitive Dust (lb/day)				13.61	1.36
Off Road Equipment and Onsite Vehicle Fugitive Dust (lb/hr)				1.36	0.14
Off Road Equipment and Onsite Vehicle Fugitive Dust (g/sec)				0.17	0.02
Wind Erosion (lbs/day)				0.83	0.33
Wind Erosion (lbs/hr) [1]				0.035	0.014
Wind Erosion (g/sec)				0.004	0.002
Soil Movement Fugitive Dust (lbs/day)				4.61	1.84
Soil Movement Fugitive Dust (lbs/hr)				0.46	0.18
Soil Movement Fugitive Dust (g/sec)				0.06	0.02

Note:

1. Wind erosion occurs 24 hrs/day.

Construction of the Proposed SEP - Modeled emissions, Long - Term Impacts

Long Term Impacts (annual)					
Days/yr	365				
Hrs/day	24				
	NOx	CO	SOx	PM10	PM2.5
Project Site Construction Emissions					
Off Road Equipment and Onsite Vehicle (Combustion) (tons/yr)	6.32	12.48	0.02	0.04	0.04
Off Road Equipment and Onsite Vehicle (Combustion) (lbs/hr)	1.44	2.85	0.01	0.01	0.01
Off Road Equipment and Onsite Vehicle (Combustion) (g/sec)	0.1818	0.3591	0.0007	0.0012	1.17E-03
Off Road Equipment and Onsite Vehicle Fugitive Dust (tons/yr)				1.38	0.03
Off Road Equipment and Onsite Vehicle Fugitive Dust (lbs/hr)				0.31	0.01
Off Road Equipment and Onsite Vehicle Fugitive Dust (g/sec)				0.0396	9.76E-04
Wind Erosion (Fugitive Dust) (tons/yr)				0.15	0.06
Wind Erosion (Fugitive Dust) (lbs/hr)				0.03	0.01
Wind Erosion (Fugitive Dust) (g/sec)				4.31E-03	1.73E-03
Soil Movement Fugitive Dust (lbs/day)				0.84	0.34
Soil Movement Fugitive Dust (lbs/hr)				0.19	0.08
Soil Movement Fugitive Dust (g/sec)				2.42E-02	9.67E-03

Construction of the Proposed SEP - Greenhouse Gas Emission Calculations

Peak Annual GHG Emissions, Project Site Construction (MT/yr, rolling 12-month maximum)				
	CO2	CH4	N2O	CO2e
Off-Road Equipment and Onsite Vehicle	2,231	0.57	0.00	2,245
Worker Travel	1,513	0.09	0.00	1,515
Delivery Truck	477	0.002	0.00	477
Haul Truck	869	0.004	0.00	869
Total =	5,090	0.66	0.00	5,107

GHG Emissions, Project Site Construction (MT, Total for 22-month Construction Period)				
	CO2	CH4	N2O	CO2e
Off-Road Equipment and Onsite Vehicle	3,228	0.85	0.00	3,249
Worker Travel	1,857	0.11	0.00	1,860
Delivery Truck	525	0.00	0.00	526
Haul Truck	1,125	0.01	0.00	1,125
Total	6,735	0.97	0.00	6,759

GHG Emissions, Transmission Line Construction (MT, Total for 7-month Period)				
	CO2	CH4	N2O	CO2e
Off-Road Equipment and Onsite Vehicle	1,250	0.38	0.00	1,260
Worker Travel	72	0.00	0.00	72
Delivery Truck	65	0.0003	0.00	65
Total	1,387	0.39	0.00	1,397

Construction of the Proposed SEP Project Site - Monthly and Annual Emission Calculations

Project Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
		ROG																					
Onsite Off-Road Equipment	(tons/month)	1.80E-02	2.44E-02	1.98E-02	3.76E-02	3.62E-02	3.68E-02	2.64E-02	3.07E-02	2.77E-02	3.19E-02	2.73E-02	3.24E-02	3.32E-02	3.18E-02	2.71E-02	2.38E-02	2.50E-02	1.70E-02	1.32E-02	1.03E-02	9.67E-03	9.85E-03
Onsite Vehicle	(tons/month)	6.48E-05	8.06E-05	1.49E-04	1.38E-04	2.98E-04	4.06E-04	5.84E-04	3.37E-04	3.66E-04	4.18E-04	3.46E-04	3.84E-04	3.35E-04	2.76E-04	2.91E-04	2.48E-04	2.65E-04	2.46E-04	1.81E-04	7.45E-05	1.74E-05	7.69E-06
Onsite Off-Road + Onsite Vehicle	(tons/month)	1.81E-02	2.45E-02	1.99E-02	3.77E-02	3.65E-02	3.72E-02	2.70E-02	3.10E-02	2.81E-02	3.23E-02	2.76E-02	3.28E-02	3.35E-02	3.21E-02	2.74E-02	2.40E-02	2.53E-02	1.72E-02	1.34E-02	1.04E-02	9.69E-03	9.86E-03
Offsite Haul Truck	(tons/month)	4.76E-03	4.58E-03	9.88E-03	5.49E-03	1.83E-02	2.64E-02	4.76E-02	1.61E-02	1.54E-02	9.03E-03	4.18E-03	4.35E-03	4.35E-03	4.18E-03	4.52E-03	4.18E-03	8.36E-03	7.69E-03	8.36E-03	3.98E-03	0.00E+00	0.00E+00
Offsite Delivery Truck	(tons/month)	0.00E+00	1.60E-03	1.76E-03	1.68E-03	6.42E-03	1.01E-02	1.01E-02	9.04E-03	1.10E-02	1.58E-02	1.10E-02	9.45E-03	3.01E-03	1.44E-03	1.57E-03	1.44E-03	1.51E-03	1.51E-03	1.44E-03	0.00E+00	0.00E+00	0.00E+00
Offsite Worker Travel	(tons/month)	4.34E-03	5.10E-03	9.24E-03	1.27E-02	1.66E-02	1.94E-02	2.17E-02	2.21E-02	2.51E-02	3.50E-02	3.53E-02	4.27E-02	4.27E-02	3.58E-02	3.75E-02	3.15E-02	2.91E-02	2.69E-02	1.62E-02	6.76E-03	2.67E-03	1.18E-03
Onsite Off-Road Equipment	Rolling 12-month total (tons/year)												0.35	0.36	0.37	0.38	0.38	0.37	0.35	0.33	0.32	0.30	0.28	0.26
Onsite Off-Road + Onsite Vehicle	Rolling 12-month total (tons/year)												0.35	0.37	0.38	0.38	0.38	0.37	0.36	0.34	0.32	0.30	0.29	0.26
Offsite Haul Truck	Rolling 12-month total (tons/year)												0.17	0.17	0.17	0.16	0.16	0.15	0.13	0.09	0.08	0.06	0.05
Offsite Delivery Truck	Rolling 12-month total (tons/year)												0.09	0.09	0.09	0.09	0.09	0.09	0.08	0.07	0.06	0.05	0.03
Offsite Worker Travel	Rolling 12-month total (tons/year)												0.25	0.29	0.32	0.35	0.37	0.38	0.39	0.38	0.36	0.34	0.31
		NOx																					
Onsite Off-Road Equipment	(tons/month)	0.30	0.40	0.33	0.64	0.62	0.61	0.44	0.50	0.45	0.52	0.44	0.53	0.54	0.54	0.44	0.39	0.41	0.28	0.21	0.17	0.17	0.16
Onsite Vehicle	(tons/month)	6.83E-04	8.94E-04	1.66E-03	8.79E-04	3.51E-03	5.09E-03	7.82E-03	3.58E-03	3.81E-03	3.87E-03	2.65E-03	2.62E-03	1.75E-03	1.39E-03	1.48E-03	1.31E-03	1.77E-03	1.65E-03	1.51E-03	5.89E-04	5.54E-05	2.44E-05
Onsite Off-Road + Onsite Vehicle	(tons/month)	0.30	0.40	0.33	0.64	0.62	0.61	0.45	0.51	0.46	0.53	0.45	0.53	0.54	0.55	0.44	0.39	0.41	0.28	0.21	0.17	0.17	0.16
Offsite Haul Truck	(tons/month)	0.0788	0.0758	0.1637	0.0545	0.3031	0.4365	0.7881	0.2528	0.2423	0.1422	0.0658	0.0685	0.0685	0.0658	0.0711	0.0658	0.1317	0.1212	0.1317	0.0585	0	0
Offsite Delivery Truck	(tons/month)	0.000	0.029	0.032	0.030	0.115	0.181	0.181	0.158	0.191	0.275	0.191	0.165	0.053	0.025	0.028	0.025	0.026	0.026	0.025	0.000	0.000	0.000
Offsite Worker Travel	(tons/month)	0.012	0.014	0.026	0.035	0.046	0.054	0.060	0.066	0.074	0.104	0.105	0.127	0.127	0.106	0.111	0.094	0.086	0.080	0.048	0.022	0.009	0.004
Onsite Off-Road Equipment	Rolling 12-month total (tons/year)												5.78	6.03	6.17	6.28	6.03	5.82	5.49	5.27	4.93	4.65	4.28
Onsite Off-Road + Onsite Vehicle	Rolling 12-month total (tons/year)												5.82	6.07	6.21	6.32	6.07	5.86	5.53	5.29	4.95	4.67	4.30
Offsite Haul Truck	Rolling 12-month total (tons/year)												2.67	2.66	2.65	2.56	2.57	2.40	2.08	1.43	1.23	0.99	0.85
Offsite Delivery Truck	Rolling 12-month total (tons/year)												1.55	1.60	1.60	1.59	1.59	1.50	1.34	1.19	1.03	0.84	0.56
Offsite Worker Travel	Rolling 12-month total (tons/year)												0.72	0.84	0.93	1.01	1.07	1.11	1.14	1.13	1.08	1.02	0.92
		CO																					
Onsite Off-Road Equipment	(tons/month)	0.584	0.793	0.642	1.246	1.198	1.194	0.859	0.997	0.901	1.036	0.886	1.053	1.079	1.072	0.881	0.773	0.810	0.552	0.428	0.335	0.335	0.320
Onsite Vehicle	(tons/month)	1.14E-03	1.40E-03	2.58E-03	2.81E-03	4.98E-03	6.51E-03	8.82E-03	6.19E-03	6.83E-03	8.40E-03	7.54E-03	8.70E-03	8.08E-03	6.72E-03	7.05E-03	5.98E-03	5.97E-03	5.52E-03	3.72E-03	1.62E-03	4.90E-04	2.16E-04
Onsite Off-Road + Onsite Vehicle	(tons/month)	0.585	0.794	0.645	1.249	1.203	1.200	0.868	1.003	0.908	1.045	0.894	1.061	1.087	1.078	0.888	0.779	0.816	0.557	0.431	0.336	0.336	0.320
Offsite Haul Truck	(tons/month)	0.056	0.054	0.117	0.075	0.217	0.312	0.563	0.196	0.188	0.111	0.051	0.053	0.053	0.051	0.055	0.051	0.102	0.094	0.102	0.049	0.000	0.000
Offsite Delivery Truck	(tons/month)	0.000	0.020	0.022	0.021	0.079	0.124	0.124	0.113	0.136	0.196	0.136	0.118	0.038	0.018	0.020	0.018	0.019	0.019	0.018	0.000	0.000	0.000
Offsite Worker Travel	(tons/month)	0.109	0.128	0.233	0.319	0.417	0.487	0.546	0.587	0.666	0.929	0.936	1.135	1.134	0.951	0.995	0.838	0.773	0.714	0.429	0.191	0.075	0.033
Onsite Off-Road Equipment	Rolling 12-month total (tons/year)												11.39	11.89	12.16	12.40	11.93	11.54	10.90	10.47	9.81	9.24	8.52
Onsite Off-Road + Onsite Vehicle	Rolling 12-month total (tons/year)												11.46	11.96	12.24	12.48	12.02	11.63	10.99	10.55	9.88	9.31	8.58
Offsite Haul Truck	Rolling 12-month total (tons/year)												1.99	1.99	1.99	1.93	1.90	1.79	1.57	1.11	0.96	0.77	0.66
Offsite Delivery Truck	Rolling 12-month total (tons/year)												1.09	1.12	1.12	1.12	1.12	1.06	0.95	0.85	0.73	0.60	0.40
Offsite Worker Travel	Rolling 12-month total (tons/year)												6.49	7.52	8.34	9.10	9.62	9.98	10.20	10.09	9.69	9.10	8.20
		SO2																					
Onsite Off-Road Equipment	(tons/month)	1.12E-03	1.51E-03	1.21E-03	2.37E-03	2.27E-03	2.31E-03	1.71E-03	1.97E-03	1.78E-03	2.05E-03	1.76E-03	2.08E-03	2.13E-03	2.09E-03	1.76E-03	1.55E-03	1.63E-03	1.07E-03	8.40E-04	6.60E-04	6.40E-04	6.00E-04
Onsite Vehicle	(tons/month)	3.37E-06	4.25E-06	7.86E-06	5.91E-06	1.57E-05	2.16E-05	3.14E-05	1.98E-05	2.13E-05	2.41E-05	1.97E-05	2.17E-05	1.88E-05	1.55E-05	1.63E-05	1.40E-05	1.51E-05	1.40E-05	1.05E-05	4.86E-06	1.17E-06	5.21E-07
Onsite Off-Road + Onsite Vehicle	(tons/month)	1.12E-03	1.51E-03	1.22E-03	2.38E-03	2.29E-03	2.33E-03	1.74E-03	1.99E-03	1.80E-03	2.07E-03	1.78E-03	2.10E-03	2.15E-03	2.11E-03	1.78E-03	1.56E-03	1.65E-03	1.08E-03	8.50E-04	6.65E-04	6.41E-04	6.01E-04
Offsite Haul Truck	(tons/month)	2.70E-04	2.60E-04	5.60E-04	1.80E-04	1.04E-03	1.50E-03	2.70E-03	1.00E-03	9.50E-04	5.60E-04	2.60E-04	2.70E-04	2.70E-04	2.60E-04	2.80E-04	2.60E-04	5.20E-04	4.80E-04	5.20E-04	2.60E-04	0.00E+00	0.00E+00
Offsite Delivery Truck	(tons/month)	0.00E+00	9.00E-05	1.00E-04	9.00E-05	3.50E-04	5.50E-04	5.50E-04	5.50E-04	6.60E-04	9.50E-04	6.60E-04	5.70E-04	1.80E-04	9.00E-05	1.00E-04	9.00E-05	9.00E-05	9.00E-05	9.00E-05	0.00E+00	0.00E+00	0.00E+00
Offsite Worker Travel	(tons/month)	2.00E-04	2.40E-04	4.30E-04	5.90E-04	7.70E-04	9.00E-04	1.00E-03	1.22E-03	1.38E-03	1.93E-03	1.94E-03	2.35E-03	2.35E-03	1.97E-03	2.06E-03	1.74E-03	1.60E-03	1.48E-03	8.90E-04	4.40E-04	1.80E-04	8.00E-05
Onsite Off-Road Equipment	Rolling 12-month total (tons/year)												0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Onsite Off-Road + Onsite Vehicle	Rolling 12-month total (tons/year)												0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Offsite Haul Truck	Rolling 12-month total (tons/year)												0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00
Offsite Delivery Truck	Rolling 12-month total (tons/year)												0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
Offsite Worker Travel	Rolling 12-month total (tons/year)												0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02

Construction of the Proposed SEP Project Site - Monthly and Annual Emission Calculations

Project Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
		PM10																					
Onsite Off-Road Equipment	(tons/month)	0.002	0.003	0.003	0.004	0.005	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.001	0.001	0.001	0.001
Onsite Vehicle	(tons/month)	1.83E-05	2.45E-05	4.54E-05	2.04E-05	9.70E-05	1.42E-04	2.22E-04	9.89E-05	1.05E-04	1.03E-04	6.63E-05	6.22E-05	3.59E-05	2.76E-05	2.96E-05	2.68E-05	4.17E-05	3.88E-05	3.90E-05	1.62E-05	5.86E-07	2.61E-07
Onsite Off-Road + Onsite Vehicle	(tons/month)	2.43E-03	3.03E-03	2.63E-03	4.36E-03	4.63E-03	4.37E-03	2.80E-03	3.13E-03	2.84E-03	3.25E-03	2.78E-03	3.28E-03	3.34E-03	3.23E-03	2.72E-03	2.39E-03	2.51E-03	1.72E-03	1.36E-03	1.05E-03	9.91E-04	9.80E-04
Offsite Haul Truck	(tons/month)	2.30E-03	2.21E-03	4.77E-03	1.48E-03	8.83E-03	1.27E-02	2.30E-02	7.54E-03	7.22E-03	4.24E-03	1.96E-03	2.04E-03	2.04E-03	1.96E-03	2.12E-03	1.96E-03	3.93E-03	3.61E-03	3.93E-03	1.93E-03	0.00E+00	0.00E+00
Offsite Delivery Truck	(tons/month)	0.00E+00	8.70E-04	9.50E-04	9.10E-04	3.48E-03	5.47E-03	5.47E-03	4.82E-03	5.84E-03	8.40E-03	5.84E-03	5.04E-03	1.61E-03	7.70E-04	8.40E-04	7.70E-04	8.00E-04	8.00E-04	7.70E-04	0.00E+00	0.00E+00	0.00E+00
Offsite Worker Travel	(tons/month)	1.10E-04	1.30E-04	2.30E-04	3.20E-04	4.10E-04	4.80E-04	5.40E-04	6.30E-04	7.10E-04	9.90E-04	1.00E-03	1.21E-03	1.21E-03	1.02E-03	1.06E-03	9.00E-04	8.30E-04	7.60E-04	4.60E-04	2.20E-04	9.00E-05	4.00E-05
Onsite Off-Road Equipment	Rolling 12-month total (tons/year)												0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03
Onsite Off-Road + Onsite Vehicle	Rolling 12-month total (tons/year)												0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03
Offsite Haul Truck	Rolling 12-month total (tons/year)												0.08	0.08	0.08	0.08	0.08	0.07	0.06	0.04	0.04	0.03	0.03
Offsite Delivery Truck	Rolling 12-month total (tons/year)												0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.04	0.03	0.03	0.02
Offsite Worker Travel	Rolling 12-month total (tons/year)												0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Onsite Fugitive (Off-Road)	(tons/month)	8.53E-03	8.14E-03	8.92E-03	1.14E-02	8.14E-03	8.53E-03	2.84E-03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Onsite Fugitive (Onsite Vehicle)	(tons/month)	1.48E-02	1.70E-02	3.15E-02	4.10E-02	5.69E-02	6.91E-02	8.65E-02	8.47E-02	9.46E-02	1.25E-01	1.23E-01	1.49E-01	1.48E-01	1.24E-01	1.30E-01	1.10E-01	1.04E-01	9.59E-02	5.98E-02	2.97E-02	1.08E-02	4.77E-03
Onsite Off-Road + Onsite Vehicle	(tons/month)	0.02	0.03	0.04	0.05	0.07	0.08	0.09	0.09	0.10	0.13	0.12	0.15	0.15	0.12	0.13	0.11	0.10	0.10	0.06	0.03	0.01	0.00
Offsite Fugitive - Haul Truck	(tons/month)	0.01	0.01	0.01	0.00	0.02	0.03	0.06	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
Offsite Fugitive - Delivery Truck	(tons/month)	0.00	0.00	0.00	0.00	0.01	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Fugitive - Worker Travel	(tons/month)	0.02	0.02	0.03	0.05	0.06	0.07	0.08	0.10	0.11	0.16	0.16	0.19	0.19	0.16	0.17	0.14	0.13	0.12	0.07	0.04	0.01	0.01
Onsite Fugitive (Off-Road)	Rolling 12-month total (tons/year)												0.06	0.05	0.04	0.03	0.02	0.01	0.00	0.00	0.00	0.00	0.00
Onsite Fugitive - Off-Road + Onsite Veh	Rolling 12-month total (tons/year)												0.95	1.08	1.18	1.27	1.33	1.37	1.38	1.35	1.30	1.21	1.09
Offsite Fugitive - Haul Truck	Rolling 12-month total (tons/year)												0.22	0.22	0.22	0.22	0.22	0.21	0.18	0.13	0.11	0.09	0.08
Offsite Fugitive - Delivery Truck	Rolling 12-month total (tons/year)												0.15	0.16	0.16	0.16	0.16	0.15	0.14	0.12	0.11	0.09	0.06
Offsite Fugitive - Worker Travel	Rolling 12-month total (tons/year)												1.04	1.21	1.35	1.49	1.58	1.65	1.69	1.68	1.62	1.52	1.38
		PM2.5																					
Onsite Off-Road Equipment	(tons/month)	0.002	0.003	0.003	0.004	0.005	0.004	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.001	0.001	0.001	0.001
Onsite Vehicle	(tons/month)	1.68E-05	2.25E-05	4.18E-05	1.88E-05	8.93E-05	1.31E-04	2.04E-04	9.09E-05	9.64E-05	9.51E-05	6.11E-05	5.73E-05	3.31E-05	2.54E-05	2.72E-05	2.47E-05	3.83E-05	3.57E-05	3.59E-05	1.49E-05	5.21E-07	2.61E-07
Onsite Off-Road + Onsite Vehicle	(tons/month)	2.43E-03	3.03E-03	2.62E-03	4.36E-03	4.62E-03	4.36E-03	2.78E-03	3.12E-03	2.84E-03	3.25E-03	2.77E-03	3.28E-03	3.33E-03	3.23E-03	2.72E-03	2.38E-03	2.51E-03	1.72E-03	1.36E-03	1.04E-03	9.91E-04	9.80E-04
Offsite Haul Truck	(tons/month)	2.11E-03	2.03E-03	4.39E-03	1.36E-03	8.12E-03	1.17E-02	2.11E-02	6.93E-03	6.64E-03	3.90E-03	1.81E-03	1.88E-03	1.88E-03	1.81E-03	1.95E-03	1.81E-03	3.61E-03	3.32E-03	3.61E-03	1.77E-03	0.00E+00	0.00E+00
Offsite Delivery Truck	(tons/month)	0.00E+00	8.00E-04	8.80E-04	8.40E-04	3.20E-03	5.03E-03	5.03E-03	4.43E-03	5.38E-03	7.73E-03	5.38E-03	4.64E-03	1.48E-03	7.10E-04	7.70E-04	7.10E-04	7.40E-04	7.40E-04	7.10E-04	0.00E+00	0.00E+00	0.00E+00
Offsite Worker Travel	(tons/month)	1.00E-04	1.20E-04	2.10E-04	2.90E-04	3.80E-04	4.40E-04	4.90E-04	5.80E-04	6.50E-04	9.10E-04	9.20E-04	1.12E-03	1.12E-03	9.40E-04	9.80E-04	8.20E-04	7.60E-04	7.00E-04	4.20E-04	2.00E-04	8.00E-05	4.00E-05
Onsite Off-Road Equipment	Rolling 12-month total (tons/year)												0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03
Onsite Off-Road + Onsite Vehicle	Rolling 12-month total (tons/year)												0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03
Offsite Haul Truck	Rolling 12-month total (tons/year)												0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.04	0.03	0.03	0.02
Offsite Delivery Truck	Rolling 12-month total (tons/year)												0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.03	0.03	0.02	0.02
Offsite Worker Travel	Rolling 12-month total (tons/year)												0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Onsite Fugitive (Off-Road)	(tons/month)	9.20E-04	8.80E-04	9.60E-04	1.23E-03	8.80E-04	9.20E-04	3.10E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Onsite Fugitive (Onsite Vehicle)	(tons/month)	1.48E-03	1.77E-03	3.23E-03	4.17E-03	5.99E-03	7.34E-03	9.12E-03	8.90E-03	1.00E-02	1.33E-02	1.29E-02	1.53E-02	1.50E-02	1.25E-02	1.31E-02	1.11E-02	1.05E-02	9.66E-03	6.06E-03	2.97E-03	1.08E-03	4.77E-04
Onsite Off-Road + Onsite Vehicle	(tons/month)	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00
Offsite Fugitive - Haul Truck	(tons/month)	1.74E-03	1.67E-03	3.60E-03	1.11E-03	6.67E-03	9.61E-03	1.74E-02	6.41E-03	6.14E-03	3.60E-03	1.67E-03	1.74E-03	1.74E-03	1.67E-03	1.80E-03	1.67E-03	3.34E-03	3.07E-03	3.34E-03	1.67E-03	0.00E+00	0.00E+00
Offsite Fugitive - Delivery Truck	(tons/month)	0.00E+00	7.50E-04	8.20E-04	7.80E-04	2.98E-03	4.69E-03	4.69E-03	4.69E-03	5.69E-03	8.18E-03	5.69E-03	4.91E-03	1.56E-03	7.50E-04	8.20E-04	7.50E-04	7.80E-04	7.80E-04	7.50E-04	0.00E+00	0.00E+00	0.00E+00
Offsite Fugitive - Worker Travel	(tons/month)	0.00	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.05	0.04	0.04	0.04	0.03	0.03	0.02	0.01	0.00	0.00
Onsite Fugitive (Off-Road)	Rolling 12-month total (tons/year)												0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Fugitive - Off-Road + Onsite Veh	Rolling 12-month total (tons/year)												0.10	0.11	0.12	0.13	0.14	0.14	0.14	0.14	0.13	0.12	0.11
Offsite Fugitive - Haul Truck	Rolling 12-month total (tons/year)												0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.04	0.03	0.03	0.02
Offsite Fugitive - Delivery Truck	Rolling 12-month total (tons/year)												0.04	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.03	0.02	0.02
Offsite Fugitive - Worker Travel	Rolling 12-month total (tons/year)												0.28	0.32	0.36	0.40	0.42	0.44	0.45	0.45	0.43	0.41	0.37
		CO2																					
Onsite Off-Road Equipment	(MT/month)	104.27	141.02	112.95	219.05	210.15	212.82	155.16	178.48	161.37	185.58	159.27	189.01	193.35	188.89	159.12	139.94	146.60	97.68	76.72	59.70	57.28	54.87
Onsite Vehicle	(MT/month)	2.87E-01	3.58E-01	6.68E-01	4.73E-01	1.35E+00	1.87E+00	2.77E+00	1.63E+00	1.76E+00	1.94E+00	1.54E+00	1.68E+00	1.41E+00	1.16E+00	1.22E+00	1.05E+00	1.17E+00	1.08E+00	8.34E-01	3.75E-01	7.88E-02	3.47E-02
Onsite Off-Road + Onsite Vehicle	(MT/month)	104.55	141.38	113.62	219.52	211.49	214.69	157.93	180.11	163.14	187.52	160.81	190.69	194.76	190.06	160.34	140.99	147.77	98.77	77.56	60.08	57.36	54.90
Offsite Haul Truck	(MT/month)	24.73	23.78	51.36	16.12	95.12	136.97	247.31	89.72	85.98	50.46	23.36	24.30	24.30	23.36	25.23	23.36	46.73	42.99	46.73	22.96	0.00	0.00
Offsite Delivery Truck	(MT/month)	0.00	7.93	8.69	8.31	31.72	49.85	49.85	49.02	59.42	85.41	59.42	51.25	16.34	7.80	8.54	7.80	8.17	8.17	7.80	0.00	0.00	0.00
Offsite Worker Travel	(MT/month)	14.98	17.60	31.93	43.80	57.21	66.85	74.92	87.44	99.11	138.28	139.36	168.94	168.79	141.57	148.11	124.67	115.11	106.25	63.92	30.61	12.10	5.32
Onsite Off-Road Equipment	Rolling 12-month total (MT/year)												2,029	2,118	2,166	2,212	2,133	2,070	1,954	1,876	1,757	1,653	1,522
Onsite Off-Road + Onsite Vehicle	Rolling 12-month total (MT/year)												2,045	2,136	2,184	2,231	2,153	2,089	1,973	1,893	1,772	1,667	1,534
Offsite Haul Truck	Rolling 12-month total (MT/year)												869	869	868	842	849	801	707	507	440	354	303
Offsite Delivery Truck	Rolling 12-month total (MT/year)												461	477	477	477	476	453	411	369	320	261	175
Offsite Worker Travel	Rolling 12-month total (MT/year)												940	1,094	1,218	1,334	1,415	1,473	1,513	1,502	1,445	1,358	1,225

Construction of the Proposed SEP Project Site - Monthly and Annual Emission Calculations

Project Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
													CH4										
Onsite Off-Road Equipment	(MT/month)	0.031	0.042	0.034	0.058	0.056	0.056	0.038	0.046	0.042	0.048	0.041	0.049	0.051	0.047	0.040	0.035	0.036	0.029	0.023	0.018	0.017	0.017
Onsite Vehicle	(tons/month)	6.72E-06	8.00E-06	1.46E-05	1.79E-05	2.70E-05	3.30E-05	4.03E-05	3.72E-05	4.17E-05	5.57E-05	5.42E-05	6.49E-05	6.36E-05	5.33E-05	5.57E-05	4.70E-05	4.43E-05	4.09E-05	2.55E-05	1.17E-05	4.30E-06	1.89E-06
Onsite Off-Road + Onsite Vehicle	(MT/month)	0.03	0.04	0.03	0.06	0.06	0.06	0.04	0.05	0.04	0.05	0.04	0.05	0.05	0.05	0.04	0.03	0.04	0.03	0.02	0.02	0.02	0.02
Offsite Haul Truck	(MT/month)	1.20E-04	1.20E-04	2.60E-04	9.00E-05	4.80E-04	6.90E-04	1.24E-03	4.30E-04	4.10E-04	2.40E-04	1.10E-04	1.20E-04	1.20E-04	1.10E-04	1.20E-04	1.10E-04	2.20E-04	2.00E-04	2.20E-04	1.10E-04	0.00E+00	0.00E+00
Offsite Delivery Truck	(MT/month)	0.00E+00	4.00E-05	4.00E-05	4.00E-05	1.60E-04	2.50E-04	2.50E-04	2.30E-04	2.70E-04	3.90E-04	2.70E-04	2.40E-04	8.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	4.00E-05	0.00E+00	0.00E+00	0.00E+00
Offsite Worker Travel	(MT/month)	8.90E-04	1.04E-03	1.89E-03	2.59E-03	3.39E-03	3.96E-03	4.44E-03	4.94E-03	5.60E-03	7.81E-03	7.87E-03	9.54E-03	9.53E-03	8.00E-03	8.36E-03	7.04E-03	6.50E-03	6.00E-03	3.61E-03	1.66E-03	6.60E-04	2.90E-04
Onsite Off-Road Equipment	Rolling 12-month total (MT/year)												0.54	0.56	0.56	0.57	0.55	0.53	0.50	0.48	0.46	0.43	0.40
Onsite Off-Road + Onsite Vehicle	Rolling 12-month total (MT/year)												1	1	1	1	1	1	1	0	0	0	0
Offsite Haul Truck	Rolling 12-month total (MT/year)												4.31E-03	4.31E-03	4.30E-03	4.16E-03	4.18E-03	3.92E-03	3.43E-03	2.41E-03	2.09E-03	1.68E-03	1.44E-03
Offsite Delivery Truck	Rolling 12-month total (MT/year)												2.18E-03	2.26E-03	2.26E-03	2.26E-03	2.26E-03	2.14E-03	1.93E-03	1.72E-03	1.49E-03	1.22E-03	8.30E-04
Offsite Worker Travel	Rolling 12-month total (MT/year)												5.40E-02	6.26E-02	6.96E-02	7.60E-02	8.05E-02	8.36E-02	8.56E-02	8.48E-02	8.15E-02	7.66E-02	6.91E-02
													N2O										
Onsite Off-Road Equipment	(MT/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Vehicle	(tons/month)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Onsite Off-Road + Onsite Vehicle	(MT/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Haul Truck	(MT/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	(MT/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Worker Travel	(MT/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Off-Road Equipment	Rolling 12-month total (MT/year)												0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Off-Road + Onsite Vehicle	Rolling 12-month total (MT/year)												0	0	0	0	0	0	0	0	0	0	0
Offsite Haul Truck	Rolling 12-month total (MT/year)												0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	Rolling 12-month total (MT/year)												0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Worker Travel	Rolling 12-month total (MT/year)												0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
													CO2e										
Onsite Off-Road Equipment	(MT/month)	105.04	142.07	113.79	220.49	211.54	214.22	156.12	179.62	162.41	186.77	160.29	190.23	194.61	190.06	160.11	140.80	147.51	98.42	77.30	60.15	57.71	55.29
Onsite Vehicle	(tons/month)	2.87E-01	3.58E-01	6.69E-01	4.73E-01	1.35E+00	1.87E+00	2.77E+00	1.63E+00	1.76E+00	1.94E+00	1.54E+00	1.68E+00	1.41E+00	1.16E+00	1.23E+00	1.05E+00	1.17E+00	1.09E+00	8.35E-01	3.76E-01	7.89E-02	3.47E-02
Onsite Off-Road + Onsite Vehicle	(MT/month)	105.33	142.43	114.46	220.97	212.88	216.09	158.89	181.26	164.17	188.72	161.83	191.91	196.03	191.22	161.33	141.86	148.68	99.50	78.13	60.53	57.79	55.33
Offsite Haul Truck	(MT/month)	24.73	23.78	51.37	16.12	95.13	136.99	247.34	89.73	85.99	50.47	23.37	24.30	24.30	23.37	25.24	23.37	46.73	42.99	46.73	22.96	0.00	0.00
Offsite Delivery Truck	(MT/month)	0.00	7.93	8.69	8.31	31.72	49.85	49.85	49.03	59.42	85.42	59.42	51.25	16.34	7.80	8.54	7.80	8.17	8.17	7.80	0.00	0.00	0.00
Offsite Worker Travel	(MT/month)	15.01	17.63	31.98	43.86	57.30	66.95	75.03	87.56	99.25	138.47	139.56	169.18	169.03	141.77	148.32	124.84	115.27	106.40	64.01	30.65	12.12	5.33
Onsite Off-Road Equipment	Rolling 12-month total (MT/year)												2,043	2,132	2,180	2,226	2,147	2,083	1,967	1,888	1,769	1,664	1,532
Onsite Off-Road + Onsite Vehicle	Rolling 12-month total (MT/year)												2,059	2,150	2,198	2,245	2,166	2,102	1,985	1,905	1,784	1,678	1,544
Offsite Haul Truck	Rolling 12-month total (MT/year)												869	869	868	842	850	801	707	507	440	354	303
Offsite Delivery Truck	Rolling 12-month total (MT/year)												461	477	477	477	476	453	411	369	320	261	175
Offsite Worker Travel	Rolling 12-month total (MT/year)												942	1,096	1,220	1,336	1,417	1,475	1,515	1,504	1,447	1,360	1,226

Construction of the Proposed SEP Transmission Line - Monthly and Annual Emission Calculations

Project Month		7	8	9	10	11	12	13
					ROG			
T-Line Site Off-Road Equipment	(tons/month)	0.00E+00	9.53E-03	6.56E-03	4.84E-02	8.89E-02	5.93E-02	8.17E-03
T-Line Site Vehicle	(tons/month)	1.11E-06	1.82E-05	5.58E-05	5.93E-05	5.37E-05	1.35E-05	1.01E-05
T-Line Site Off-Road + T-Line Site Vehicle	(tons/month)	1.11E-06	9.55E-03	6.62E-03	4.85E-02	8.90E-02	5.93E-02	8.18E-03
Offsite Haul Truck	(tons/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	(tons/month)	0.00E+00	0.00E+00	4.11E-03	4.09E-03	3.83E-03	0.00E+00	0.00E+00
Offsite Worker Travel	(tons/month)	1.70E-04	2.80E-03	3.69E-03	4.25E-03	3.69E-03	2.05E-03	1.54E-03
T-Line Site Off-Road Equipment	7-month total (tons/year)							0.22
T-Line Site Off-Road + T-Line Site Vehicle	7-month total (tons/year)							0.22
Offsite Haul Truck								0.00
Offsite Delivery Truck	7-month total (tons/year)							0.01
Offsite Worker Travel	7-month total (tons/year)							0.02
					NOx			
T-Line Site Off-Road Equipment	(tons/month)	0.00	0.15	0.11	0.82	1.51	1.01	0.13
T-Line Site Vehicle	(tons/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T-Line Site Off-Road + T-Line Site Vehicle	(tons/month)	0.00	0.15	0.11	0.82	1.51	1.01	0.13
Offsite Haul Truck	(tons/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	(tons/month)	0.000	0.000	0.072	0.072	0.067	0.000	0.000
Offsite Worker Travel	(tons/month)	0.000	0.008	0.011	0.013	0.011	0.006	0.005
T-Line Site Off-Road Equipment	7-month total (tons/year)							3.73
T-Line Site Off-Road + T-Line Site Vehicle	7-month total (tons/year)							3.74
Offsite Haul Truck	7-month total (tons/year)							0.00
Offsite Delivery Truck	7-month total (tons/year)							0.21
Offsite Worker Travel	7-month total (tons/year)							0.05
					CO			
T-Line Site Off-Road Equipment	(tons/month)	0.000	0.310	0.223	1.609	2.981	1.996	0.266
T-Line Site Vehicle	(tons/month)	0.000	0.000	0.001	0.001	0.001	0.000	0.000
T-Line Site Off-Road + T-Line Site Vehicle	(tons/month)	0.000	0.310	0.224	1.611	2.982	1.997	0.266
Offsite Haul Truck	(tons/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	(tons/month)	0.000	0.000	0.051	0.051	0.048	0.000	0.000
Offsite Worker Travel	(tons/month)	0.004	0.074	0.098	0.113	0.098	0.054	0.041
T-Line Site Off-Road Equipment	7-month total (tons/year)							7.38
T-Line Site Off-Road + T-Line Site Vehicle	7-month total (tons/year)							7.39
Offsite Haul Truck	7-month total (tons/year)							0.00
Offsite Delivery Truck	7-month total (tons/year)							0.15
Offsite Worker Travel	7-month total (tons/year)							0.48

Construction of the Proposed SEP Transmission Line - Monthly and Annual Emission Calculations

Project Month		7	8	9	10	11	12	13
					SO2			
T-Line Site Off-Road Equipment	(tons/month)	0.00E+00	5.80E-04	4.00E-04	2.93E-03	5.42E-03	3.64E-03	5.00E-04
T-Line Site Vehicle	(tons/month)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
T-Line Site Off-Road + T-Line Site Vehicle	(tons/month)	6.51E-08	5.81E-04	4.03E-04	2.93E-03	5.42E-03	3.64E-03	5.01E-04
Offsite Haul Truck	(tons/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	(tons/month)	0.00E+00	0.00E+00	2.50E-04	2.50E-04	2.30E-04	0.00E+00	0.00E+00
Offsite Worker Travel	(tons/month)	1.00E-05	1.50E-04	2.00E-04	2.30E-04	2.00E-04	1.10E-04	8.00E-05
T-Line Site Off-Road Equipment	7-month total (tons/year)							0.01
T-Line Site Off-Road + T-Line Site Vehicle	7-month total (tons/year)							0.01
Offsite Haul Truck	7-month total (tons/year)							0.00
Offsite Delivery Truck	7-month total (tons/year)							0.00
Offsite Worker Travel	7-month total (tons/year)							0.00
					PM10			
T-Line Site Off-Road Equipment	(tons/month)	0.00E+00	9.50E-04	6.50E-04	4.80E-03	8.89E-03	5.97E-03	8.20E-04
T-Line Site Vehicle	(tons/month)	0.00E+00	5.21E-07	1.74E-05	1.75E-05	1.64E-05	3.95E-07	2.63E-07
T-Line Site Off-Road + T-Line Site Vehicle	(tons/month)	0.00E+00	9.51E-04	6.67E-04	4.82E-03	8.91E-03	5.97E-03	8.20E-04
Offsite Haul Truck	(tons/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	(tons/month)	0.00E+00	0.00E+00	2.19E-03	2.18E-03	2.05E-03	0.00E+00	0.00E+00
Offsite Worker Travel	(tons/month)	0.00E+00	8.00E-05	1.00E-04	1.20E-04	1.00E-04	6.00E-05	4.00E-05
T-Line Site Off-Road Equipment	7-month total (tons/year)							0.02
T-Line Site Off-Road + T-Line Site Vehicle	7-month total (tons/year)							0.02
Offsite Haul Truck	7-month total (tons/year)							0.00
Offsite Delivery Truck	7-month total (tons/year)							0.01
Offsite Worker Travel	7-month total (tons/year)							0.00
T-Line Site Fugitive (Off-Road)	(tons/month)	0.00E+00	2.84E-03	0.00E+00	0.00E+00	2.94E-02	3.38E-02	2.84E-03
T-Line Site Fugitive (T-Line Site Vehicle)	(tons/month)	7.95E-05	1.59E-03	3.39E-03	3.70E-03	3.38E-03	1.16E-03	8.75E-04
T-Line Site Off-Road + T-Line Site Vehicle	(tons/month)	7.95E-05	4.43E-03	3.39E-03	3.70E-03	3.28E-02	3.50E-02	3.71E-03
Offsite Fugitive - Haul Truck	(tons/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Fugitive - Delivery Truck	(tons/month)	0.00E+00	0.00E+00	7.44E-03	7.41E-03	6.94E-03	0.00E+00	0.00E+00
Offsite Fugitive - Worker Travel	(tons/month)	6.20E-04	1.24E-02	1.64E-02	1.88E-02	1.64E-02	9.08E-03	6.83E-03
T-Line Site Fugitive (Off-Road)	7-month total (tons/year)							0.07
T-Line Site Fugitive - Off-Road + T-Line Site Veh	7-month total (tons/year)							0.08
Offsite Fugitive - Haul Truck	7-month total (tons/year)							0.00
Offsite Fugitive - Delivery Truck	7-month total (tons/year)							0.02
Offsite Fugitive - Worker Travel	7-month total (tons/year)							0.08

Construction of the Proposed SEP Transmission Line - Monthly and Annual Emission Calculations

Project Month		7	8	9	10	11	12	13
					PM2.5			
T-Line Site Off-Road Equipment	(tons/month)	0.0E+00	9.5E-04	6.5E-04	4.8E-03	8.9E-03	6.0E-03	8.2E-04
T-Line Site Vehicle	(tons/month)	0.0E+00	4.6E-07	1.6E-05	1.6E-05	1.5E-05	3.3E-07	2.6E-07
T-Line Site Off-Road + T-Line Site Vehicle	(tons/month)	0.0E+00	9.5E-04	6.7E-04	4.8E-03	8.9E-03	6.0E-03	8.2E-04
Offsite Haul Truck	(tons/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	(tons/month)	0.0E+00	0.0E+00	2.0E-03	2.0E-03	1.9E-03	0.0E+00	0.0E+00
Offsite Worker Travel	(tons/month)	0.0E+00	7.0E-05	1.0E-04	1.1E-04	1.0E-04	5.0E-05	4.0E-05
T-Line Site Off-Road Equipment	7-month total (tons/year)							0.02
T-Line Site Off-Road + T-Line Site Vehicle	7-month total (tons/year)							0.02
Offsite Haul Truck	7-month total (tons/year)							0.00
Offsite Delivery Truck	7-month total (tons/year)							0.01
Offsite Worker Travel	7-month total (tons/year)							0.00
T-Line Site Fugitive (Off-Road)	(tons/month)	0.0E+00	3.1E-04	0.0E+00	0.0E+00	1.6E-02	1.9E-02	3.1E-04
T-Line Site Fugitive (T-Line Site Vehicle)	(tons/month)	8.0E-06	1.6E-04	3.4E-04	3.7E-04	3.4E-04	1.2E-04	8.7E-05
T-Line Site Off-Road + T-Line Site Vehicle	(tons/month)	8.0E-06	4.7E-04	3.4E-04	3.7E-04	1.6E-02	1.9E-02	4.0E-04
Offsite Fugitive - Haul Truck	(tons/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Fugitive - Delivery Truck	(tons/month)	0.0E+00	0.0E+00	2.1E-03	2.1E-03	2.0E-03	0.0E+00	0.0E+00
Offsite Fugitive - Worker Travel	(tons/month)	0.00	0.00	0.00	0.01	0.00	0.00	0.00
T-Line Site Fugitive (Off-Road)	7-month total (tons/year)							0.04
T-Line Site Fugitive - Off-Road + T-Line Site Veh	7-month total (tons/year)							0.04
Offsite Fugitive - Haul Truck	7-month total (tons/year)							0.00
Offsite Fugitive - Delivery Truck	7-month total (tons/year)							0.01
Offsite Fugitive - Worker Travel	7-month total (tons/year)							0.02
					CO2			
T-Line Site Off-Road Equipment	(MT/month)	0.00	53.89	36.80	271.62	503.11	337.74	46.22
T-Line Site Vehicle	(MT/month)	0.004	0.072	0.267	0.281	0.256	0.053	0.040
T-Line Site Off-Road + T-Line Site Vehicle	(MT/month)	0.00	53.97	37.06	271.90	503.37	337.79	46.26
Offsite Haul Truck	(MT/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	(MT/month)	0.00	0.00	22.28	22.21	20.80	0.00	0.00
Offsite Worker Travel	(MT/month)	0.58	11.07	14.59	16.78	14.59	8.10	6.09
T-Line Site Off-Road Equipment	7-month total (tons/year)							1,249.38
T-Line Site Off-Road + T-Line Site Vehicle	7-month total (tons/year)							1,250.35
Offsite Haul Truck	7-month total (tons/year)							0.00
Offsite Delivery Truck	7-month total (tons/year)							65.29
Offsite Worker Travel	7-month total (tons/year)							71.79

Construction of the Proposed SEP Transmission Line - Monthly and Annual Emission Calculations

Project Month		7	8	9	10	11	12	13
					CH4			
T-Line Site Off-Road Equipment	(MT/month)	0.000	0.017	0.011	0.083	0.154	0.104	0.014
T-Line Site Vehicle	(MT/month)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
T-Line Site Off-Road + T-Line Site Vehicle	(MT/month)	0.00	0.02	0.01	0.08	0.15	0.10	0.01
Offsite Haul Truck	(MT/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	(MT/month)	0.00E+00	0.00E+00	1.00E-04	1.00E-04	1.00E-04	0.00E+00	0.00E+00
Offsite Worker Travel	(MT/month)	3.00E-05	6.30E-04	8.20E-04	9.50E-04	8.20E-04	4.60E-04	3.40E-04
T-Line Site Off-Road Equipment	7-month total (MT/year)							0.38
T-Line Site Off-Road + T-Line Site Vehicle	7-month total (MT/year)							0.38
Offsite Haul Truck	7-month total (MT/year)							0.00
Offsite Delivery Truck	7-month total (MT/year)							0.00
Offsite Worker Travel	7-month total (MT/year)							0.00
					N2O			
T-Line Site Off-Road Equipment	(MT/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T-Line Site Vehicle	(MT/month)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
T-Line Site Off-Road + T-Line Site Vehicle	(MT/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Haul Truck	(MT/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	(MT/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Worker Travel	(MT/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T-Line Site Off-Road Equipment	7-month total (MT/year)							0.00
T-Line Site Off-Road + T-Line Site Vehicle	7-month total (MT/year)							0.00
Offsite Haul Truck	7-month total (MT/year)							0.00
Offsite Delivery Truck	7-month total (MT/year)							0.00
Offsite Worker Travel	7-month total (MT/year)							0.00
					CO2e			
T-Line Site Off-Road Equipment	(MT/month)	0.00	54.31	37.08	273.70	506.96	340.33	46.58
T-Line Site Vehicle	(MT/month)	0.004	0.072	0.267	0.281	0.256	0.053	0.040
T-Line Site Off-Road + T-Line Site Vehicle	(MT/month)	0.00	54.38	37.35	273.98	507.22	340.38	46.62
Offsite Haul Truck	(MT/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	(MT/month)	0.00	0.00	22.28	22.21	20.80	0.00	0.00
Offsite Worker Travel	(MT/month)	0.58	11.08	14.61	16.80	14.61	8.11	6.10
T-Line Site Off-Road Equipment	7-month total (MT/year)							1,258.95
T-Line Site Off-Road + T-Line Site Vehicle	7-month total (MT/year)							1,259.93
Offsite Haul Truck	7-month total (MT/year)							0.00
Offsite Delivery Truck	7-month total (MT/year)							65.29
Offsite Worker Travel	7-month total (MT/year)							71.89

Construction of the Proposed SEP Project Site - Summer (Peak) Daily Emissions

Project Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	ROG (lbs/day)																					
Onsite Off-Road Equipment	1.64	2.32	1.72	3.42	3.45	3.34	2.40	2.79	2.77	2.77	2.73	2.82	3.02	3.03	2.36	2.27	2.27	1.55	1.25	0.90	0.97	0.90
Onsite Vehicle	0.01	0.01	0.01	0.01	0.03	0.04	0.05	0.03	0.04	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.01	0.00	0.00
Onsite Off-Road + Onsite Vehicle	1.64	2.33	1.74	3.43	3.48	3.38	2.45	2.82	2.81	2.81	2.77	2.86	3.06	3.06	2.39	2.30	2.30	1.57	1.27	0.90	0.97	0.90
Offsite Haul Truck	0.41	0.42	0.82	0.46	1.67	2.30	4.15	1.40	1.48	0.75	0.40	0.36	0.38	0.38	0.38	0.38	0.73	0.67	0.76	0.33	0.00	0.00
Offsite Delivery Truck	0.00	0.15	0.15	0.15	0.59	0.89	0.89	0.80	1.07	1.33	1.07	0.80	0.27	0.13	0.13	0.13	0.13	0.13	0.13	0.00	0.00	0.00
Offsite Worker Travel	0.45	0.56	0.92	1.32	1.81	2.02	2.26	2.34	2.91	3.54	4.10	4.32	4.51	3.96	3.79	3.49	3.08	2.84	1.79	0.69	0.31	0.13
	NOx (lbs/day)																					
Onsite Off-Road Equipment	26.84	38.23	28.92	58.01	58.86	55.29	39.84	45.72	45.45	45.45	44.44	45.89	49.15	51.80	38.47	37.02	37.02	25.37	20.21	14.43	17.02	14.43
Onsite Vehicle	0.06	0.08	0.14	0.07	0.31	0.43	0.67	0.30	0.36	0.32	0.25	0.21	0.15	0.12	0.12	0.12	0.15	0.14	0.13	0.05	0.01	0.00
Onsite Off-Road + Onsite Vehicle	26.90	38.31	29.05	58.08	59.17	55.72	40.51	46.03	45.81	45.77	44.69	46.10	49.30	51.92	38.58	37.14	37.17	25.51	20.34	14.48	17.03	14.44
Offsite Haul Truck	6.75	6.80	13.41	4.69	27.20	37.38	67.50	21.66	22.83	11.65	6.20	5.61	5.87	5.91	5.83	5.91	11.28	10.38	11.82	4.79	0.00	0.00
Offsite Delivery Truck	0.00	2.58	2.58	2.58	10.31	15.46	15.46	13.48	17.97	22.47	17.97	13.48	4.49	2.25	2.25	2.25	2.25	2.25	2.25	0.00	0.00	0.00
Offsite Worker Travel	1.00	1.23	2.04	2.92	4.00	4.46	5.00	5.45	6.79	8.24	9.55	10.07	10.51	9.24	8.82	8.14	7.17	6.62	4.17	1.71	0.78	0.31
	CO (lbs/day)																					
Onsite Off-Road Equipment	53.09	75.51	55.85	113.27	114.14	108.54	78.11	90.66	90.12	90.12	88.61	91.52	98.11	102.06	76.56	73.65	73.65	50.16	40.73	29.09	33.54	29.09
Onsite Vehicle	0.11	0.14	0.24	0.28	0.50	0.62	0.82	0.61	0.74	0.81	0.85	0.86	0.85	0.74	0.71	0.66	0.62	0.57	0.39	0.16	0.06	0.02
Onsite Off-Road + Onsite Vehicle	53.20	75.65	56.09	113.55	114.64	109.16	78.92	91.27	90.86	90.93	89.47	92.39	98.96	102.80	77.27	74.31	74.27	50.73	41.12	29.25	33.60	29.11
Offsite Haul Truck	4.64	4.68	9.22	5.84	18.70	25.71	46.42	16.10	16.97	8.66	4.61	4.17	4.36	4.39	4.33	4.39	8.39	7.72	8.79	3.87	0.00	0.00
Offsite Delivery Truck	0.00	1.76	1.76	1.76	7.05	10.57	10.57	9.56	12.74	15.93	12.74	9.56	3.19	1.59	1.59	1.59	1.59	1.59	1.59	0.00	0.00	0.00
Offsite Worker Travel	11.68	14.38	23.81	34.14	46.72	52.12	58.41	63.07	78.64	95.40	110.57	116.56	121.75	106.98	102.19	94.20	83.03	76.64	48.30	19.65	8.93	3.57
	SO2 (lbs/day)																					
Onsite Off-Road Equipment	0.10	0.14	0.11	0.22	0.22	0.21	0.16	0.18	0.18	0.18	0.18	0.18	0.19	0.20	0.15	0.15	0.15	0.10	0.08	0.06	0.06	0.05
Onsite Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Off-Road + Onsite Vehicle	0.10	0.14	0.11	0.22	0.22	0.21	0.16	0.18	0.18	0.18	0.18	0.18	0.20	0.20	0.15	0.15	0.15	0.10	0.08	0.06	0.06	0.05
Offsite Haul Truck	2.46E-02	2.47E-02	4.88E-02	1.61E-02	9.90E-02	1.36E-01	2.46E-01	9.05E-02	9.54E-02	4.87E-02	2.59E-02	2.34E-02	2.45E-02	2.47E-02	2.43E-02	2.47E-02	4.71E-02	4.34E-02	4.94E-02	2.25E-02	0.00E+00	0.00E+00
Offsite Delivery Truck	0.00E+00	8.28E-03	8.28E-03	8.28E-03	3.31E-02	4.97E-02	4.97E-02	4.96E-02	6.62E-02	8.27E-02	6.62E-02	4.96E-02	1.65E-02	8.27E-03	8.27E-03	8.27E-03	8.27E-03	8.27E-03	8.27E-03	0.00E+00	0.00E+00	0.00E+00
Offsite Worker Travel	1.96E-02	2.41E-02	3.99E-02	5.72E-02	7.83E-02	8.73E-02	9.79E-02	1.19E-01	1.48E-01	1.80E-01	2.08E-01	2.20E-01	2.29E-01	2.02E-01	1.93E-01	1.78E-01	1.57E-01	1.44E-01	9.10E-02	4.13E-02	1.88E-02	7.52E-03
	PM10 (lbs/day)																					
Onsite Off-Road Equipment	0.22	0.29	0.22	0.39	0.43	0.38	0.23	0.28	0.27	0.27	0.27	0.28	0.30	0.30	0.23	0.22	0.22	0.15	0.13	0.09	0.10	0.09
Onsite Vehicle	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Off-Road + Onsite Vehicle	0.22	0.29	0.23	0.40	0.44	0.40	0.25	0.28	0.28	0.28	0.28	0.29	0.30	0.31	0.24	0.23	0.23	0.16	0.13	0.09	0.10	0.09
Offsite Haul Truck	0.21	0.21	0.41	0.13	0.84	1.16	2.09	0.69	0.72	0.37	0.20	0.18	0.19	0.19	0.18	0.19	0.36	0.33	0.37	0.17	0.00	0.00
Offsite Delivery Truck	0.00E+00	8.28E-02	8.28E-02	8.28E-02	3.31E-01	4.97E-01	4.97E-01	4.38E-01	5.84E-01	7.30E-01	5.84E-01	4.38E-01	1.46E-01	7.30E-02	7.30E-02	7.30E-02	7.30E-02	7.30E-02	7.30E-02	0.00E+00	0.00E+00	0.00E+00
Offsite Worker Travel	9.83E-03	1.21E-02	2.00E-02	2.87E-02	3.93E-02	4.38E-02	4.91E-02	5.71E-02	7.12E-02	8.64E-02	1.00E-01	1.06E-01	1.10E-01	9.69E-02	9.25E-02	8.53E-02	7.52E-02	6.94E-02	4.37E-02	1.93E-02	8.76E-03	3.51E-03
Onsite Fugitive (Off-Road)	0.78	0.78	0.78	1.03	0.78	0.78	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Fugitive (Vehicle)	1.35	1.69	2.81	3.79	5.71	6.67	8.29	8.09	10.01	11.58	12.91	13.33	13.61	11.92	11.40	10.54	9.52	8.78	5.77	2.59	1.08	0.43
Onsite Fugitive - Off-Road + Onsite Veh	2.12	2.46	3.59	4.83	6.48	7.45	8.55	8.09	10.01	11.58	12.91	13.33	13.61	11.92	11.40	10.54	9.52	8.78	5.77	2.59	1.08	0.43
Offsite Fugitive - Haul Truck	0.58	0.58	1.15	0.37	2.33	3.21	5.79	2.14	2.25	1.15	0.61	0.55	0.58	0.58	0.57	0.58	1.11	1.02	1.17	0.53	0.00	0.00
Offsite Fugitive - Delivery Truck	0.00	0.25	0.25	0.25	1.01	1.51	1.51	1.51	2.01	2.52	2.01	1.51	0.50	0.25	0.25	0.25	0.25	0.25	0.25	0.00	0.00	0.00
Offsite Fugitive - Worker Travel	1.49	1.84	3.04	4.37	5.97	6.66	7.47	9.08	11.32	13.73	15.91	16.77	17.52	15.39	14.70	13.56	11.95	11.03	6.95	3.16	1.44	0.57
	PM2.5 (lbs/day)																					
Onsite Off-Road Equipment	0.22	0.29	0.22	0.39	0.43	0.38	0.23	0.28	0.27	0.27	0.27	0.28	0.30	0.30	0.23	0.22	0.22	0.15	0.13	0.09	0.10	0.09
Onsite Vehicle	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Off-Road + Onsite Vehicle	0.22	0.29	0.23	0.40	0.44	0.40	0.25	0.28	0.28	0.28	0.28	0.28	0.30	0.31	0.24	0.23	0.23	0.16	0.13	0.09	0.10	0.09
Offsite Haul Truck	0.19	0.19	0.38	0.12	0.77	1.06	1.92	0.63	0.66	0.34	0.18	0.16	0.17	0.17	0.17	0.17	0.33	0.30	0.34	0.15	0.00	0.00
Offsite Delivery Truck	0.00E+00	7.62E-02	7.62E-02	7.62E-02	3.05E-01	4.57E-01	4.57E-01	4.03E-01	5.37E-01	6.72E-01	5.37E-01	4.03E-01	1.34E-01	6.72E-02	6.72E-02	6.72E-02	6.72E-02	6.72E-02	6.72E-02	0.00E+00	0.00E+00	0.00E+00
Offsite Worker Travel	8.99E-03	1.11E-02	1.83E-02	2.63E-02	3.60E-02	4.01E-02	4.49E-02	5.25E-02	6.55E-02	7.94E-02	9.21E-02	9.71E-02	1.01E-01	8.91E-02	8.51E-02	7.84E-02	6.91E-02	6.38E-02	4.02E-02	1.78E-02	8.10E-03	3.24E-03
Onsite Fugitive (Off-Road)	0.08	0.08	0.08	0.11	0.08	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Fugitive (Vehicle)	0.13	0.17	0.28	0.38	0.57	0.67	0.83	0.81	1.00	1.16	1.29	1.33	1.36	1.19	1.14	1.05	0.95	0.88	0.58	0.26	0.11	0.04
Onsite Fugitive - Off-Road + Onsite Veh	0.22	0.25	0.36	0.49	0.65	0.75	0.86	0.81	1.00	1.16	1.29	1.33	1.36	1.19	1.14	1.05	0.95	0.88	0.58	0.26	0.11	0.04
Offsite Fugitive - Haul Truck	0.16	0.16	0.32	0.10	0.64	0.89	1.60	0.59	0.62	0.32	0.17	0.15	0.16	0.16	0.16	0.16	0.31	0.28	0.32	0.15	0.00	0.00
Offsite Fugitive - Delivery Truck	0.00	0.07	0.07	0.07	0.29	0.43	0.43	0.43	0.58	0.72	0.58	0.43	0.14	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00
Offsite Fugitive - Worker Travel	0.40	0.49	0.81	1.16	1.59	1.78	1.99	2.42	3.02	3.66	4.24	4.47	4.67	4.11	3.92	3.62	3.19	2.94	1.85	0.84	0.38	0.15

Construction of the Proposed SEP Project Site - Summer (Peak) Daily Emissions

Project Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
											CO2 (lbs/day)											
Onsite Off-Road Equipment	10,449	14,805	10,827	21,951	22,062	21,327	15,549	17,885	17,789	17,789	17,556	18,117	19,376	19,831	15,252	14,691	14,691	9,789	8,054	5,723	6,314	5,498
Onsite Vehicle	29.49	38.43	65.51	49.41	144.05	190.34	280.79	167.78	199.17	192.39	177.19	168.55	149.27	128.81	123.91	116.43	122.69	113.63	90.73	37.35	9.31	3.72
Onsite Off-Road + Onsite Vehicle	10,478	14,843	10,892	22,000	22,206	21,517	15,829	18,053	17,988	17,981	17,733	18,285	19,525	19,959	15,376	14,808	14,814	9,903	8,145	5,760	6,323	5,502
Offsite Haul Truck	2,479	2,497	4,925	1,617	9,989	13,731	24,792	8,994	9,481	4,839	2,576	2,330	2,436	2,454	2,419	2,454	4,684	4,309	4,907	2,201	0	0
Offsite Delivery Truck	0	833	833	833	3,332	4,997	4,997	4,915	6,553	8,191	6,553	4,915	1,638	819	819	819	819	819	819	0	0	0
Offsite Worker Travel	1,609	1,980	3,280	4,703	6,436	7,178	8,045	9,388	11,705	14,200	16,458	17,349	18,121	15,923	15,210	14,022	12,358	11,408	7,189	3,143	1,429	571
											CH4 (lbs/day)											
Onsite Off-Road Equipment	3.11	4.42	3.21	5.80	5.84	5.60	3.84	4.60	4.57	4.57	4.51	4.68	5.06	4.89	3.80	3.63	3.63	2.93	2.42	1.73	1.92	1.71
Onsite Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Off-Road + Onsite Vehicle	3.11	4.42	3.22	5.80	5.84	5.61	3.84	4.60	4.58	4.58	4.51	4.68	5.07	4.90	3.81	3.63	3.63	2.94	2.42	1.74	1.92	1.71
Offsite Haul Truck	1.24E-02	1.25E-02	2.46E-02	8.73E-03	4.98E-02	6.85E-02	1.24E-01	4.27E-02	4.50E-02	2.30E-02	1.22E-02	1.11E-02	1.16E-02	1.17E-02	1.15E-02	1.17E-02	2.22E-02	2.05E-02	2.33E-02	1.05E-02	0.00E+00	0.00E+00
Offsite Delivery Truck	0.00E+00	4.11E-03	4.11E-03	4.11E-03	1.65E-02	2.47E-02	2.47E-02	2.26E-02	3.01E-02	3.76E-02	3.01E-02	2.26E-02	7.53E-03	3.76E-03	3.76E-03	3.76E-03	3.76E-03	3.76E-03	3.76E-03	0.00E+00	0.00E+00	0.00E+00
Offsite Worker Travel	0.09	0.11	0.18	0.26	0.36	0.40	0.44	0.49	0.62	0.75	0.87	0.91	0.96	0.84	0.80	0.74	0.65	0.60	0.38	0.16	0.07	0.03
											N2O (lbs/day)											
Onsite Off-Road Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Onsite Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Off-Road + Onsite Vehicle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Offsite Haul Truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Offsite Delivery Truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Offsite Worker Travel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
											CO2e (lbs/day)											
Onsite Off-Road Equipment	10,526	14,915	10,907	22,096	22,208	21,467	15,645	18,000	17,903	17,903	17,669	18,234	19,502	19,953	15,347	14,782	14,782	9,862	8,115	5,766	6,362	5,541
Onsite Vehicle	29.50	38.45	65.54	49.46	144.12	190.42	280.89	167.87	199.28	192.53	177.34	168.71	149.43	128.95	124.04	116.55	122.80	113.73	90.80	37.38	9.32	3.73
Onsite Off-Road + Onsite Vehicle	10,556	14,954	10,973	22,145	22,352	21,657	15,925	18,168	18,102	18,095	17,846	18,402	19,652	20,082	15,471	14,898	14,905	9,976	8,206	5,803	6,371	5,545
Offsite Haul Truck	2,479	2,498	4,926	1,617	9,991	13,733	24,795	8,995	9,482	4,840	2,577	2,330	2,436	2,454	2,420	2,454	4,685	4,310	4,908	2,201	0	0
Offsite Delivery Truck	0	833	833	833	3,332	4,998	4,998	4,915	6,553	8,192	6,553	4,915	1,638	819	819	819	819	819	819	0	0	0
Offsite Worker Travel	1,611	1,983	3,284	4,710	6,445	7,188	8,056	9,400	11,720	14,219	16,480	17,372	18,145	15,944	15,230	14,040	12,375	11,423	7,199	3,147	1,431	572

Construction of the Proposed SEP Transmission Line - Summer (Peak) Daily Emissions

Project Month	7	8	9	10	11	12	13
	ROG (lbs/day)						
T-Line Site Off-Road Equipment	0.00	0.87	0.66	4.21	8.89	5.16	0.74
T-Line Site Vehicle	0.00	0.00	0.01	0.01	0.01	0.00	0.00
T-Line Site Off-Road + T-Line Site Vehicle	0.00	0.87	0.66	4.22	8.90	5.16	0.74
Offsite Haul Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	0.00	0.00	0.40	0.35	0.37	0.00	0.00
Offsite Worker Travel	0.02	0.30	0.43	0.43	0.43	0.21	0.16
	NOx (lbs/day)						
T-Line Site Off-Road Equipment	0.00	13.98	11.36	71.09	150.99	87.58	11.98
T-Line Site Vehicle	0.00	0.00	0.06	0.05	0.05	0.00	0.00
T-Line Site Off-Road + T-Line Site Vehicle	0.00	13.98	11.42	71.14	151.04	87.58	11.98
Offsite Haul Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	0.00	0.00	6.74	5.84	6.29	0.00	0.00
Offsite Worker Travel	0.04	0.69	1.00	1.00	1.00	0.48	0.38
	CO (lbs/day)						
T-Line Site Off-Road Equipment	0.00	28.17	22.30	139.95	298.08	173.60	24.14
T-Line Site Vehicle	0.00	0.05	0.11	0.11	0.11	0.04	0.03
T-Line Site Off-Road + T-Line Site Vehicle	0.00	28.22	22.41	140.06	298.19	173.64	24.17
Offsite Haul Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	0.00	0.00	4.78	4.14	4.46	0.00	0.00
Offsite Worker Travel	0.45	7.98	11.58	11.58	11.58	5.59	4.39
	SO2 (lbs/day)						
T-Line Site Off-Road Equipment	0.00	0.05	0.04	0.25	0.54	0.32	0.05
T-Line Site Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T-Line Site Off-Road + T-Line Site Vehicle	0.00	0.05	0.04	0.25	0.54	0.32	0.05
Offsite Haul Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	0.00E+00	0.00E+00	2.48E-02	2.15E-02	2.32E-02	0.00E+00	0.00E+00
Offsite Worker Travel	7.50E-04	1.50E-02	2.18E-02	2.18E-02	2.18E-02	1.05E-02	8.27E-03
	PM10 (lbs/day)						
T-Line Site Off-Road Equipment	0.00	0.09	0.07	0.42	0.89	0.52	0.07
T-Line Site Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T-Line Site Off-Road + T-Line Site Vehicle	0.00	0.09	0.07	0.42	0.89	0.52	0.07
Offsite Haul Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	0.00E+00	0.00E+00	2.19E-01	1.90E-01	2.04E-01	0.00E+00	0.00E+00
Offsite Worker Travel	3.80E-04	7.23E-03	1.05E-02	1.05E-02	1.05E-02	5.06E-03	3.98E-03
T-Line Site Fugitive (Off-Road)	0.00	0.26	0.00	0.00	2.94	2.94	0.26
T-Line Site Fugitive (T-Line Site Vehicle)	0.01	0.14	0.34	0.32	0.34	0.10	0.08
T-Line Site Fugitive - Off-Road + T-Line Site Veh	0.01	0.40	0.34	0.32	3.27	3.04	0.34
Offsite Fugitive - Haul Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Fugitive - Delivery Truck	0.00	0.00	0.75	0.65	0.70	0.00	0.00
Offsite Fugitive - Worker Travel	0.06	1.15	1.67	1.67	1.67	0.80	0.63
	PM2.5 (lbs/day)						
T-Line Site Off-Road Equipment	0.00	0.09	0.07	0.42	0.89	0.52	0.07
T-Line Site Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T-Line Site Off-Road + T-Line Site Vehicle	0.00	0.09	0.07	0.42	0.89	0.52	0.07
Offsite Haul Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	0.00E+00	0.00E+00	2.02E-01	1.75E-01	1.88E-01	0.00E+00	0.00E+00
Offsite Worker Travel	3.50E-04	6.65E-03	9.64E-03	9.64E-03	9.64E-03	4.65E-03	3.66E-03
T-Line Site Fugitive (Off-Road)	0.00	0.03	0.00	0.00	1.61	1.61	0.03
T-Line Site Fugitive (T-Line Site Vehicle)	0.00	0.01	0.03	0.03	0.03	0.01	0.01
T-Line Site Fugitive - Off-Road + T-Line Site Veh	0.00	0.04	0.03	0.03	1.65	1.62	0.04
Offsite Fugitive - Haul Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Fugitive - Delivery Truck	0.00	0.00	0.22	0.19	0.20	0.00	0.00
Offsite Fugitive - Worker Travel	0.02	0.31	0.44	0.44	0.44	0.21	0.17

Construction of the Proposed SEP Transmission Line - Summer (Peak) Daily Emissions

Project Month	7	8	9	10	11	12	13
	CO2 (lbs/day)						
T-Line Site Off-Road Equipment	0	5,401	4,056	26,035	55,458	32,373	4,632
T-Line Site Vehicle	0.40	7.74	30.19	27.67	28.93	5.48	4.30
T-Line Site Off-Road + T-Line Site Vehicle	0	5,408	4,086	26,063	55,487	32,379	4,636
Offsite Haul Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	0	0	2,457	2,130	2,293	0	0
Offsite Worker Travel	62	1,188	1,723	1,723	1,723	832	654
	CH4 (lbs/day)						
T-Line Site Off-Road Equipment	0.00	1.65	1.24	7.98	16.99	9.92	1.42
T-Line Site Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T-Line Site Off-Road + T-Line Site Vehicle	0.00	1.66	1.24	7.98	16.99	9.92	1.42
Offsite Haul Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	0.00E+00	0.00E+00	1.13E-02	9.78E-03	1.05E-02	0.00E+00	0.00E+00
Offsite Worker Travel	0.00	0.06	0.09	0.09	0.09	0.04	0.03
	N2O (lbs/day)						
T-Line Site Off-Road Equipment	0		0	0	0	0	0
T-Line Site Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T-Line Site Off-Road + T-Line Site Vehicle	0	0	0	0	0	0	0
Offsite Haul Truck	0		0	0	0	0	0
Offsite Delivery Truck	0		0	0	0	0	0
Offsite Worker Travel	0		0	0	0	0	0
	CO2e (lbs/day)						
T-Line Site Off-Road Equipment	0	5,442	4,087	26,235	55,883	32,621	4,668
T-Line Site Vehicle	0.40	7.75	30.20	27.69	28.95	5.48	4.31
T-Line Site Off-Road + T-Line Site Vehicle	0	5,450	4,118	26,262	55,912	32,627	4,672
Offsite Haul Truck	0	0	0	0	0	0	0
Offsite Delivery Truck	0	0	2,458	2,130	2,294	0	0
Offsite Worker Travel	62	1,190	1,725	1,725	1,725	833	654

Construction of the Proposed SEP Project Site - Winter (Peak) Daily Emissions

Project Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	ROG (lbs/day)																					
Onsite Off-Road Equipment	1.64	2.32	1.72	3.42	3.45	3.34	2.40	2.79	2.77	2.77	2.73	2.82	3.02	3.03	2.36	2.27	2.27	1.55	1.25	0.90	0.97	0.90
Onsite Vehicle	0.01	0.01	0.01	0.01	0.03	0.04	0.05	0.03	0.04	0.04	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.01	0.00	0.00
Onsite Off-Road + Onsite Vehicle	1.64	2.33	1.74	3.43	3.48	3.38	2.45	2.82	2.81	2.81	2.76	2.85	3.05	3.05	2.38	2.29	2.29	1.57	1.27	0.90	0.97	0.90
Offsite Haul Truck	0.43	0.44	0.86	0.50	1.75	2.40	4.34	1.46	1.54	0.79	0.42	0.38	0.40	0.40	0.39	0.40	0.76	0.70	0.80	0.35	0.00	0.00
Offsite Delivery Truck	0.00	0.15	0.15	0.15	0.61	0.92	0.92	0.83	1.10	1.38	1.10	0.83	0.28	0.14	0.14	0.14	0.14	0.14	0.14	0.00	0.00	0.00
Offsite Worker Travel	0.38	0.47	0.77	1.11	1.52	1.69	1.90	1.93	2.41	2.92	3.39	3.57	3.73	3.28	3.13	2.89	2.54	2.35	1.48	0.56	0.26	0.10
	NOx (lbs/day)																					
Onsite Off-Road Equipment	26.84	38.23	28.92	58.01	58.86	55.29	39.84	45.72	45.45	45.45	44.44	45.89	49.15	51.80	38.47	37.02	37.02	25.37	20.21	14.43	17.02	14.43
Onsite Vehicle	0.06	0.08	0.14	0.08	0.33	0.46	0.71	0.32	0.38	0.33	0.26	0.22	0.16	0.13	0.13	0.12	0.16	0.15	0.14	0.05	0.01	0.00
Onsite Off-Road + Onsite Vehicle	26.90	38.31	29.06	58.09	59.19	55.75	40.55	46.05	45.83	45.79	44.71	46.11	49.31	51.93	38.59	37.14	37.18	25.51	20.35	14.48	17.03	14.44
Offsite Haul Truck	7.13	7.18	14.16	4.93	28.72	39.48	71.28	22.87	24.11	12.31	6.55	5.93	6.19	6.24	6.15	6.24	11.91	10.96	12.48	5.06	0.00	0.00
Offsite Delivery Truck	0.00	2.74	2.74	2.74	10.94	16.42	16.42	14.31	19.08	23.86	19.08	14.31	4.77	2.39	2.39	2.39	2.39	2.39	2.39	0.00	0.00	0.00
Offsite Worker Travel	1.05	1.29	2.14	3.07	4.20	4.68	5.25	5.70	7.11	8.63	10.00	10.54	11.01	9.67	9.24	8.52	7.51	6.93	4.37	1.79	0.81	0.33
	CO (lbs/day)																					
Onsite Off-Road Equipment	53.09	75.51	55.85	113.27	114.14	108.54	78.11	90.66	90.12	90.12	88.61	91.52	98.11	102.06	76.56	73.65	73.65	50.16	40.73	29.09	33.54	29.09
Onsite Vehicle	0.10	0.13	0.21	0.24	0.45	0.57	0.77	0.53	0.65	0.69	0.70	0.70	0.68	0.59	0.57	0.53	0.50	0.47	0.33	0.13	0.04	0.02
Onsite Off-Road + Onsite Vehicle	53.19	75.64	56.06	113.50	114.59	109.11	78.88	91.20	90.76	90.80	89.32	92.23	98.78	102.65	77.13	74.18	74.16	50.63	41.06	29.22	33.59	29.11
Offsite Haul Truck	5.09	5.13	10.12	6.73	20.52	28.21	50.93	17.80	18.77	9.58	5.10	4.61	4.82	4.86	4.79	4.86	9.27	8.53	9.71	4.29	0.00	0.00
Offsite Delivery Truck	0.00	1.87	1.87	1.87	7.48	11.21	11.21	10.23	13.65	17.06	13.65	10.23	3.41	1.71	1.71	1.71	1.71	1.71	1.71	0.00	0.00	0.00
Offsite Worker Travel	9.09	11.19	18.54	26.58	36.37	40.57	45.46	48.89	60.96	73.96	85.72	90.36	94.38	82.93	79.22	73.03	64.37	59.41	37.44	15.17	6.89	2.76
	SO2 (lbs/day)																					
Onsite Off-Road Equipment	0.10	0.14	0.11	0.22	0.22	0.21	0.16	0.18	0.18	0.18	0.18	0.18	0.19	0.20	0.15	0.15	0.15	0.10	0.08	0.06	0.06	0.05
Onsite Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Off-Road + Onsite Vehicle	0.10	0.14	0.11	0.22	0.22	0.21	0.16	0.18	0.18	0.18	0.18	0.18	0.20	0.20	0.15	0.15	0.15	0.10	0.08	0.06	0.06	0.05
Offsite Haul Truck	0.02	0.02	0.05	0.02	0.10	0.14	0.25	0.09	0.10	0.05	0.03	0.02	0.02	0.02	0.02	0.02	0.05	0.04	0.05	0.02	0.00	0.00
Offsite Delivery Truck	0.00	0.01	0.01	0.01	0.03	0.05	0.05	0.05	0.07	0.08	0.07	0.05	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00
Offsite Worker Travel	0.02	0.02	0.04	0.05	0.07	0.08	0.09	0.11	0.13	0.16	0.19	0.20	0.21	0.18	0.17	0.16	0.14	0.13	0.08	0.04	0.02	0.01
	PM10 (lbs/day)																					
Onsite Off-Road Equipment	0.22	0.29	0.22	0.39	0.43	0.38	0.23	0.28	0.27	0.27	0.27	0.28	0.30	0.30	0.23	0.22	0.22	0.15	0.13	0.09	0.10	0.09
Onsite Vehicle	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Off-Road + Onsite Vehicle	0.22	0.29	0.23	0.40	0.44	0.40	0.25	0.28	0.28	0.28	0.28	0.29	0.30	0.31	0.24	0.23	0.23	0.16	0.13	0.09	0.10	0.09
Offsite Haul Truck	0.21	0.21	0.41	0.14	0.84	1.16	2.09	0.69	0.72	0.37	0.20	0.18	0.19	0.19	0.18	0.19	0.36	0.33	0.37	0.17	0.00	0.00
Offsite Delivery Truck	0.00	0.08	0.08	0.08	0.33	0.50	0.50	0.44	0.58	0.73	0.58	0.44	0.15	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00
Offsite Worker Travel	0.01	0.01	0.02	0.03	0.04	0.04	0.05	0.06	0.07	0.09	0.10	0.11	0.11	0.10	0.09	0.09	0.08	0.07	0.04	0.02	0.01	0.00
Onsite Fugitive (Off-Road)	0.78	0.78	0.78	1.03	0.78	0.78	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Fugitive (Vehicle)	1.35	1.69	2.81	3.79	5.71	6.67	8.29	8.09	10.01	11.58	12.91	13.33	13.61	11.92	11.40	10.54	9.52	8.78	5.77	2.59	1.08	0.43
Onsite Fugitive - Off-Road + Onsite Veh	2.12	2.46	3.59	4.83	6.48	7.45	8.55	8.09	10.01	11.58	12.91	13.33	13.61	11.92	11.40	10.54	9.52	8.78	5.77	2.59	1.08	0.43
Offsite Fugitive - Haul Truck	0.58	0.58	1.15	0.37	2.33	3.21	5.79	2.14	2.25	1.15	0.61	0.55	0.58	0.58	0.57	0.58	1.11	1.02	1.17	0.53	0.00	0.00
Offsite Fugitive - Delivery Truck	0.00	0.25	0.25	0.25	1.01	1.51	1.51	1.51	2.01	2.52	2.01	1.51	0.50	0.25	0.25	0.25	0.25	0.25	0.25	0.00	0.00	0.00
Offsite Fugitive - Worker Travel	1.49	1.84	3.04	4.37	5.97	6.66	7.47	9.08	11.32	13.73	15.91	16.77	17.52	15.39	14.70	13.56	11.95	11.03	6.95	3.16	1.44	0.57

Construction of the Proposed SEP Project Site - Winter (Peak) Daily Emissions

Project Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
	PM2.5 (lbs/day)																					
Onsite Off-Road Equipment	0.22	0.29	0.22	0.39	0.43	0.38	0.23	0.28	0.27	0.27	0.27	0.28	0.30	0.30	0.23	0.22	0.22	0.15	0.13	0.09	0.10	0.09
Onsite Vehicle	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Off-Road + Onsite Vehicle	0.22	0.29	0.23	0.40	0.44	0.40	0.25	0.28	0.28	0.28	0.28	0.28	0.30	0.31	0.24	0.23	0.23	0.16	0.13	0.09	0.10	0.09
Offsite Haul Truck	0.19	0.19	0.38	0.12	0.77	1.06	1.92	0.63	0.66	0.34	0.18	0.16	0.17	0.17	0.17	0.17	0.33	0.30	0.34	0.15	0.00	0.00
Offsite Delivery Truck	0.00	0.08	0.08	0.08	0.30	0.46	0.46	0.40	0.54	0.67	0.54	0.40	0.13	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00
Offsite Worker Travel	0.01	0.01	0.02	0.03	0.04	0.04	0.04	0.05	0.07	0.08	0.09	0.10	0.10	0.09	0.09	0.08	0.07	0.06	0.04	0.02	0.01	0.00
Onsite Fugitive (Off-Road)	0.08	0.08	0.08	0.11	0.08	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Fugitive (Vehicle)	0.13	0.17	0.28	0.38	0.57	0.67	0.83	0.81	1.00	1.16	1.29	1.33	1.36	1.19	1.14	1.05	0.95	0.88	0.58	0.26	0.11	0.04
Onsite Fugitive - Off-Road + Onsite Veh	0.22	0.25	0.36	0.49	0.65	0.75	0.86	0.81	1.00	1.16	1.29	1.33	1.36	1.19	1.14	1.05	0.95	0.88	0.58	0.26	0.11	0.04
Offsite Fugitive - Haul Truck	0.16	0.16	0.32	0.10	0.64	0.89	1.60	0.59	0.62	0.32	0.17	0.15	0.16	0.16	0.16	0.16	0.31	0.28	0.32	0.15	0.00	0.00
Offsite Fugitive - Delivery Truck	0.00	0.07	0.07	0.07	0.29	0.43	0.43	0.43	0.58	0.72	0.58	0.43	0.14	0.07	0.07	0.07	0.07	0.07	0.07	0.00	0.00	0.00
Offsite Fugitive - Worker Travel	0.40	0.49	0.81	1.16	1.59	1.78	1.99	2.42	3.02	3.66	4.24	4.47	4.67	4.11	3.92	3.62	3.19	2.94	1.85	0.84	0.38	0.15
	CO2 (lbs/day)																					
Onsite Off-Road Equipment	10,449	14,805	10,827	21,951	22,062	21,327	15,549	17,885	17,789	17,789	17,556	18,117	19,376	19,831	15,252	14,691	14,691	9,789	8,054	5,723	6,314	5,498
Onsite Vehicle	28.39	37.08	63.27	46.22	139.64	185.40	275.19	161.39	191.21	182.78	166.09	156.87	137.10	118.12	113.69	107.01	114.37	105.95	85.88	35.23	8.35	3.34
Onsite Off-Road + Onsite Vehicle	10477	14842	10,890	21,997	22,201	21,512	15,824	18,047	17,980	17,971	17,722	18,274	19,513	19,949	15,365	14,798	14,805	9,895	8,140	5,758	6,322	5,501
Offsite Haul Truck	2477	2495	4921	1613	9981	13719	24771	8986	9473	4835	2574	2328	2434	2452	2417	2452	4680	4306	4903	2199	0	0
Offsite Delivery Truck	0	832	832	832	3328	4992	4992	4909	6546	8182	6546	4909	1636	818	818	818	818	818	818	0	0	0
Offsite Worker Travel	1,443	1,776	2,942	4,219	5,773	6,439	7,217	8,422	10,501	12,739	14,765	15,564	16,257	14,285	13,646	12,579	11,087	10,234	6,450	2,820	1,282	513
	CH4 (lbs/day)																					
Onsite Off-Road Equipment	3.11	4.42	3.21	5.80	5.84	5.60	3.84	4.60	4.57	4.57	4.51	4.68	5.06	4.89	3.80	3.63	3.63	2.93	2.42	1.73	1.92	1.71
Onsite Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Off-Road + Onsite Vehicle	3.11	4.42	3.22	5.80	5.84	5.61	3.84	4.60	4.58	4.58	4.51	4.68	5.07	4.90	3.81	3.63	3.63	2.94	2.42	1.74	1.92	1.71
Offsite Haul Truck	1.25E-02	1.25E-02	2.47E-02	8.90E-03	5.02E-02	6.90E-02	1.25E-01	4.30E-02	4.54E-02	2.32E-02	1.23E-02	1.12E-02	1.17E-02	1.17E-02	1.16E-02	1.17E-02	2.24E-02	2.06E-02	2.35E-02	1.05E-02	0.00E+00	0.00E+00
Offsite Delivery Truck	0.00E+00	4.14E-03	4.14E-03	4.14E-03	1.66E-02	2.48E-02	2.48E-02	2.27E-02	3.03E-02	3.79E-02	3.03E-02	2.27E-02	7.58E-03	3.79E-03	3.79E-03	3.79E-03	3.79E-03	3.79E-03	3.79E-03	0.00E+00	0.00E+00	0.00E+00
Offsite Worker Travel	0.09	0.11	0.18	0.26	0.36	0.40	0.44	0.49	0.62	0.75	0.87	0.91	0.96	0.84	0.80	0.74	0.65	0.60	0.38	0.16	0.07	0.03
	N2O (lbs/day)																					
Onsite Off-Road Equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Onsite Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Off-Road + Onsite Vehicle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Offsite Haul Truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Offsite Delivery Truck	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Offsite Worker Travel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	CO2e (lbs/day)																					
Onsite Off-Road Equipment	10,526	14,915	10,907	22,096	22,208	21,467	15,645	18,000	17,903	17,903	17,669	18,234	19,502	19,953	15,347	14,782	14,782	9,862	8,115	5,766	6,362	5,541
Onsite Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Off-Road + Onsite Vehicle	10,526	14,915	10,907	22,096	22,208	21,467	15,645	18,000	17,903	17,903	17,669	18,234	19,502	19,953	15,347	14,782	14,782	9,862	8,115	5,766	6,362	5,541
Offsite Haul Truck	2,477	2,496	4,922	1,613	9,982	13,721	24,774	8,987	9,474	4,835	2,574	2,328	2,434	2,452	2,418	2,452	4,681	4,306	4,904	2,200	0	0
Offsite Delivery Truck	0	832	832	832	3,328	4,992	4,992	4,910	6,546	8,183	6,546	4,910	1,637	818	818	818	818	818	818	0	0	0
Offsite Worker Travel	1,446	1,779	2,947	4,225	5,782	6,449	7,228	8,434	10,516	12,758	14,787	15,587	16,281	14,306	13,666	12,598	11,103	10,249	6,459	2,824	1,284	513

Construction of the Proposed SEP Transmission Line - Winter (Peak) Daily Emissions

Project Month	7	8	9	10	11	12	13
	ROG (lbs/day)						
T-Line Site Off-Road Equipment	0.00	0.87	0.66	4.21	8.89	5.16	0.74
T-Line Site Vehicle	0.00	0.00	0.01	0.01	0.01	0.00	0.00
T-Line Site Off-Road + T-Line Site Vehicle	0.00	0.87	0.66	4.22	8.90	5.16	0.74
Offsite Haul Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	0.00	0.00	0.41	0.36	0.39	0.00	0.00
Offsite Worker Travel	0.01	0.24	0.35	0.35	0.35	0.17	0.13
	NOx (lbs/day)						
T-Line Site Off-Road Equipment	0.00	13.98	11.36	71.09	150.99	87.58	11.98
T-Line Site Vehicle	0.00	0.00	0.06	0.05	0.06	0.00	0.00
T-Line Site Off-Road + T-Line Site Vehicle	0.00	13.98	11.42	71.14	151.04	87.58	11.98
Offsite Haul Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	0.00	0.00	7.16	6.20	6.68	0.00	0.00
Offsite Worker Travel	0.04	0.72	1.05	1.05	1.05	0.51	0.40
	CO (lbs/day)						
T-Line Site Off-Road Equipment	0.00	28.17	22.30	139.95	298.08	173.60	24.14
T-Line Site Vehicle	0.00	0.04	0.10	0.09	0.10	0.03	0.02
T-Line Site Off-Road + T-Line Site Vehicle	0.00	28.21	22.40	140.04	298.17	173.63	24.16
Offsite Haul Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	0.00	0.00	5.12	4.43	4.78	0.00	0.00
Offsite Worker Travel	0.35	6.19	8.97	8.97	8.97	4.33	3.40
	SO2 (lbs/day)						
T-Line Site Off-Road Equipment	0.00	0.05	0.04	0.25	0.54	0.32	0.05
T-Line Site Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T-Line Site Off-Road + T-Line Site Vehicle	0.00	0.05	0.04	0.25	0.54	0.32	0.05
Offsite Haul Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	0.00E+00	0.00E+00	2.48E-02	2.15E-02	2.31E-02	0.00E+00	0.00E+00
Offsite Worker Travel	6.70E-04	1.35E-02	1.95E-02	1.95E-02	1.95E-02	9.43E-03	7.41E-03
	PM10 (lbs/day)						
T-Line Site Off-Road Equipment	0.00	0.09	0.07	0.42	0.89	0.52	0.07
T-Line Site Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T-Line Site Off-Road + T-Line Site Vehicle	0.00	0.09	0.07	0.42	0.89	0.52	0.07
Offsite Haul Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	0.00	0.00	0.22	0.19	0.20	0.00	0.00
Offsite Worker Travel	3.80E-04	7.23E-03	1.05E-02	1.05E-02	1.05E-02	5.06E-03	3.98E-03
T-Line Site Fugitive (Off-Road)	0.00	0.26	0.00	0.00	2.94	2.94	0.26
T-Line Site Fugitive (T-Line Site Vehicle)	0.01	0.14	0.34	0.32	0.34	0.10	0.08
T-Line Site Fugitive - Off-Road + T-Line Site Veh	0.01	0.40	0.34	0.32	3.27	3.04	0.34
Offsite Fugitive - Haul Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Fugitive - Delivery Truck	0.00	0.00	0.75	0.65	0.70	0.00	0.00
Offsite Fugitive - Worker Travel	0.06	1.15	1.67	1.67	1.67	0.80	0.63
	PM2.5 (lbs/day)						
T-Line Site Off-Road Equipment	0.00	0.09	0.07	0.42	0.89	0.52	0.07
T-Line Site Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T-Line Site Off-Road + T-Line Site Vehicle	0.00	0.09	0.07	0.42	0.89	0.52	0.07
Offsite Haul Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	0.00E+00	0.00E+00	2.02E-01	1.75E-01	1.88E-01	0.00E+00	0.00E+00
Offsite Worker Travel	3.50E-04	6.65E-03	9.64E-03	9.64E-03	9.64E-03	4.65E-03	3.66E-03
T-Line Site Fugitive (Off-Road)	0.00	0.03	0.00	0.00	1.61	1.61	0.03
T-Line Site Fugitive (T-Line Site Vehicle)	0.00	0.01	0.03	0.03	0.03	0.01	0.01
T-Line Site Fugitive - Off-Road + T-Line Site Veh	0.00	0.04	0.03	0.03	1.65	1.62	0.04
Offsite Fugitive - Haul Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Fugitive - Delivery Truck	0.00	0.00	0.22	0.19	0.20	0.00	0.00
Offsite Fugitive - Worker Travel	0.02	0.31	0.44	0.44	0.44	0.21	0.17

Construction of the Proposed SEP Transmission Line - Winter (Peak) Daily Emissions

Project Month	7	8	9	10	11	12	13
	CO2 (lbs/day)						
T-Line Site Off-Road Equipment	0	5,401	4,056	26,035	55,458	32,373	4,632
T-Line Site Vehicle	0.36	6.94	29.00	26.49	27.74	4.91	3.86
T-Line Site Off-Road + T-Line Site Vehicle	0	5408	4085	26,062	55,486	32,378	4,636
Offsite Haul Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	0	0	2455	2127	2291	0	0
Offsite Worker Travel	56	1,066	1,546	1,546	1,546	746	586
	CH4 (lbs/day)						
T-Line Site Off-Road Equipment	0.00	1.65	1.24	7.98	16.99	9.92	1.42
T-Line Site Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T-Line Site Off-Road + T-Line Site Vehicle	0.00	1.66	1.24	7.98	16.99	9.92	1.42
Offsite Haul Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite Delivery Truck	0.00E+00	0.00E+00	1.14E-02	9.85E-03	1.06E-02	0.00E+00	0.00E+00
Offsite Worker Travel	0.00	0.06	0.09	0.09	0.09	0.04	0.03
	N2O (lbs/day)						
T-Line Site Off-Road Equipment	0	0	0	0	0	0	0
T-Line Site Vehicle	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T-Line Site Off-Road + T-Line Site Vehicle	0	0	0	0	0	0	0
Offsite Haul Truck	0	0	0	0	0	0	0
Offsite Delivery Truck	0	0	0	0	0	0	0
Offsite Worker Travel	0	0	0	0	0	0	0
	CO2e (lbs/day)						
T-Line Site Off-Road Equipment	0	5,442	4,087	26,235	55,883	32,621	4,668
T-Line Site Vehicle	0.36	6.95	29.02	26.51	27.76	4.92	3.87
T-Line Site Off-Road + T-Line Site Vehicle	0	5,449	4,116	26,261	55,911	32,626	4,672
Offsite Haul Truck	0	0	0	0	0	0	0
Offsite Delivery Truck	0	0	2,455	2,128	2,291	0	0
Offsite Worker Travel	56	1,068	1,548	1,548	1,548	747	587

Fugitive Dust Calculations

Worker, Delivery (vendor) Trucks and Haul Trucks Onsite Travels

Onsite travel for worker, truck delivery, and haul trucks are assumed to be on graveled surfaces.

- Onsite delivery and haul truck travel distances are estimated from the site security point to the laydown area, 0.46 mile (one-way)
- Onsite work travel distance is estimated from the site security point to the parking area 0.27 mile (one-way)

Total Controlled Fugitive Emissions for Worker, Delivery Trucks and Haul Truck travel for Project Construction

	2016							2017												2018		
	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Project Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Number of Workdays	22	21	23	22	21	22	22	22	20	23	20	23	22	21	23	21	22	22	21	23	20	22
Onsite Fugitive PM10 (ton/month)	0.01	0.02	0.03	0.04	0.06	0.07	0.09	0.08	0.09	0.13	0.12	0.15	0.15	0.12	0.13	0.11	0.10	0.10	0.06	0.03	0.01	0.00
Onsite Fugitive PM2.5 (ton/month)	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00
Onsite Fugitive PM10, Rolling 12-month total (tons/year)												0.89	1.03	1.13	1.23	1.30	1.35	1.38	1.35	1.29	1.21	1.09
Onsite Fugitive PM2.5, Rolling 12-month total (tons/year)												0.09	0.11	0.12	0.13	0.13	0.14	0.14	0.14	0.13	0.12	0.11
Onsite Fugitive PM10 (lb/day)	1.35	1.69	2.81	3.79	5.71	6.67	8.29	8.09	10.01	11.58	12.91	13.33	13.61	11.92	11.40	10.54	9.52	8.78	5.77	2.59	1.08	0.43
Onsite Fugitive PM2.5 (lb/day)	0.13	0.17	0.28	0.38	0.57	0.67	0.83	0.81	1.00	1.16	1.29	1.33	1.36	1.19	1.14	1.05	0.95	0.88	0.58	0.26	0.11	0.04

Fugitive Dust Calculations

Vehicle Weights Estimations

Estimated average vehicle weights for

Workers	2.4	ton	(CalEEMod default value; CARB Area Source Manual, 9/97)
Delivery (vendor) trucks	27.5	ton	(Average for loaded and unloaded heavy duty diesel trucks)
Haul trucks	27.5	ton	(Average for loaded and unloaded heavy duty diesel trucks)

Unpaved Road Travel Emissions Factors - Source: AP-42, Section 13.2.2, 11/06.

E = (k)[(s/12)^0.9(W/3)^0.45]*

k = particle size constant =	1.5	for PM10
k = particle size constant =	0.15	for PM2.5
s = silt fraction =	4.3	(AP-42, Table 13.2.2-1, 11/06, plant road)

Emission factors	Workers	Delivery Trucks	Haul Trucks
PM10 (lb/VMT)	0.54	1.61	1.61
PM2.5 (lb/VMT)	0.05	0.16	0.16

Unpaved Road Travel Emissions Control - Source: Control of Open Fugitive Dust Sources, Scraping, and Grading U.S EPA, 9/88

C = 100 - (0.8)(p)(d)(t)/(i)

p = potential average hourly daytime evaporation rate =	0.845	mm/hr	(EPA document, Figure 3-2, summer)
evaporation rate =	0.637	mm/hr	(EPA document, Figure 3-2, annual)
t = time between applications of dust suppressants =	2	hr/application	(estimated)
i = application intensity =	1.4	L/m2	(typical level in EPA document, page 3-23)

d = average hourly daytime traffic rate	Construction	T-Line
Workers Travel (vehicle/hr) =	15.0	2.5
Delivery Trucks (vehicle/hr) =	1.8	1.0
Haul Trucks (vehicle/hr) =	2.5	0.0

Notes

Construction hourly traffic estimated from average daily worker 150 trips/day, daily delivery truck 18 trips/day, haul truck 25 trips/day and 10 hr/day work day, Table 5.12-7

T-Line Construction hourly traffic estimated from average daily worker 50 trips/day, daily delivery truck 20 trips/day, received 6/9/2015

	Construction		T-Line	
Average Control Efficiency (C)	Summer	Annual	Summer	Annual
Worker Travel	85%	89%	98%	98%
Delivery Trucks	98%	99%	99%	99%
Haul Trucks	98%	98%	100%	100%

For conservative estimates, assumed "summer" control efficiency for all construction months

Fugitive Dust Calculations

Fugitive Dust Calculations for Project Site Construction

	2016							2017												2018		
	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Project Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Workers Travel																						
Workers Trips (one way trips/day)	52	64	106	152	208	232	260	316	394	478	554	584	610	536	512	472	416	384	242	110	50	20
Workers Onsite VMT (one way)	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Control Efficiency (%)	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%
Controlled Fugitive Emissions																						
Onsite Fugitive - Worker PM10 (ton/month)	0.01	0.01	0.03	0.04	0.05	0.06	0.06	0.08	0.09	0.12	0.12	0.15	0.15	0.12	0.13	0.11	0.10	0.09	0.06	0.03	0.01	0.00
Onsite Fugitive - Worker PM2.5 (ton/month)	0.001	0.001	0.003	0.004	0.005	0.006	0.006	0.008	0.009	0.012	0.012	0.015	0.015	0.012	0.013	0.011	0.010	0.009	0.006	0.003	0.001	0.000
Onsite Fugitive - Worker PM10 (lb/day)	1.13	1.39	2.30	3.30	4.51	5.03	5.64	6.85	8.55	10.37	12.02	12.67	13.23	11.63	11.10	10.24	9.02	8.33	5.25	2.39	1.08	0.43
Onsite Fugitive - Worker PM2.5 (lb/day)	0.11	0.14	0.23	0.33	0.45	0.50	0.56	0.69	0.85	1.04	1.20	1.27	1.32	1.16	1.11	1.02	0.90	0.83	0.52	0.24	0.11	0.04
Delivery Trucks																						
Monthly Delivery Trucks (one way)	0	125	135	125	500	720	780	720	920	1350	1000	780	260	125	135	125	125	115	125	0	0	0
Delivery Truck Trips Length (miles, one way)	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Control Efficiency (%)	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%
Controlled Fugitive Emissions																						
Onsite Fugitive - Delivery Trucks PM10 (ton/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Fugitive - Delivery Trucks PM2.5 (ton/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Fugitive - Delivery Trucks PM10 (lb/day)	0.00	0.08	0.08	0.08	0.32	0.43	0.47	0.43	0.61	0.78	0.66	0.45	0.16	0.08	0.08	0.08	0.08	0.07	0.08	0.00	0.00	0.00
Onsite Fugitive - Delivery Trucks PM2.5 (lb/day)	0.00	0.01	0.01	0.01	0.03	0.04	0.05	0.04	0.06	0.08	0.07	0.05	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00
Haul Trucks																						
Monthly Hauling Trucks (one way)	260	250	540	500	1000	1440	2600	960	920	540	250	260	260	250	270	250	500	460	500	250	0	0
Haul Trucks Onsite VMT (one way)	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Control Efficiency (%)	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%	98%
Controlled Fugitive Emissions																						
Onsite Fugitive - Haul Trucks PM10 (ton/month)	0.00	0.00	0.00	0.00	0.01	0.01	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Fugitive - Haul Trucks PM2.5 (ton/month)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Onsite Fugitive - Haul Trucks PM10 (lb/day)	0.22	0.22	0.43	0.42	0.88	1.21	2.18	0.81	0.85	0.43	0.23	0.21	0.22	0.22	0.22	0.22	0.42	0.39	0.44	0.20	0.00	0.00
Onsite Fugitive - Haul Trucks PM2.5 (lb/day)	0.02	0.02	0.04	0.04	0.09	0.12	0.22	0.08	0.08	0.04	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.04	0.04	0.02	0.00	0.00

Fugitive Dust Calculations

Fugitive Dust Calculations for Transmission Line Construction

	2016							2017												2018		
	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Project Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Workers Travel																						
Workers Trips (one way trips/day)							2	40	58	58	58	28	22									
Workers Onsite VMT (mile, one way)							0.27	0.27	0.27	0.27	0.27	0.27	0.27									
Control Efficiency (%)							98%	98%	98%	98%	98%	98%	98%									
Controlled Fugitive Emissions																						
Onsite Fugitive - Worker PM10 (ton/month)							7.95E-05	1.59E-03	2.10E-03	2.41E-03	2.10E-03	1.16E-03	8.75E-04									
Onsite Fugitive - Worker PM2.5 (ton/month)							7.95E-06	1.59E-04	2.10E-04	2.41E-04	2.10E-04	1.16E-04	8.75E-05									
Onsite Fugitive - Worker PM10 (lb/day)							0.01	0.14	0.21	0.21	0.21	0.10	0.08									
Onsite Fugitive - Worker PM2.5 (lb/day)							0.00	0.01	0.02	0.02	0.02	0.01	0.01									
Delivery Trucks																						
Monthly Delivery Trucks (one way trips/month)							0	0	351	349	349	0	0									
Delivery Truck Onsite VMT (mile, one way)							0.46	0.46	0.46	0.46	0.46	0.46	0.46									
Control Efficiency (%)							99%	99%	99%	99%	99%	99%	99%									
Controlled Fugitive Emissions																						
Onsite Fugitive - Delivery Trucks PM10 (ton/month)							0	0	1.30E-03	1.29E-03	1.29E-03	0	0									
Onsite Fugitive - Delivery Trucks PM2.5 (ton/month)							0	0	1.30E-04	1.29E-04	1.29E-04	0	0									
Onsite Fugitive - Delivery Trucks PM10 (lb/day)							0	0	0.13	0.11	0.13	0	0									
Onsite Fugitive - Delivery Trucks PM2.5 (lb/day)							0	0	0.01	0.01	0.01	0	0									

Fugitive Dust Calculations for Soil Movement during Construction

Dust emission from the storage piles result from several distinct source activities, those that are related to moving fill material form SEP for storage includes

1 Loading of fill material onto storage piles (batch or continuous drop operations)
2 Wind erosion of pile surfaces and ground areas around piles.
3 Haul trucks traffic in storage area

Fill Material Storage Operations at SEP

For month 4: 10,000 cubic yards of material will be imported from offsite
For months 5 and 6: 50,000 cubic yards of material will be moved to adjacent property and stored as piles

SUMMARY (TOTAL FUGITIVE DUST EMISSIONS)	**2016**							**2017**												**2018**		
Soil Movement	**JUN**	**JLY**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JLY**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**JAN**	**FEB**	**MAR**
Project Month	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
Number of Workdays	22	21	23	22	21	22	22	22	20	23	20	23	22	21	23	21	22	22	21	23	20	22
Total Controlled Fugitive Emissions from Loading of the fill material, Wind Erosion of Pile Surface and Haul Truck Travel to the Storage Piles																						
PM10 (ton/month)	0	0	0	7.93E-05	0.06	0.07	0.07	0.07	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.07
PM2.5 (ton/month)	0	0	0	1.20E-05	0.01	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
PM10, Rolling 12-month total (tons/year)												0.55	0.62	0.69	0.76	0.83	0.85	0.84	0.84	0.84	0.84	0.84
PM2.5, Rolling 12-month total (tons/year)												0.20	0.22	0.25	0.28	0.31	0.33	0.34	0.34	0.34	0.34	0.34
PM10 (lb/day)	0	0	0	0.07	5.15	6.12	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61
PM2.5 (lb/day)	0	0	0	0.01	0.87	1.31	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84

Fugitive Dust Calculations for Soil Movement during Construction

1 Loading of fill material onto storage piles/receiving surface Emission Factors - Source: AP-42 Section 13.2.4.3, 11/06

E = k(0.0032)[(U/5)^1.3/(M/2)^1.4] (lb/ton)

k = particle size constant =	0.35	for PM10	
k = particle size constant =	0.053	for PM2.5	
U = mean wind speed (miles/hour)	5.82	(CalEEMod default for MDAQMD, 2.6 m/s)	
M = material moisture content (%)	11	(AP-42 Table 13.2.4-1 for misc. fill material, also CalEEMod default value)	

Emission factors material loading	
PM10 (lb/ton)	1.25E-04
PM2.5 (lb/ton)	1.90E-05

Import fill material	10,000	cubic yards	
Soil movement from SEP	50,000	cubic yards	
Material density	1.26	ton/cubic yards	(CalEEMod default value, Section 4.3 Appendix A)

Emission Controls Source: AP-42 Section 13.2.4.4, 11/06
For the storage operations, emissions controls typically include:
- Use of chemical wetting agents to control storage pile emissions
- Enclosure or covering of inactive piles to reduce wind erosion
- Continuous chemical treating of material loaded onto piles
- Treatment of roadways to reduce emissions from vehicle traffic in the storage pile area

Control efficiency 90% (AP-42 Section 13.2.4.4, 11/06)

1. Import of the fill material (10,000 cu yards) will occur in Month 4
Excess soil (50,000 cu yards) will be moved to the IEP during months 5 and 6

	2016							2017												2018		
	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Project Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Number of Workdays	22	21	23	22	21	22	22	22	20	23	20	23	22	21	23	21	22	22	21	23	20	22
Truck Loading																						
Fill material throughput [1], ton	0	0	0	12,642	31,604	31,604	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Control Efficiency (%)	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%
Controlled Fugitive Emissions																						
Truck Loading - PM10 (ton/month)	0	0	0	7.93E-05	1.98E-04	1.98E-04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Truck Loading - PM2.5 (ton/month)	0	0	0	1.20E-05	3.00E-05	3.00E-05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Truck Loading - PM10 (lb/day)	0	0	0	0.07	0.19	0.18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Truck Loading - PM2.5 (lb/day)	0	0	0	0.01	0.03	0.03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Fugitive Dust Calculations for Soil Movement during Construction

2 Wind erosion of pile surfaces Emission Factors - Source: CEQA Air Quality Handbook, SCAQMD, 04/93

E = (1.7 [G/1.5][[365-H]/235]*[I/15])*J*

G = Silt content in percent	4.3	(same as silt fraction for onsite vehicle dust generation)
H = Number of days with >= 0.01 inch of precipitation per year	18	(Average year for desert, Table A9-9-E-2, CEQA Air Quality Handbook, SCAQMD, 4/93)
I = Percentage of time that unobstructed wind speed exceeds 12 miles/hour (5.34 m/s) at mean pile height	36	(estimated from wind speed data from 2009 through 2013, at 10 feet height in Blythe CA, total time for wind speed class 4 to >=10 m/s)
J = Fraction of TSP which is (estimated to be 0.5)	0.5	(Table A9-9-E, CEQA Air Quality Handbook, SCAQMD, 4/93)

Emission factors for wind erosion of storage piles		
PM10 (lb/acre-day)	8.57	
PM10 (lb/sq ft-day)	1.97E-04	
PM2.5 (lb/sq ft-day)	7.87E-05	
Total volume of the exported material	50,000	cubic yards
Total volume of the exported material	1,350,000	cubic feet (conversion factor, 1 cubic yard = 27 cubic feet)
Assume the storage piles height	15	feet
Estimated pile surface (assumed rectangular piles)	90,000	square feet

For enclose, cover, water twice daily or apply non-toxic soil binders, according to manufacturer's specifications, to exposed stock piles with 5% or greater silt content

Control Efficiency (%): 74% (Table A11-9-A, CEQA Air Quality Handbook, SCAQMD, 04/93)

Loading of excess soil to storage piles primarily occurs during months 5 and 6, for conservative estimates, assumed the storage pile remains for the rest of the project period

Assumed the storage pile operation emission controls applied

	2016							2017												2018		
	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Project Month	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
Number of days per month	30	31	31	30	31	30	31	31	28	31	30	31	30	31	31	30	31	30	31	31	28	31
Average monthly storage pile surface (sq ft)	0	0	0	0	22,500	45,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000	90,000
Control Efficiency (%)	74%	74%	74%	74%	74%	74%	74%	74%	74%	74%	74%	74%	74%	74%	74%	74%	74%	74%	74%	74%	74%	74%
Fugitive Emission PM10 (ton/month)	0	0	0	0	0.0178	0.0345	0.0714	0.0714	0.0645	0.0714	0.0691	0.0714	0.0691	0.0714	0.0714	0.0691	0.0714	0.0691	0.0714	0.0714	0.0645	0.0714
Fugitive Emission PM2.5 (ton/month)	0	0	0	0	0.0071	0.0138	0.0286	0.0286	0.0258	0.0286	0.0276	0.0286	0.0276	0.0286	0.0286	0.0276	0.0286	0.0276	0.0286	0.0286	0.0258	0.0286
Fugitive Emission PM10 (lb/day)	0	0	0	0	1.15	2.30	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61	4.61
Fugitive Emission PM2.5 (lb/day)	0	0	0	0	0.46	0.92	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84

Fugitive Dust Calculations for Soil Movement during Construction

3 Haul trucks traffic in storage area

Fugitive dust emission associated with haul trucks travel between the SEP project site to the storage piles in the neighboring site will be calculated as follow:

Unpaved Road Travel Emissions Factors - Source: AP-42, Section 13.2.2, 11/06.

E = (k)[(s/12)^0.9(W/3)^0.45]*

k = particle size constant =	1.5	for PM10
k = particle size constant =	0.15	for PM2.5
s = silt fraction =	8.50	(AP-42, Table 13.2.2-1, 11/06, construction sites)

Estimated average vehicle weights for haul trucks

Haul truck	33.35	tons (avg. of loaded and unloaded weights, 980H loader, Caterpillar Performance Handbook, 2006)

Emission factors	Haul Trucks
PM10 (lb/VMT)	3.25
PM2.5 (lb/VMT)	0.33

Unpaved Road Travel Emissions Control - Source: Control of Open Fugitive Dust Sources, Scraping, and Grading U.S EPA, 9/88

C = 100 - (0.8)(p)(d)(t)/(i)

p = potential average hourly daytime		
evaporation rate =	0.845	mm/hr (EPA document, Figure 3-2, summer)
evaporation rate =	0.637	mm/hr (EPA document, Figure 3-2, annual)
d = average hourly daytime traffic rate		
Haul Truck =	4.8	vehicles/hr (estimated from monthly haul truck trip 1000 trips/month, 22 work days/month and 10 hrs/day)
t = time between watering applications =	2	hr/application (estimated)
i = application intensity =	1.4	L/m2 (typical level in EPA document, page 3-23)

	Summer	Annual
Average Control Efficiency (C)	95.3%	96.4%

Estimated travel distance from SEP to storage piles on unpaved surface

For conservative estimates, assumed all haul truck trips occurs in month 5 are haul trips to the storage piles and same number of haul truck trips occurs in month 6 (i.e. also 1000 trips, one-way); remaining trips in month 6 are assumed to be delivery trucks trips and fugitive dust emissions for these delivery truck trips are accounted for in onsite fugitive dust emission calculations.

For conservative estimates, assumed "summer" control efficiency for all construction months

	2016							2017												2018		
	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Project Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Number of Workdays	22	21	23	22	21	22	22	22	20	23	20	23	22	21	23	21	22	22	21	23	20	22
Haul Trucks																						
Monthly Hauling Trucks (one way)	0	0	0	0	1000	1000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Haul Trucks Onsite VMT (one way)	0	0	0	0	0.52	0.52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Control Efficiency (%)	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%	95.3%
Controlled Fugitive Emissions																						
Onsite Fugitive - Haul Trucks PM10 (ton/month)	0	0	0	0	0.04	0.04	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Onsite Fugitive - Haul Trucks PM2.5 (ton/month)	0	0	0	0	0.00	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Onsite Fugitive - Haul Trucks PM10 (lb/day)	0	0	0	0	3.81	3.64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Onsite Fugitive - Haul Trucks PM2.5 (lb/day)	0	0	0	0	0.38	0.36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total Fugitive Dust for Project Site Construction

	2016							2017												2018		
	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Project Month	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
Number of days per month	30	31	31	30	31	30	31	31	28	31	30	31	30	31	31	30	31	30	31	31	28	31
Fugitive PM10 (ton/month)	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
Fugitive PM2.5 (ton/month)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Fugitive PM10, Rolling 12-month total (tons/year)												0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Fugitive PM2.5, Rolling 12-month total (tons/year)												0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Fugitive Emission PM10 (lb/day)	0.83	0.81	0.81	0.83	0.81	0.83	0.81	0.81	0.89	0.81	0.83	0.81	0.83	0.81	0.81	0.83	0.81	0.83	0.81	0.81	0.89	0.81
Fugitive Emission PM2.5 (lb/day)	0.33	0.32	0.32	0.33	0.32	0.33	0.32	0.32	0.36	0.32	0.33	0.32	0.33	0.32	0.32	0.33	0.32	0.33	0.32	0.32	0.36	0.32

Level 2 Emission Factor

0.011	ton/acre-month	[1]
22	lb/acre-month	
5.05E-04	PM10 lb/sq ft-month	
2.02E-04	PM2.5 lb/sq ft-month	

1. Wind erosion of active construction area - Source: "Improvement of Specific Emission Factors (BACM Project No. 1), Final Report", prepared for South Coast AQMD by Midwest Research Institute, March 1996

Wind Erosion Calculation for the Project Site Construction Area

Project Site Construction Area	25	acre
Project Site Construction Duration	22	months
Monthly Disturbed Area	1.14	acre/month

Active project area is averaged over the 22 month period to estimate monthly disturbed area

	2016							2017												2018		
	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Project Month	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
Number of days per month	30	31	31	30	31	30	31	31	28	31	30	31	30	31	31	30	31	30	31	31	28	31
Average monthly disturbed area (sq ft)	49,500	49,500	49,500	49,500	49,500	49,500	49,500	49,500	49,500	49,500	49,500	49,500	49,500	49,500	49,500	49,500	49,500	49,500	49,500	49,500	49,500	49,500
Fugitive PM10 (ton/month)	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013
Fugitive PM2.5 (ton/month)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Fugitive PM10, Rolling 12-month total (tons/year)												0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Fugitive PM2.5, Rolling 12-month total (tons/year)												0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Fugitive Emission PM10 (lb/day)	0.83	0.81	0.81	0.83	0.81	0.83	0.81	0.81	0.89	0.81	0.83	0.81	0.83	0.81	0.81	0.83	0.81	0.83	0.81	0.81	0.89	0.81
Fugitive Emission PM2.5 (lb/day)	0.33	0.32	0.32	0.33	0.32	0.33	0.32	0.32	0.36	0.32	0.33	0.32	0.33	0.32	0.32	0.33	0.32	0.33	0.32	0.32	0.36	0.32

The Sonoran site includes 76 acres of property. Approximately 25 acres of construction laydown, material storage and parking will be required during the construction phase of the project, Section 5.1.4.4 of Draft AFC

Wind Erosion Calculation for the Transmission Line Construction Area

Project Area

Estimated Disturbed Area for T-Line Construction 331,250 sq ft From T-Line construction data received 6/9/2015

Project Duration 7 months

		2016	2017					
		DEC	JAN	FEB	MAR	APR	MAY	JUN
Project Month		**7**	**8**	**9**	**10**	**11**	**12**	**13**
Number of days per month		31	31	28	31	30	31	30
Average monthly disturbed area (sq ft)		47,321	47,321	47,321	47,321	47,321	47,321	47,321
Fugitive PM10 (ton/month)		0.012	0.012	0.012	0.012	0.012	0.012	0.012
Fugitive PM2.5 (ton/month)		0.005	0.005	0.005	0.005	0.005	0.005	0.005
Fugitive PM10, 7-month total (tons/year)								0.084
Fugitive PM2.5, 7-month total (tons/year)								0.033
Fugitive Emission PM10 (lb/day)		0.77	0.77	0.85	0.77	0.80	0.77	0.80
Fugitive Emission PM2.5 (lb/day)		0.31	0.31	0.34	0.31	0.32	0.31	0.32

Construction of the Proposed SEP - CalEEMod Input Data

Project Name	SEP Construction	
District	MDAQMD	
Wind Speed	2.6	m/s
Precipitation Frequency	30	days/year
Climate Zone	10	
Urbanization Level	Rural	
Expected Operational Year	2019	
Utility Company	Southern California Edison	
CO2 Intensity Factor	630.89	
CH4 Intensity Factor	0.029	
N2O Intensity Factor	0.006	

CalEEMod Phase Name	Phase Type	Start Date	End Date	# day/Week	Number of Days	Month	# of Days, Rolling 12-month
Grading 1	Grading	6/1/2016	6/30/2016	5	22	1	
Grading 2	Grading	7/1/2016	7/31/2016	5	21	2	
Grading 3	Grading	8/1/2016	8/31/2016	5	23	3	
Grading 4	Grading	9/1/2016	9/30/2016	5	22	4	
Grading 5	Grading	10/1/2016	10/31/2016	5	21	5	
Grading 6	Grading	11/1/2016	11/30/2016	5	22	6	
Grading 7	Grading	12/1/2016	12/31/2016	5	22	7	
Grading 8	Grading	1/1/2017	1/31/2017	5	22	8	
Grading 9	Grading	2/1/2017	2/28/2017	5	20	9	
Grading 10	Grading	3/1/2017	3/31/2017	5	23	10	
Grading 11	Grading	4/1/2017	4/30/2017	5	20	11	
Grading 12	Grading	5/1/2017	5/31/2017	5	23	12	261
Grading 13	Grading	6/1/2017	6/30/2017	5	22	13	261
Grading 14	Grading	7/1/2017	7/31/2017	5	21	14	261
Grading 15	Grading	8/1/2017	8/31/2017	5	23	15	261
Grading 16	Grading	9/1/2017	9/30/2017	5	21	16	260
Grading 17	Grading	10/1/2017	10/31/2017	5	22	17	261
Grading 18	Grading	11/1/2017	11/30/2017	5	22	18	261
Grading 19	Grading	12/1/2017	12/31/2017	5	21	19	260
Grading 20	Grading	1/1/2018	1/31/2018	5	23	20	261
Grading 21	Grading	2/1/2018	2/28/2018	5	20	21	261
Grading 22	Grading	3/1/2018	3/31/2018	5	22	21	260

1. 22 months of construction for the Sonoran Energy Project

Construction of the Proposed SEP Project Site - CalEEMod Equipment Schedule Input

						2016							2017												2018		
	Fuel Type	CalEEMod Equip Type	HP	Quantity	Days on Site	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Project Month						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Construction Equipment						Number of Equipment																					
101150 Core Drill, Elect, 11HP, 8" to 18"Dia. Cores	Electric	Bore/Drill Rigs	11	1	21	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102120 Pump, Concr, Trkmtd, 4"Line, 80' Boom	Diesel	Pump	175	2	179	0	0	0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0
103000 Vibrator, Concr, Gas engine, 8 HP	Gas	Cement and Mortar Mixers	8	4	179	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0
200150 Backhoe Diesel Hyd Crawler Mount 1CY	Diesel	Tractors/Loaders/Backhoes	45	1	127	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
200450 Backhoe Loader Wheel Type, 45-60HP,3/4CY	Diesel	Tractors/Loaders/Backhoes	60	1	30	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
201910 Grader,Self-propelled,	Diesel	Graders	145	1	23	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
203050 Roller, Vibratory, smooth drum, Tandem, Gas, 35 hp	Gas	Rollers	35	1	5	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
203200 Roller Pneumatic Tire, Diesel, 80 hp	Diesel	Rollers	80	1	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
203350 Roller, Vibratory, smooth drum, 75 hp	Diesel	Rollers	75	1	31	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
203400 Roller, Vibratory, smooth drum, 125 hp	Diesel	Rollers	125	1	10	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
203550 Scraper, Self-Propelled, 4 X 4 Drive, Dual Engine 21 CY	Diesel	Scrapers	179	1	119	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
204260 Tractor, Crawler, w/Bulldozer, Torqueconvertor, Diesel, 200 HP	Diesel	Crawler Tractors	200	1	122	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
204310 Tractor, Crawler, convertor, Diesel, 300 HP	Diesel	Crawler Tractors	300	1	40	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
204610 Front end Loader, 4-Wheel drive, Articulated frame, 1to 1.25 CY, 70 HP	Diesel	Rubber Tired Loaders	70	1	110	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
204760 Front end Loader, 4-Wheel drive, Articulated frame, 5.25 to 5.75 CY, 270 HP	Diesel	Rubber Tired Loaders	270	1	15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
205400 Truck, Dump Trailer Only, Rear dump, 20 CY	Diesel	Off-Highway Trucks	365	1	7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
205500 Truck, Flatbed, 1 Axle, 3 Ton Rating	Diesel	Off-Highway Trucks	190	1	121	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
205598 Truck, Off Hwy, Rear Dump, 34 ton cap. Note: Prorated from 35 Ton.	Diesel	Off-Highway Trucks	365	1	30	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
400300 Air Comprsr, Towed type,	Diesel	Air Compressors	50	1	105	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0
402700 Generator, Electric, Diesel Engine, 100KW	Diesel	Generator Sets	134	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
406265 Saw, Concrete, Self- propelled, Gas, 30 HP	Gas	Concrete/Industrial Saws	30	1	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
406800 Trailer, Platform, Flush Deck, 3 Axle, 75 Ton	Diesel	Off-Highway Trucks	175	1	61	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
406900 Water Tank, Engine Driven Disch, 5,000 Gals.cap.	Diesel	Other Construction Equipment	175	1	10	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 Axle CT13 Hauling Truck 365HP	Diesel	Off-Highway Trucks	365	3	60	0	0	0	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Med Wheel Loader 962M 250HP	Diesel	Off-Highway Trucks	250	2	60	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
407500 Truck Tractor 6X4 40 Ton Capcty, 380HP	Diesel	Off-Highway Tractors	380	1	7	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
407600 Truck Tractor 6X4 45 Ton Capcty, 450HP	Diesel	Off-Highway Tractors	450	1	71	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
408030 Backhoe Diesel Hyd Crawler Mount 2CY	Diesel	Tractors/Loaders/Backhoes	45	1	17	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
408135 Compactor, Vibrating Plate, Gas, 21" Plate, 5,000 lb Blow	Gas	Plate Compactors	6.5	1	153	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
408462 Tractor, Loader, Wheeled, 4X4, 1.5 - 1.75 CY, 80 HP	Diesel	Rubber Tired Loaders	80	1	21	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
420720 Truck, Pickup, 3/4 Ton, 4 Wheel Drive	Diesel	Off-Highway Trucks	175	1	21	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
504250 Paver, asphalt, wheel or crawler, 130 HP, diesel	Diesel	Pavers	130	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
601200 Crane, Crawler, lattice boom, Cable, 100 TON Cap, 60' Boom	Diesel	Cranes	285	1	31	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
601400 Crane, Crawler, Lattice Boom, 200 Ton	Diesel	Cranes	260	2	323	0	0	0	0	0	0	0	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0
601500 Crane, Crawler, Lattice Boom, 350 Ton	Diesel	Cranes	450	1	197	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0
602100 Crane, Truckmount, Cable, 8x4, 90 TN Cap, 15' Radius	Diesel	Cranes	476	1	141	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
602500 Crane, Truck Mount, Hyd, 25 Ton Cap.	Diesel	Cranes	286	1	32	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
602800 Crane, Self-Prpld, 4 X 4, w/Telescoping Boom, 5 Ton cap.	Diesel	Cranes	175	1	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
603050 Crane, Self-Prpld, 4 X 4, w/Telescoping Boom, 20 Ton cap.	Diesel	Cranes	175	4	178	0	0	0	0	0	0	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	0
603100 Crane, Self-Prpld, 4 X 4, w/Telescoping Boom, 25 Ton cap.	Diesel	Cranes	175	1	114	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
603150 Crane, Self-Prpld, 4 X 4, w/Telescoping Boom, 40 Ton cap.	Diesel	Cranes	250	7	399	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Total						**16**	**21**	**19**	**29**	**31**	**30**	**26**	**28**	**27**	**27**	**25**	**25**	**26**	**26**	**22**	**21**	**21**	**17**	**15**	**11**	**12**	**7**

1. Based on the construction equipment schedule received (SEP_PTA_Data_Needs Rev C), 2/20/2015
CalEEMod default load factors were used for all equipment

Construction of the Proposed SEP Transmission Line - CalEEMod Equipment Schedule Input

Equipment	CalEEMod Equip Type	HP	2016	2017					
			DEC	JAN	FEB	MAR	APR	MAY	JUN
Month			**7**	**8**	**9**	**10**	**11**	**12**	**13**
Construction - Transmission Line									
Pickup Truck, 4 Wheel Drive, 240 HP	Off-Highway Trucks	240		1	2	4	6	4	2
Crane, Hydraulic, Rough Terrain, 35 Ton	Cranes	175			1	1	1		
Forklift, 10 Ton - 120 HP	Forklifts	120			1	1	1		
Forklift, 5 Ton - 94 HP	Forklifts	94			1	1	1		
Truck, Flatbed, 1 Ton - 250 HP	Off-Highway Trucks	250		1	1	1	6	5	
Truck, Flatbed, 2 Ton - 300 HP	Off-Highway Trucks	300				4	7	2	
Truck, Semi, Tractor - 435 HP	Off-Highway Trucks	435		1					
Road Grader - 179 HP	Graders	179		1					1
Fuel truck - 175 HP	Off-Highway Trucks	175		1		1	2	1	
Digger, Transmission Type, Truck Mount - 215 HP	Bore/Drill Rigs	215				2	3	1	
Back Hoe, w/ Bucket - 93 HP	Tractors/Loaders/Backhoes	93				1	2	1	
Bobcat, w/Bucket - 73 HP	Other Material Handling Equipment	73				1	1		
Truck, Concrete, 10 Yd - 175 HP	Off-Highway Trucks	175				3	3		
Truck, Flatbed, w/ Boom, 5 Ton - 300 HP	Off-Highway Trucks	300				1	2	1	
Truck, Dump, 10 Ton - 365 HP	Off-Highway Trucks	365				1	1		
Truck, Mechanics, 2 Ton - 300 HP	Off-Highway Trucks	300				1	2	1	
Truck, Semi, Tractor, w/Boom - 435 HP	Off-Highway Trucks	435				2	2		
Loader, w/Bucket - 148 HP	Tractors/Loaders/Backhoes	148				1	1		
RT Crane, Hydraulic, 20T - 175 HP	Cranes	175				1	1		
Motor, Auxiliary Power - 25 HP	Other Construction Equipment	25				1	2	1	
RT Crane, Hydraulic, 35T - 175 HP	Cranes	175					1	3	
RT Crane, Hydraulic, 150T - 345 HP	Cranes	345					1	2	
Truck, Semi, Tractor - 435 HP	Off-Highway Trucks	435					3	3	1
Truck, Flatbed w/ Bucket, 5 Ton - 300 HP	Off-Highway Trucks	300					1	1	
Tension Machine, Conductor - 135 HP	Other General Industrial Equipment	135					1	1	
Tension Machine, OPGW - 135 HP	Other General Industrial Equipment	135					1	1	
Wire Puller, Single Drum - 310 HP	Other General Industrial Equipment	310					1	1	
Wire Puller, Triple Drum - 310 HP	Other General Industrial Equipment	310					1	1	
Wire Puller, Sockline - 310 HP	Other General Industrial Equipment	310					1	1	
Dozer, Track Type, Sagging (D8 type) - 148 HP	Rubber Tired Dozers	148					1	1	
TOTAL			**0**	**5**	**6**	**28**	**56**	**32**	**4**

1. Based on the equipment schedule for transmission construction, transmission line, received 6/9/2015

CalEEMod default load factors were used for all equipment

Numbers are roundup to the nearest integer for CalEEMod calculation

Construction of the Proposed SEP Project Site - CalEEMod Vehicle Trips Input

	2016							2017												2018			
	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	
Project Month	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	
Number of workdays	22	21	23	22	21	22	22	22	20	23	20	23	22	21	23	21	22	22	21	23	20	22	
Construction Labor	**Number of Workers**																						
Craft																							**Total**
Worker/Insulator												15	30	40	40	40	40	40	20	15	10		**290**
Boilmakers								20	40	60	80	80	100	80	80	70	65	55	23				**753**
Carpenters	5	10	10	15	20	20	20	15	15	15	15	12											**172**
Cement Finishers							1	2	3	4	4	3	2	1									**20**
Common Laborers	5	5	5	5	5	5	5	5	10	10	10	10	10	10	10	10	8	5	5	5	5	5	**153**
Electricians	5	5	10	10	20	20	30	30	40	40	40	40	40	40	40	30	30	30	20	10	5		**535**
Equipment Operators, Heavy	4	4	6	15	15	10	6	6	5														**71**
Equipment Operators, Light			2	2	1	1	1	1	1	1	1	1											**12**
Equipment Operators, Medium			8	10	10	22	20	20	15	15	8	8	5	5									**146**
Equipment Operators, Oilers		1	1	1	1	1	2	2	2	2	2	2	1	1	1	1	1	1	1				**24**
Mechanical Equipment																							**0**
Millwrights	2	2	4	4	8	8	10	10	8	8	4	4	1	1									**74**
Plumbers Helper						1																	**1**
Plumbers						1	1																**2**
Painters,																				4	4	4	**12**
Rodmen (Reinforcing)	4	4	4	8	8	10	20	20	10	4	4												**96**
Skilled Trade										1	1												**2**
Structural Steel Workers					10	10	10	20	20	30	40	40	40	15	10	10	5	2					**262**
Structural Steel Welders						1	1	2	3	3	3	2	1										**16**
Steamfitters/Pipefitters									20	40	60	70	70	70	70	70	55	55	50	20			**650**
Truck Drivers, Heavy			1	4	4	4	1	1	1														
Truck Drivers, Light										1													
Number of Craft Labor (Subtotal)	**25**	**31**	**51**	**74**	**102**	**114**	**128**	**154**	**193**	**234**	**272**	**287**	**300**	**263**	**251**	**231**	**204**	**188**	**119**	**54**	**24**	**9**	**3,308**
Supervision	1	1	2	2	2	2	2	4	4	5	5	5	5	5	5	5	4	4	2	1	1	1	**68**
Total Manpower	**26**	**32**	**53**	**76**	**104**	**116**	**130**	**158**	**197**	**239**	**277**	**292**	**305**	**268**	**256**	**236**	**208**	**192**	**121**	**55**	**25**	**10**	**3,376**
Worker Trips (one way trips/day)	**52**	**64**	**106**	**152**	**208**	**232**	**260**	**316**	**394**	**478**	**554**	**584**	**610**	**536**	**512**	**472**	**416**	**384**	**242**	**110**	**50**	**20**	
Worker Trips Length (miles, one way)	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	
Worker Trips, Percent Paved (%)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	

Construction of the Proposed SEP Project Site - CalEEMod Vehicle Trips Input

	2016							2017												2018			
	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JLY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	
Project Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
Number of workdays	22	21	23	22	21	22	22	22	20	23	20	23	22	21	23	21	22	22	21	23	20	22	
Construction Labor	**Number of Workers**																						
Delivery Trucks																							
Daily Delivery Trucks (one way)	0	5	5	5	20	30	30	30	40	50	40	30	10	5	5	5	5	5	5	0	0	0	
Monthly Delivery Trucks (one way)	0	125	135	125	500	720	780	720	920	1350	1000	780	260	125	135	125	125	115	125	0	0	0	
Delivery Truck Trips Length (miles, one way)	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
Delivery Truck Trips, Percent Paved (%)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Haul Trucks (Total per month)																							
Monthly Hauling Trucks (one way)	260	250	540	500	1000	1440	2600	960	920	540	250	260	260	250	270	250	500	460	500	250	0	0	
Haul Truck Trip Length (miles, one way)	60	60	60	20	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
Haul Truck Trips, Percent Paved (%)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	

1. Based on the workers, delivery and haul trucks schedules received (SEP_PTA_Data_Needs Rev D), 3/6/2015
   Based on the information provided (email dated 3/16/2015), the maximum daily commute for the workers that are not from Blythe will be 60 miles
   —that is, 65% of workers would commute 60 miles and 35% would commute 7 miles
2. Delivery and haul truck travel distances are estimated from the Glamis, CA to Blythe, CA via CA-78 (60 miles)

Construction of the Proposed SEP Transmission Line - CalEEMod Vehicle Trips Input

	2016	2017					
	DEC	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**
Project Month	**7**	**8**	**9**	**10**	**11**	**12**	**13**
Construction Management / Inspection	1	2	1	1	1	1	1
Linemen		3	3	3	3	3	
Operators		15	7	7	7	10	10
Apprentice Linemen			9	9	9		
Groundmen			9	9	9		
Electricians							
Skilled trade/other							
Number of Craft Labor (Subtotal)	**1**	**20**	**29**	**29**	**29**	**14**	**11**
Worker Trips (one way trips/day)	**2**	**40**	**58**	**58**	**58**	**28**	**22**
Worker Trips Length (miles, one way)	41	41	41	41	41	41	41
Worker Trips, Percent Paved (%)	100%	100%	100%	100%	100%	100%	100%

Delivery Trucks							
Shipping days per month	26	24	23	27	25	26	26
Monthly Delivery Trucks (One way)			56	54	54		
Monthly Concrete Trucks (One way)			295	295	295		
Monthly Delivery Trucks (One way)	**0**	**0**	**351**	**349**	**349**	**0**	**0**
Daily Delivery Trucks (One way trips/day)	**0**	**0**	**15**	**13**	**14**	**0**	**0**
Delivery Truck Trips Length (miles)	60.0	60.0	60.0	60.0	60.0	60.0	60.0
Delivery Truck Trips, Percent Paved (%)	100%	100%	100%	100%	100%	100%	100%

Worker trips and truck trips length are assumed to be the same as during construction period.
Based on the information provided (email dated 3/16/2015), the maximum daily commute for the workers that are not from Blythe will be 60 miles —that is, 65% of workers would commute 60 miles and 35% would commute 7 miles
Delivery and haul truck travel distances are estimated from the Glamis, CA to Blythe, CA via CA-78 (60 miles)

Appendix 3.1D
Best Available Control Technology

APPENDIX 3.1D

Best Available Control Technology

The gas turbine proposed for the SEP is required to use best available control technology (BACT) in accordance with the requirements of Mojave Desert Air Quality Management District (MDAQMD, or District) rules and the federal Prevention of Significant Deterioration (PSD) regulations. BACT is defined in MDAQMD Rule 1301(K) as follows:

*"**Best Available Control Technology (BACT)**" For any Permit Unit at Facilities as indicated below:*

> *(1) For a new or Modified Major Facility as defined in District Rule 1301(DD) the most stringent of:*
>
> > *(a) The most stringent emission limit or control technique which has been achieved in practice, for such permit unit class or category of source; or*
> >
> > *(b) Any other emission limitation or control technique, and/or different fuel demonstrated in practice to be technologically feasible and cost-effective by the APCO or by CARB.*
>
> *(2) For a new or Modified non-major Facility:*
>
> > *(a) The most stringent emission limit or control technique which has been achieved in practice for such category or class of source. Economic and technical feasibility may be considered in establishing the class or category of source; or*
> >
> > *(b) Any other emission limitation or control technique found by the APCO to be technologically feasible and cost effective for such class or category of source.*
>
> *(3) Under no circumstances shall BACT be determined to be less stringent than the emission limitation or control technique contained in any State Implementation Plan as approved by USEPA, unless the applicant demonstrates to the satisfaction of the APCO that such limitations are not achievable.*
>
> *(4) In no event shall the application of BACT result in the emissions of any Regulated Air Pollutant which exceeds the emissions allowed by any applicable standard or other requirement under 42 U.S.C. §7411, Standards of Performance for New Stationary Sources (Federal Clean Air Act §111) or 42 U.S.C. §7412, Hazardous Air Pollutants (Federal Clean Air Act §112) or the regulations promulgated thereunder."*

Since SEP will be a modification to an existing major facility (as defined in District rules)[1], the provisions of subsections 1 and 3 are applicable.

As discussed in Section 3.1.6.3, the SEP gas turbine will trigger BACT requirements for NOx, SOx, VOC, and PM_{10}. BACT review is also required for the cooling tower and for NOx emissions from the emergency firepump engine. The emission rates and control technologies determined to be BACT for this project are discussed in detail in the following sections. For the CTG, separate determinations are provided for normal operation and startup/shutdown operation.

[1] The existing facility is a Major Facility as defined in District Rule 1301(DD); however, it is not a major stationary source for purposes of Federal PSD requirements.

3.1.1 Steps in a Top-Down BACT Analysis

Step 1 – Identify All Possible Control Technologies

The first step in a top-down analysis is to identify, for the emissions unit and pollutant in question, all available control options. Available control options are those air pollution control technologies or techniques, including alternate basic equipment or processes, with a practical potential for application to the emissions unit in question. The control alternatives should include not only existing controls for the source category in question, but also, through technology transfer, controls applied to similar source categories and gas streams.

BACT must be at least as stringent as what has been achieved in practice (AIP) for a category or class of source. Additionally, EPA guidelines require that a technology that is determined to be AIP for one category of source be considered for transfer to other source categories. There are two types of potentially transferable control technologies: (1) exhaust stream controls, and (2) process controls and modifications. For the first type, technology transfer must be considered between source categories that produce similar exhaust streams. For the second type, technology transfer must be considered between source categories with similar processes.

Candidate control options that do not meet basic project requirements (i.e., alternative basic designs that "redefine the source") are eliminated at this step.

Step 2 – Eliminate Technologically Infeasible Options

To be considered, the candidate control option must be technologically feasible for the application being reviewed.

Step 3 – Rank Remaining Control Options by Control Effectiveness

All feasible options are ranked in the order of decreasing control effectiveness for the pollutant under consideration. In some cases, a given control technology may be listed more than once, representing different levels of control (e.g., the use of SCR for control of NOx may be evaluated at 2 and 2.5 parts per million by volume, dry [ppmvd]). Any control option less stringent than what has been already achieved in practice for the category of source under review must also be eliminated at this step.

Step 4 – Evaluate Most Effective Control Technology Considering Environmental, Energy, and Cost Impacts

To be required as BACT, the candidate control option must be cost effective, considering energy, environmental, economic, and other costs. The most stringent control technology for control of one pollutant may have other undesirable environmental or economic impacts. The purpose of Step 4 is to either validate the suitability of the top control option or provide a clear justification as to why that option should not be selected as BACT.

Once all of the candidate control technologies have been ranked, and other impacts have been evaluated, the most stringent candidate control technology is deemed to be BACT, unless the other impacts are unacceptable.

Step 5 – Determine BACT/Present Conclusions

BACT is determined to be the most effective control technology subject to evaluation, and not rejected as infeasible or having unacceptable energy, environmental, or cost impacts.

3.1.2 BACT for the Gas Turbine: Normal Operations

3.1.2.1 NOx EMISSIONS

Step 1 – Identify All Possible Control Technologies

The emissions unit for which BACT is being considered is a combined-cycle gas turbine with a nominal output of 553 MW.

Potential control technologies were identified by searching the following sources for determinations pertaining to combustion gas turbines:

- MDAQMD BACT Guidance;
- SCAQMD BACT Guidelines;
- San Joaquin Valley Air Pollution Control District (SJVAPCD) BACT Clearinghouse;
- Bay Area Air Quality Management District (BAAQMD) BACT Guidelines;
- EPA Reasonably Available Control Technology (RACT)/BACT/ Lowest Achievable Emission Rate (LAER) Clearinghouse;
- Other district and state BACT Guidelines; and
- BACT/LAER requirements in New Source Review permits issued by a local air district[2] or other air pollution control agency.

Outlined below are the technologies for control of NOx that were identified.

- Low NOx burner design (e.g., dry low NOx (DLE) combustors)
- Water or steam injection
- A Selective Catalytic Reduction (SCR) system capable of continuously complying with a limit of 2.0 ppmvd @15% oxygen (O_2) (1-hour average)
- An EMx (formerly SCONOx) system capable of continuously complying with a limit of 2.0 ppmvd @15% O_2 (1-hour average)
- Alternative Basic Equipment:
    - Renewable Energy Source (e.g., solar, wind, etc.)

It should be noted that the use of renewable energy in lieu of a combined-cycle gas turbine would "redefine the source." Renewable energy facilities require significantly more land to construct, and need to be located in areas with very specific characteristics. Wind and solar facilities have power generation profiles that cannot match demand; conventional power plants are needed in order to follow demand. The capital costs for wind or solar facilities are substantially higher than for a comparable conventional facility, making financing of such a project significantly different. Finally, one of the fundamental objectives of the proposed SEP is to provide baseload capacity, making the use of renewable energy for the project fundamentally incompatible with the project objective. Nevertheless, these technologies are feasible, and the technical feasibility of renewable energy sources for this specific application will be considered in Step 2.

Step 2 – Eliminate Technologically Infeasible Options

Exhaust Stream Controls

[2] Any Air Quality Management District or Air Pollution Control District in California.

The most recent NOx BACT listings for combined-cycle combustion turbines in this size range are summarized in Table 3.1D-1. The most stringent NOx limit in these recent BACT determinations is a 2.0 ppm[3] limit averaged over a 1-hour averaging period, excluding startups and shutdowns. This level is achieved using a dry low-NOx combustor and SCR. The GE 7HA.02 gas turbine proposed for this project will use dry low-NOx (DLE) emissions technology, which yields turbine-out NOx concentrations as low as 25 ppmvd @ 15% O2, which is comparable to the turbine-out NOx levels for current-generation water-injected gas turbines.

EMx is a NOx reduction system distributed by EmeraChem. This system uses a single catalyst to oxidize both NO and CO, a second catalyst system to absorb NO_2, and then a regeneration system to convert the NO_2 to N_2 and water vapor. The EMx system does not use ammonia as a reagent. The EMx process has been demonstrated in practice on smaller gas turbines, including Redding Electric Utility's (REU) Units 5 and 6 which are comprised of a 43-MW Alstom GTX100 and a 45 MW Siemens SGT 800 combined-cycle gas turbine, respectively. While the technology has never been demonstrated on a gas turbine the size of the GE 7HA.02, the technology is considered by the manufacturer to be scalable.

The SCR system uses ammonia injection to reduce NOx emissions. SCR systems have been widely used in combined-cycle gas turbine applications of all sizes. The SCR process involves the injection of ammonia into the flue gas stream via an ammonia injection grid upstream of a reducing catalyst. The ammonia reacts with the NOx in the exhaust stream to form N_2 and water vapor. The catalyst does not require regeneration, but must be replaced periodically; typical SCR catalyst lifetimes are in excess of three years.

Either SCR or EMx technology is capable of achieving a NOx emission level of 2.5 ppmvd @ 15% O_2. Neither has been demonstrated to consistently achieve lower emission levels in combined-cycle turbines in demand-response service. Both technologies are evaluated further in Step 3.

Table 3.1D-1
Recent NOx BACT Determinations for Large Combined-Cycle Combustion Turbines

Facility	District	NOx Limit[a]	Averaging Period	Control Method Used	Date Permit Issued	Source
Inland Empire Energy Center (GE 107H with duct firing)	SCAQMD	2.0	1 hr	SCR	2003	CEC Siting Div website
El Segundo Power Redevelopment Project (GE 7FA, no duct firing)	SCAQMD	2.0	1 hr	SCR	2010	CEC Siting Div website
GWF Tracy Combined Cycle Power Plant Project (GE 7EA with duct firing)	BAAQMD	2.0	1 hr	SCR	2010	CEC Siting Div website
Oakley Generating Station (GE 7FA)	BAAQMD	2.0	1 hr	SCR	2011	CEC Siting Div website
Watson Cogeneration (GE 7EA with duct firing)	SCAQMD	2.0	1 hr	SCR	2012	CEC Siting Div website

[3] All turbine/HRSG exhaust emissions concentrations shown are as ppm by volume, dry, corrected to 15% O_2.

Table 3.1D-1

Recent NOx BACT Determinations for Large Combined-Cycle Combustion Turbines

Facility	District	NOx Limit[a]	Averaging Period	Control Method Used	Date Permit Issued	Source
Sunbury Generation LP (F class turbines with duct firing)	Pennsylvania DEP	2.0	1 hr	SCR	2014	RBLC website
Marshalltown Generating Station (Siemens SGT6-5000F, no duct firing)	Iowa DNR	2.0	30 days	SCR	2014	RBLC website

Note:
a. All concentrations expressed as parts per million by volume dry, corrected to 15% O_2.

Alternative Basic Technology

Solar Thermal

Solar thermal facilities collect solar radiation, then heat a working fluid (water or a hydrocarbon liquid) to create steam to power a steam turbine generator. All solar thermal facilities require considerable land for the collection field and are best located in areas of high solar incident energy per unit area. In addition, power is generated only while the sun shines, so the units do not supply power at night or on cloudy days. A solar power plant would not meet the project's objective of providing baseload capability that would be available at all times. For these reasons, a solar thermal power plant is rejected as BACT for this application.

Wind

Wind power facilities use a wind-driven rotor to turn a generator to generate electricity. Only limited sites in California have an adequate wind resource to allow for the economic construction and operation of large-scale wind generators. Most of these sites have already been developed or are remote from electric load centers and have little or no transmission access. Even in prime locations the wind does not blow continuously, so power is not always available. Due to the lack of availability of good sites, limited dependability, and relatively high cost, this technology is not feasible for this project. Furthermore, a wind power plant would not meet the project's objective of providing baseload power. For these reasons, a wind power plant is rejected as BACT for this application.

Other alternatives

A number of other alternative generating systems are described in the Alternatives Analysis Section (Section 3.16) of the petition to amend. These additional analyses failed to identify an alternative generating technology that was technically feasible for this site and that would meet the project's objectives.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

Both SCR and EMx technologies, each in combination with combustion controls, are capable of achieving a NOx emission level of 2.0 ppmvd @ 15% O_2. They are therefore ranked together in terms of control effectiveness, and the evaluation of these technologies continues in Step 4.

Step 4 – Evaluate the Most Effective Control Technology Considering Environmental, Energy, and Cost Impacts

The use of SCR will result in ammonia emissions due to an allowable ammonia slip limit of 5 ppmvd @ 15% O_2. A health risk screening analysis of the proposed project using air dispersion modeling was

prepared to demonstrate that both the acute health hazard index and the chronic health hazard index are much less than 1, based on an ammonia slip limit of 5 ppmv @ 15% O_2. In accordance with currently accepted practice, a hazard index below 1.0 is not considered significant. Therefore, the toxic impact of the ammonia slip resulting from the use of SCR is deemed to be not significant, and is not a sufficient reason to eliminate SCR as a control alternative.

A second potential environmental impact that may result from the use of SCR involves the storage and transport of aqueous or anhydrous ammonia.[4] Although ammonia is toxic if swallowed or inhaled and can irritate or burn the skin, eyes, nose, or throat, it is a commonly used material that is typically handled safely and without incident. The project operator will be required to develop and maintain a Risk Management Plan (RMP) and to implement a Risk Management Program to prevent accidental releases of ammonia. The RMP provides information on the hazards of the substance handled at the facility and the programs in place to prevent and respond to accidental releases. The accident prevention and emergency response requirements reflect existing safety regulations and proven industry safety codes and standards. Thus, the potential environmental impact due to aqueous ammonia use at the Project is minimal and does not justify the elimination of SCR as a control alternative.

Regeneration of the EMx catalyst is accomplished by passing hydrogen gas over an isolated catalyst module. The hydrogen gas is generated by reforming steam, so some of the steam from the auxiliary boiler or the HRSG would have to be diverted for this use. This would result in additional natural gas consumption, and increased emissions, per megawatt hour of electricity produced.

"Achieved in Practice" Criteria

In general, the method for determining when emission control technologies are achieved in practice (AIP) is similar in each District. The SCAQMD has established formal criteria for determining when emission control technologies should be considered AIP for the purposes of BACT determinations. The criteria include the elements outlined below.

- Commercial Availability: At least one vendor must offer this equipment for regular or full-scale operation in the United States. A performance warranty or guarantee must be available with the purchase of the control technology, as well as parts and service.
- Reliability: All control technologies must have been installed and operated reliably for at least six months. If the operator did not require the basic equipment to operate daily, then the equipment must have at least 183 cumulative days of operation. During this period, the basic equipment must have operated (1) at a minimum of 50% design capacity; or (2) in a manner that is typical of the equipment in order to provide an expectation of continued reliability of the control technology.
- Effectiveness: The control technology must be verified to perform effectively over the range of operation expected for that type of equipment. If the control technology will be allowed to operate at lesser effectiveness during certain modes of operation, then those modes of operation must be identified. The verification shall be based on a performance test or tests, when possible, or other performance data.

Each of these criteria is discussed separately below for SCR and for EMx.

SCR Technology – SCR has been achieved in practice at numerous combustion turbine installations throughout the world. There are numerous combined-cycle gas turbine projects that limit NOx emissions to 2.0 ppmc using SCR technology, as shown in Table 3.1D-1. An evaluation of the

[4] The Project proposes to use the less concentrated, safer aqueous form of ammonia.

proposed AIP criteria as applied to the achievement of 2.0 ppmc, and to extremely low NOx levels (below 2.0 ppmc) using SCR technology, is summarized below.

- Commercial Availability: Turbine-out NOx from the GE 7HA.02 gas turbine is generally guaranteed at 9 ppmc. Achieving a controlled NOx limit below 2 ppmc on a 1-hour average basis would require SCR technology to achieve reductions greater than 75 percent. However, it is not clear that a commercial guarantee would be available for NOx levels below 2 ppm. As shown in Table 3.1D-1 above, this criterion is satisfied at a 2.0 ppmc permit level.
- Reliability: SCR technology, in combination with combustion controls, has been shown to be capable of achieving NOx levels consistent with a 2.0 ppmc permit limit during extended, routine operations at many commercial power plants. There are no reported adverse effects of operation of the SCR system at these levels on overall plant operation or reliability. There has been no demonstration of operation at levels below 2.0 ppmc on a 1-hour average basis during extended, routine operation; consequently, this criterion is not satisfied for NOx limits below 2.0 ppmc.
- Effectiveness: SCR technology has been demonstrated to achieve NOx levels of 2.0 ppmc with H-class turbines, but not at lower limits for this generating technology. Short-term excursions have resulted in NOx concentrations above the permitted level of 2.0 ppmc; however, these excursions are not frequent and have not been associated with diminished effectiveness of the SCR system. Rather, these excursions typically have been associated with SCR inlet NOx levels in excess of those for which the SCR system was designed or with malfunctions of the ammonia injection system. Consequently, this criterion is satisfied at a NOx limit of 2.0 ppmc, but not at lower NOx limits.
- Conclusion: SCR technology capable of achieving NOx levels of 2.0 ppmc is considered to be achieved in practice. The permit limits for the proposed project CTGs include a NOx limit of 2.0 ppmc on a 1-hour average basis. This proposed limit is consistent with the available data. The AIP criteria are not met for SCR on large combined-cycle gas turbines at NOx limits lower than 2.0 ppmc.

EMx Technology – EMx has been demonstrated in service in five applications: the Sunlaw Federal cogeneration plant, the Wyeth BioPharma cogeneration facility, the Montefiore Medical Center cogeneration facility, the University of California San Diego facility, and the City of Redding Power Plant. The combustion turbines at these facilities are much smaller than for the proposed project turbine. The largest installation of the EMx system is at the Redding Power Plant. The Redding Power Plant includes two combined-cycle combustion turbines—a 43 MW Alstom GTX100 with a permitted NOx emission rate of 2.5 ppmc (Unit 5), and a 45 MW Siemens SGT 800 with a permitted NOx emission rate of 2.0 ppmc (Unit 6).

A review of NOx continuous emissions monitoring (CEM) data obtained from the EPA's Acid Rain program website[5] indicates a mean NOx level for the Redding Unit 5 of less than 1.0 ppm during the period from 2002 to 2007, but not continuous compliance with a 2.5 ppmc limit. After the first year of operation, Unit 5 experienced only a few hours of non-compliance per year (less than 0.1% of the annual operating hours exceed that plant's NOx permit limit of 2.5 ppmc). The experience at the City of Redding Plant indicates the ability of the EMx system to control NOx emissions to levels of 2.5 ppmc. These data do not indicate the ability to consistently achieve NOx levels below 2.0 ppm on a 1-hour average basis, notwithstanding the lower annual average concentration. This is due to the cyclical nature of EMx NOx levels between plant shutdowns and scheduled catalyst cleanings.

[5] Available at *http://camddataandmaps.epa.gov/gdm/index.cfm?fuseaction=prepackaged.results*.

Redding Unit 6 started up on October 2011. A review of annual Title V compliance certification reports for the unit indicates that the number of NOx emissions-related deviations has declined between 2012 and 2014. The deviations during the early years were generally related to the inability of the EMx system to achieve control of NOx emissions within the 2-hour startup period allowed by the permit, and not to any failure to maintain the 2.0 ppmc limit during routine operation. However, based on the Rapid Response startup design employed on the SEP gas turbine and resulting start times of under one hour, the startup issues experienced at Redding Unit 6 suggest that the EMx NOx control technology could not be successfully applied to the proposed project.

Based on this information, the following paragraphs evaluate the proposed AIP criteria as applied to the achievement of low NOx levels (2.0 ppmc) using EMx technology.

- Commercial Availability: While a proposal has not been sought, presumably EmeraChem would offer standard commercial guarantees for the proposed project. Consequently, this criterion is expected to be satisfied.
- Reliability: Redding Unit 5 was originally permitted with a 2.0 ppmc permit limit. It was subsequently found that the unit could not maintain compliance with a 2.0 ppmc limit on a consistent basis, and the limit was eventually changed to 2.5 ppmc. As discussed above, based on a review of the CEM data for Redding Unit 5, the EMx system complied with the 2.5-ppmc NOx permit limit but with a few hours each year of excess emissions (approximately 3% of annual operating hours following the first year, and approximately 2% following the second year, dropping to approximately 0.1% after 4 years). This level of performance was also associated with some significant operating and reliability issues. According to a June 23, 2005 letter from the Shasta County Air Quality Management District,[6] repairs to the EMx system began shortly after initial startup and continued during several years of operation. Redesign of the EMx system was required due to a problem with the reformer reactor combustion production unit that led to sulfur poisoning of the catalyst, despite the sole use of low-sulfur, pipeline quality natural gas as the turbine fuel. In addition, the EMx system catalyst washings had to occur at a frequency several times higher than anticipated during the first three years of operation, which resulted in substantial downtime of the combustion turbine. Since the REU installations are the most representative of all of the EMx-equipped combustion turbine facilities for comparison to the proposed Project, the problems encountered at REU—especially the startup issues experience by Unit 6-- bring into question the reliability of the EMx system for the proposed project.
- Effectiveness: The EMx system at REU Unit 5 has recently been able to demonstrate compliance with a NOx level of 2.5 ppmc, and the newer REU Unit 6 has been permitted with a 2.0 ppmc NOx limit. As discussed above, there have been no known excursions beyond the permit limit for Unit 6 in the recent limited operation; however, the startup issues experienced by Unit 6 suggest that the EMx system would not be compatible with the Rapid Response gas turbine design.

  There is an additional issue with the application of EMx technology to the proposed project. Steam is needed as a carrier gas for the regeneration hydrogen. As a result, the project would have to divert some of the steam from the auxiliary steam boiler or from the HRSG for use in the regeneration process. This would require additional use or an increase in the size of the auxiliary boiler, with resulting increases in natural gas fuel use and emissions, or a

[6] Letter dated June 23, 2005, from Shasta County Air Quality Management District to the Redding Electric Utility regarding Unit 5 demonstration of compliance with its NOx permit limit.

reduction in steam turbine output. Either approach would result in reduced overall plant efficiency as well as higher criteria and GHG emissions.

- Conclusion: EMx systems may be capable of achieving NOx levels of 2.0 ppmc and less. However, the operating history does not support a conclusion that this technology is achieved in practice at this emission level, based on the above guidelines.

Summary of Achieved in Practice Evaluation

SCR's capability to consistently achieve 2.0 ppmc NOx (1-hour average) in large, combined-cycle gas turbines has been demonstrated by numerous installations. EMx's ability to consistently achieve a NOx emission rate below 2.0 ppmc in large turbines has not been demonstrated. An emission level of 2.0 ppmc NOx has therefore been achieved in practice, and any BACT determination must be at least as stringent as that.

Technologically Feasible/Cost Effective Criterion

No candidate technology with lower emission levels than those achieved in practice has been identified.

Step 5 – Determine BACT/Present Conclusions

BACT must be at least as stringent as the most stringent level achieved in practice, federal NSPS, or district prohibitory rule. Based upon the results of this analysis, the NOx BACT determinations of 2.0 ppmc on a 1-hour average basis made for recently permitted combined-cycle gas turbine projects in SCAQMD, BAAQMD, SJVAPCD and elsewhere reflect the most stringent NOx emission limit that has been achieved in practice. No more stringent level has been suggested as being technologically feasible. Therefore, BACT/LAER for NOx for this application is any technology capable of achieving 2.0 ppmc on a 1-hour average basis.

Both SCR and EMx are expected to achieve the proposed BACT NOx emission limit of 2.0 ppmc averaged over one hour. However, concerns remain regarding the long-term effectiveness of EMx as a control technology because the technology has not been demonstrated on a long-term basis or on a fast-start gas turbine. For the reasons described in the "achieved in practice" discussion above, EMx technology is eliminated as BACT and SCR has been selected as the NOx control technology to be used for the Project.

The gas turbine used for the proposed project will be designed to meet a NOx level of 2.0 ppmc on a 1-hour average basis using SCR.

3.1.2.2 VOC EMISSIONS

Step 1 – Identify All Possible Control Technologies

Most VOCs emitted from natural gas-fired turbines are the result of incomplete combustion of fuel. Therefore, most of the VOCs are methane and ethane, which are not effectively controlled by an oxidation catalyst. However, oxidation catalyst technology designed to control CO can also provide some degree of control of VOC emissions, especially the more complex and toxic compounds formed in the combustion process. Therefore, the use of good combustion practices is generally considered BACT for VOC, with some additional benefit provided by an oxidation catalyst.

Alternative basic equipment—including renewable energy sources, such as solar and wind, and combined cycle technology—was already discussed above (Step 1 for NOx BACT on the CTGs). For the same reasons, solar, wind and other renewable energy sources are rejected as VOC BACT for this application.

Step 2 – Eliminate Technologically Infeasible Options

The only technology under consideration is combustion controls, with some additional benefit provided by an oxidation catalyst. This combination of technologies has been demonstrated to be feasible in many applications. No other technologies have been identified that are capable of achieving the same level of control. As a result, the goal of the rest of this analysis is to determine the appropriate emission limit that constitutes BACT for this application.

CARB's BACT guidance document for electric generating units rated at greater than 50 MW indicates that BACT for the control of VOC emissions for combined-cycle and cogeneration power plants is 2 ppmvd @ 15% O_2. A summary of recent CARB BACT guidance is shown in Table 3.1D-2.

Table 3.1D-2
CARB BACT Guidance For Power Plants

Pollutant	BACT
Nitrogen Oxides	2.5 ppmv @ 15% O_2 (1-hour average) or 2.0 ppmv @ 15% O_2 (3-hour average)
Sulfur Dioxide	Fuel sulfur limit of 1.0 grains/100 scf
Carbon Monoxide	6 ppmv @ 15% O_2 (3-hour average)
VOC	2 ppmv @ 15% O_2 (1-hour average)
NH_3	5 ppmv @ 15% O_2 (3-hour average)
PM_{10}	Fuel sulfur limit of 1.0 grains/100 scf

The SJVAPCD's BACT guidelines contain a determination for gas turbines rated at larger than 50 MW with uniform load and without heat recovery. The SJVAPCD concluded that a VOC exhaust concentration of 2.0 ppmvd @ 15% O_2 constituted BACT that had been achieved in practice, while 0.6 to 1.3 ppmvd @ 15% O_2 is considered technologically feasible.

Published prohibitory rules from the BAAQMD, SMAQMD, SDCAPCD, SJVAPCD, and SCAQMD were reviewed to identify the VOC standards that govern existing natural gas-fired combined-cycle combustion gas turbines. None of the prohibitory rules for combustion gas turbines specify an emission limit for VOC. The applicable NSPS (40 CFR 60 Subpart KKKK) does not include a VOC limit.

A summary of recent VOC BACT determinations is shown in Table 3.1D-3.

Table 3.1D-3
Recent VOC BACT Determinations for Large Combined-Cycle Combustion Turbines

Facility	District	VOC Limit[a]	Averaging Period	Control Method Used	Date Permit Issued	Source
Inland Empire Energy Center (GE 107H with duct firing)	SCAQMD	2.0	1 hr	Oxidation catalyst	2003	CEC Siting Div website
Avenal Power Center LLC (GE 7FA with duct firing)	SJVAPCD	2.0 w/ duct firing; 1.4 w/o duct firing	3 hrs	Oxidation catalyst	2008	CEC Siting Div website
El Segundo Power Redevelopment Project (GE 7FA, no duct firing)	SCAQMD	2.0	1 hr	Oxidation catalyst	2010	CEC Siting Div website

Table 3.1D-3
Recent VOC BACT Determinations for Large Combined-Cycle Combustion Turbines

Facility	District	VOC Limit[a]	Averaging Period	Control Method Used	Date Permit Issued	Source
GWF Tracy Combined Cycle Power Plant Project (GE 7EA with duct firing)	BAAQMD	2.0 w/ duct firing; 1.5 w/o duct firing	3 hrs	Oxidation catalyst	2010	CEC Siting Div website
Oakley Generating Station (GE 7FA, no duct firing)	BAAQMD	1.0	3 hrs	Oxidation catalyst	2011	CEC Siting Div website
Watson Cogeneration (GE 7EA with duct firing)	SCAQMD	2.0	1 hr	Oxidation catalyst	2012	CEC Siting Div website
Sunbury Generation LP (F class turbines with duct firing)	Pennsylvania DEP	2.0	unknown	Oxidation catalyst	2014	RBLC website
Marshalltown Generating Station (Siemens SGT6-5000F, no duct firing)	Iowa DNR	2.0	30 days	Oxidation catalyst	2014	RBLC website

Note:
a. All concentrations expressed as parts per million by volume dry, corrected to 15% O_2 (ppmc).

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

The control technologies under consideration are ranked as follows:

- 1.0 ppmvd @ 15% O_2, 3-hour average, without duct firing;
- 1.4 ppmvd @ 15% O_2, 3-hour average, without duct firing; and
- 2.0 ppmvd @ 15% O_2, 3-hour average, with duct firing.

The lowest VOC limit that applies during duct firing is 2.0 ppmc. Although the Oakley project was permitted with a VOC limit of 1.0 ppmc, that project has not been constructed or operated, so the limit has not yet been achieved in practice. In addition, the Oakley project is not equipped with duct firing. An averaging period of less than 3 hours is not reasonable, since compliance with the VOC limit will be demonstrated through source testing, which consists of three one-hour test runs.

Step 4 – Evaluate the Most Effective Control Technology Considering Environmental, Energy, and Cost Impacts

This step evaluates any source-specific environmental, energy, or economic impacts that demonstrate that the top alternative listed in the previous step is inappropriate as BACT.

The Applicant has proposed to meet a 2.0 ppmc limit on a 3-hour average basis during duct firing, and a 1.0 ppmc limit on a 3-hour average basis without duct firing. These levels are consistent with the VOC BACT determinations summarized in Table 3.1D-3, and therefore meet BACT.

Step 5 – Determine BACT/Present Conclusions

BACT must be at least as stringent as the most stringent achieved in practice, required in a federal NSPS or district prohibitory rule, or considered technologically feasible. Based upon the results of this analysis, the VOC emission limits of 2.0 ppmc during duct firing and 1.0 ppmc without duct firing are considered to be BACT for the proposed project.

3.1.2.3 SULFUR OXIDE EMISSIONS

Step 1 – Identify All Possible Control Technologies

Natural gas fired combustion turbines have inherently low SOx emissions due to the small amount of sulfur present in the fuel. With typical pipeline quality natural gas sulfur content well below 1 grain/100 scf, the SOx emissions for natural gas fired combustion turbines are orders of magnitude less than oil-fired turbines. Firing with natural gas, and the resulting control of SOx emissions, has been used by numerous combustion turbines throughout the world. Due to the prevalence of the use of natural gas to control SOx emissions from combustion turbines, only an abbreviated discussion of post-combustion controls will be addressed in this section.

Post-combustion SOx control systems include dry and wet scrubber systems. These types of systems are typically installed on high SOx emitting sources such as coal-fired power plants. Post-combustion control systems for combustion turbines also include ESx catalyst systems. These systems trap the sulfur in the exhaust stream on an ESx catalyst. During a regeneration process, the sulfur is removed from the ESx catalyst and is either reintroduced back into the exhaust stream or sent to a sulfur scrubbing system. If the sulfur removed from the ESx catalyst is reintroduced back into the exhaust stream, there is no SOx control associated with the system.

Step 2 – Eliminate Technically Infeasible Options

All of the control options discussed above are technically feasible.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

The typical SOx control level for a well-designed wet or dry scrubber installed on a coal-fired boiler ranges from approximately 70% to 90%,[7] with some installations achieving even higher control levels. According to EmeraChem literature,[8] the ESx system is capable of removing approximately 95% of the SOx emissions from the exhaust stream of natural gas fired combustion turbines. With the sulfur scrubber option, during the regeneration cycle of the ESx system the sulfur captured on the ESx catalyst is sent to a sulfur-scrubbing unit. A high-efficiency sulfur-scrubbing unit would achieve a control level similar to that of the wet/dry scrubbers discussed above.

Step 4 – Evaluate Most Effective Controls and Document Results

The use of low sulfur content pipeline natural gas has been achieved in practice at numerous combustion turbine installations throughout the world, and the use of this fuel minimizes SOx emissions. While it would be theoretically feasible to install some type of post-combustion control such as a dry/wet scrubber system or an ESx catalyst with a sulfur scrubber on a natural gas fired turbine, due to the inherently low SOx emissions associated with the use of natural gas, these systems are not cost effective and regulatory agencies do not require them. Consequently, no further discussion of post-combustion SOx control is necessary.

[7] Air and Waste Management Association, *Air Pollution Control Manual*, Second Edition, page 206.

[8] High Performance EMx Emissions Control Technology for Fine Particles, NOx, CO, and VOCs from Combustion Turbines and Stationary IC Engines, by Steven DeCicco and Thomas Girdlestone, EmeraChem Power, June 2008, page 19.

Step 5 – Determine BACT/Present Conclusions

BACT for this project is the use of pipeline-quality natural gas. The SOx control method for the proposed project is the use of pipeline-quality natural gas. Consequently, the proposed project is consistent with BACT requirements.

3.1.2.4 $PM/PM_{10}/PM_{2.5}$ EMISSIONS

Step 1 – Identify All Possible Control Technologies

Alternative basic equipment—including renewable energy sources, such as solar and wind—has also been identified as a technology for the control of $PM/PM_{10}/PM_{2.5}$ emissions. Such alternative basic equipment was already discussed above (Step 1 for NOx BACT on the CTGs/HRSGs). For the same reasons, solar, wind and other renewable energy sources are rejected as $PM_{10}/PM_{2.5}$ BACT for this application.

Achievable Controlled Levels and Available Control Options

PM emissions from natural gas-fired turbines primarily result from carryover of noncombustible trace constituents in the fuel. PM emissions are minimized by using clean-burning pipeline quality natural gas with low sulfur content.

The CARB BACT Clearinghouse, as well as the BAAQMD BACT guideline, identifies the use of natural gas as the primary fuel as "achieved in practice" for the control of $PM_{10}/PM_{2.5}$ for combustion gas turbines.

CARB's BACT guidance document for stationary gas turbines used for power plant configurations[9] indicates that BACT for the control of PM emissions is an emission limit corresponding to natural gas with a fuel sulfur content of no more than 1 grain/100 standard cubic foot.

Title 40 CFR Part 60 Subpart KKKK contains the applicable NSPS for combustion gas turbines. Subpart KKKK does not regulate $PM_{10}/PM_{2.5}$ emissions.

Published prohibitory rules from the SCAQMD, SJVAPCD, SMAQMD, and SDCAPCD were reviewed to identify the PM_{10} standards that govern natural gas-fired combustion gas turbines. These prohibitory rules do not regulate $PM_{10}/PM_{2.5}$ emissions. Recent $PM_{10}/PM_{2.5}$ BACT determinations for combined-cycle gas turbines are summarized in Table 3.1D-4.

Table 3.1D-4
Recent $PM_{10}/PM_{2.5}$ BACT Determinations for Combined-Cycle Combustion Turbines

Facility	District	PM BACT Determination	Date Permit Issued	Source
Inland Empire Energy Center (GE 107H with duct firing)	SCAQMD	10 lb/hr (equivalent to 0.00385 lb/MMBtu)	2005 (amendment)	CEC Staff Analysis of Proposed Modifications
Avenal Power Center LLC (GE 7FA with duct firing)	SJVAPCD	11.78 lb/hr w/ duct firing; 8.91 lb/hr w/o duct firing	2009	EPA Region 9 PSD Permit AAQIR
El Segundo Power Redevelopment Project (GE 7FA, no duct firing)	SCAQMD	9.5 lb/hr (equivalent to 0.0045 lb/MMBtu at peak load)	2010	CEC Siting Div website

[9] CARB, Guidance for Power Plant Siting and Best Available Control Technology, July 22, 2009, Table I-1. Available at http://www.arb.ca.gov/energy/powerpl/appdfin.pdf

Table 3.1D-4
Recent $PM_{10}/PM_{2.5}$ BACT Determinations for Combined-Cycle Combustion Turbines

Facility	District	PM BACT Determination	Date Permit Issued	Source
GWF Tracy Combined Cycle Power Plant Project (GE 7EA with duct firing)	BAAQMD	Natural gas fuel (permitted limits are 5.8 lb/hr w/ duct firing; 4.4 lb/hr w/o duct firing) (equivalent to 0.007 lb/MMBtu)	2010	CEC Siting Div website
Oakley Generating Station (GE 7FA, no duct firing)	BAAQMD	Exclusive use of natural gas	2011	CEC Siting Div website
Watson Cogeneration (GE 7EA with duct firing)	SCAQMD	Natural gas fuel	2012	CEC Siting Div website
Sunbury Generation LP (F class turbines with duct firing)	Pennsylvania DEP	0.0088 lb/MMBtu (equivalent to ~22 lb/hr)	2014	RBLC website
Marshalltown Generating Station (Siemens SGT6-5000F, no duct firing)	Iowa DNR	0.01 lb/MMBtu (equivalent to ~22.5 lb/hr)	2014	RBLC website

This "top-down" $PM_{10}/PM_{2.5}$ BACT analysis will consider the following emission limitations:

- 10 lb/hr with duct firing; 8 lb/hr without duct firing (equivalent to 0.0029 lb/MMBtu with duct firing and 0.0025 lb/MMBtu without duct firing)

Step 2 – Eliminate Technologically Infeasible Options

As discussed above, solar, wind and other renewable energy alternatives are not considered technologically feasible for this application.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

No control technology other than use of clean natural gas fuel has been identified for this application. The proposed PM_{10} emission limits are lower on a lb/MMBtu basis than any of the recent BACT determinations shown in Table 3.1D-4.

Step 4 – Evaluate the Most Effective Control Technology Considering Environmental, Energy, and Cost Impacts

No control technology other than use of clean natural gas fuel has been identified for this application.

Step 5 – Determine BACT/Present Conclusions

Based upon the results of this analysis, the use of natural gas as the primary fuel source constitutes BACT for $PM_{10}/PM_{2.5}$ emissions from combustion gas turbines. Through the use of natural gas, the turbines are expected to be able to meet the proposed emission limits of 10 lb/hr with duct firing and 8 lb/hr without duct firing.

3.1.3 BACT for the Combined-Cycle CTGs: Startup/Shutdown

Startup and shutdown periods are a normal part of the operation of combined-cycle power plants such as SEP. BACT must also be applied during the startup and shutdown periods of gas turbine

operation. The BACT limits discussed in the previous section apply to steady-state operation, when the turbines have reached stable operations and the emission control systems are fully operational.

3.1.3.1 NOx EMISSIONS

Step 1 – Identify All Possible Control Technologies

The following technologies for control of NOx during startups and shutdowns have been identified:

- A Selective Catalytic Reduction (SCR) system capable of continuously complying with a limit of 2.0 ppmc (1-hour average);
- Fast-start technologies; and
- Operating practices to minimize the duration of startup and shutdown.

The SEP gas turbine will be controlled by a dry low-NOx combustor and SCR. The SCR system will operate at all times that the stack temperature is in the proper operating range.

Step 2 – Eliminate Technologically Infeasible Options

During gas turbine startup, there are equipment and process requirements that must be met in sequential order to protect the equipment.

For all turbine technologies, incomplete combustion at low loads results in higher CO and VOC emission rates. Furthermore, the post-combustion controls that are used to achieve additional emissions reductions (SCR and oxidation catalyst) require that specific exhaust temperature ranges be reached to be fully effective. The use of SCR to control NOx is not technically feasible during the initial stages of startup, when the surface of the SCR catalyst is below the manufacturer's recommended operating range. When catalyst surface temperatures are low, ammonia will not react completely with the NOx, resulting in excess NOx emissions or excess ammonia slip or both. The oxidation catalyst is not effective at controlling CO emissions when exhaust temperature is below the optimal temperature range. Therefore, exhaust gas controls used to achieve BACT for normal operations are not feasible control techniques during startups and shutdowns.

This "top-down" BACT analysis will consider the following NOx emission limitations:

- Operating practices to minimize emissions during startup and shutdown; and
- Design features to minimize the duration of startup and shutdown.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

Operating Practices to Minimize Emissions during Startup and Shutdown

There are basic principles of operation, or Best Management Practices, that minimize emissions during startups and shutdowns. These Best Management Practices are outlined below.

- During a startup, bring the gas turbine to the minimum load necessary to achieve compliance with the applicable NOx and CO emission limits as quickly as possible, consistent with the equipment manufacturers' recommendations and safe operating practices.
- During a startup, initiate ammonia injection to the SCR system as soon as the SCR catalyst temperature and ammonia vaporization system have reached their minimum operating temperatures.
- During a shutdown, once the turbine reaches a load that is below the minimum load necessary to maintain compliance with the applicable NOx and CO emission limits, reduce the gas turbine load to zero as quickly as possible, consistent with the equipment manufacturers' recommendations and safe operating practices.

- During a shutdown, maintain ammonia injection to the SCR system as long as the SCR catalyst temperature and ammonia vaporization system remain above their minimum operating temperatures.

A key underlying consideration of these Best Management Practices is the overall safety of the plant staff by promoting operation within the limitations of the equipment and systems, and allowing for operator judgment and response times to respond to alarms and trips during a startup or shutdown sequence.

Design Features to Minimize the Duration of Startup and Shutdown

An additional technique to reduce startup emissions is to minimize the amount of time the gas turbine spends in startup. Startup times for conventional combined-cycle gas turbines are generally driven by the need for long gas turbine holds at low loads as the HRSG and steam turbine come up to operating temperature and pressure. The use of Rapid Response startup technology eliminates the long hold times by decoupling the gas turbine from the steam cycle startup, allowing the gas turbine to be brought up to minimum emissions-compliant load quickly without the need for low-load holds. This reduces the typical startup times for the gas turbine from up to 3 hours for a cold start to under 1 hour.

Step 4 – Evaluate the Most Effective Control Technology Considering Environmental, Energy, and Cost Impacts

Utilizing best operating practices to minimize emissions during startups and shutdowns has no adverse environmental or energy impacts, nor does it require additional capital expenditure.

The approach of reducing startup/shutdown duration has no adverse environmental or energy impacts, and the use of Rapid Response startup technology minimizes startup/shutdown duration.

Step 5 - Determine BACT/Present Conclusions

BACT for NOx during startups/shutdowns is the use of operating systems/practices that reduce the duration of startups and shutdowns to the greatest extent feasible, and the use of operational techniques to initiate ammonia injection as soon as possible during a startup. Therefore, BACT is determined to be the use of combined-cycle gas turbine technology with Rapid Response technology and the application of operating systems/practices that minimize startup and shutdown durations, in combination with the use of operational techniques to initiate ammonia injection as soon as possible during a startup.

3.1.3.2 VOC EMISSIONS

Step 1 – Identify All Possible Control Technologies

The VOC control technologies under consideration for startups and shutdowns are ranked as follows:

- Operating practices to minimize the duration of startup and shutdown.

Step 2 – Eliminate Technologically Infeasible Options

None of the proposed alternatives is infeasible for this application.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

The only proposed control technology is operating practices to minimize the duration of startups and shutdowns.

Step 4 – Evaluate the Most Effective Control Technology Considering Environmental, Energy, and Cost Impacts

VOC emissions during startup and shutdown are minimized by minimizing the duration of startup and shutdown.

Step 5 – Determine BACT/Present Conclusions

BACT for VOC during startups/shutdowns is the use of combined-cycle gas turbine technology and operating practices that reduce the duration of startups and shutdowns to the greatest extent feasible.

3.1.3.3 SULFUR OXIDE EMISSIONS

Step 1 – Identify All Possible Control Technologies

The SOx control technologies under consideration for startups and shutdowns are ranked as follows:

- Use of natural gas as a fuel; and
- Operating practices to minimize the duration of startup and shutdown.

Step 2 – Eliminate Technologically Infeasible Options

None of the proposed alternatives is infeasible for this application.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

Ranking for the control technologies is as indicated in Step 1.

Step 4 – Evaluate the Most Effective Control Technology Considering Environmental, Energy, and Cost Impacts

SOx emissions during startup and shutdown are minimized by use of natural gas as a fuel, and minimizing duration of startup and shutdown.

Step 5 – Determine BACT/Present Conclusions

BACT for SOx during startups/shutdowns is the use of natural gas as a fuel, and operating practices that reduce the duration of startups and shutdowns to the greatest extent feasible.

3.1.3.4 PM/PM_{10}/$PM_{2.5}$ EMISSIONS

Step 1 – Identify All Possible Control Technologies

The analysis for particulate is identical to the analysis for SOx.

Step 2 – Eliminate Technologically Infeasible Options

The analysis for particulate is identical to the analysis for SOx.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

The analysis for particulate is identical to the analysis for SOx.

Step 4 – Evaluate the Most Effective Control Technology Considering Environmental, Energy, and Cost Impacts

The analysis for particulate is identical to the analysis for SOx.

Step 5 – Determine BACT/Present Conclusions

BACT for particulate during startups/shutdowns is the use of natural gas as a fuel, and operating practices that reduce the duration of startups and shutdowns to the greatest extent feasible

3.1.3.5 SUMMARY

Proposed BACT determinations for the SEP gas turbines are summarized in Table 3.1D-5.

Table 3.1D-5
Proposed BACT Determinations for SEP Gas Turbine

Pollutant	Proposed BACT Determination
Nitrogen Oxides	Dry low-NOx combustion controls and SCR system, 2.0 ppmc[a], 1-hour average, with exemptions for startup/shutdown conditions
Sulfur Dioxide	Natural gas fuel (sulfur content not to exceed 0.5 grain/100 scf)
VOC	Good combustion practices, 2.0 ppmc with duct firing, 1.0 ppmc without duct firing, 1-hour average
$PM_{10}/PM_{2.5}$	Natural gas fuel, 10 lbs/hr with duct firing, 8 lb/hr without duct firing
GHGs	GE 7HA.02 combined-cycle gas turbine technology, good combustion practices
Startup/Shutdown	Best operating practices to minimize startup/shutdown times and emissions

Note:
a. ppmc: parts per million by volume dry, corrected to 15% O_2.

3.1.4 BACT for the Cooling System

Step 1 – Identify All Possible Control Technologies

The first step in a top-down analysis is to identify, for the emissions unit and pollutant in question, all available control options. Available control options are those air pollution control technologies or techniques, including alternate basic equipment or processes, with a practical potential for application to the emissions unit in question. The control alternatives should include not only existing controls for the source category in question, but also, through technology transfer, controls applied to similar source categories and gas streams.

The emissions source for which BACT is being considered is a wet cooling tower with high efficiency drift eliminators.

Potential control technologies were identified by searching the following sources for entries pertaining to cooling towers:

- SCAQMD BACT Guidelines;
- SJVAPCD BACT Clearinghouse;
- BAAQMD BACT Guidelines;
- USEPA RACT/BACT/LAER Clearinghouse;
- Other districts' and states' BACT Guidelines; and
- BACT/LAER requirements in New Source Review permits issued by AQMD or other agencies.

BACT determinations from the SCAQMD, SJVAPCD, BAAQMD, and USEPA are summarized in Table 3.1D-6.

Table 3.1D-6
Summary of PM_{10} BACT Clearinghouse Guidelines

Permitting Agency	Guideline	Operation	PM_{10} BACT for Cooling Towers
SCAQMD	None	N/A	N/A

SJVAPCD	§8.3.10	Induced Draft Evaporative Cooling Tower	Cellular Type Drift Eliminator
BAAQMD	None	N/A	N/A
USEPA	RBLC Listings	Industrial Cooling Towers	Drift Eliminators 0.0005% Drift Rate

Table 3.1D-7 summarizes information on wet cooling towers of the type proposed for use at SEP that have recently been approved by the California Energy Commission (CEC) through the Application for Certification (AFC) process; these controlled emission rates were approved by the indicated permitting authority. Recent BACT determinations for similarly sized cooling towers from the EPA RBLC listings are summarized in Table 3.1D-8.

Table 3.1D-7

PM_{10} Emission Rates for Wet Cooling Towers in CEC Proceedings

Permitting Agency	Project	Permit Required?	Permit Date	Circulating Water Flow Rate	Drift Rate Limit
SCAQMD	Inland Empire Energy Center	yes	2005 (amendment)	90,000 gpm (each of two)	0.0005%
	Watson Cogeneration	yes	2011	18,600 gpm (two new cells only)	0.001%
SJVAPCD	NCPA Lodi Energy Center	yes	2010	69,000 gpm	0.0005%
	Walnut Energy Center	yes	2004	68,500 gpm	0.0005%
BAAQMD	Metcalf Energy Center	yes	2001	133,378 gpm	0.0005%

Table 3.1D-8

PM_{10} BACT Determinations for Wet Cooling Towers From RBLC Database

Project	Permit # (Date)	Circulating Water Flow Rate	Drift Rate Limit
NRG Texas Power LLC, Bertron Electric Generating Station	TX-0714 (December 2014)	not specified	0.0005%
Holland Board of Public Works combined cycle power plant	MI-0412 (December 2013)	not specified	0.0005%
St. Joseph Energy Center	IN-0158 (December 2012)	170,000 gpm	0.0005%
Enertergy LA LLC, Ninemile Point Electric Generating Plant	LA-0254 (August 2011)	1215,847 gpm	0.0005%

BACT must be at least as stringent as what has been achieved in practice (AIP) for a category or class of source. Additionally, USEPA guidelines require that technology that is determined to be AIP for one category of source be considered for transfer to other source categories. There are two types of potentially transferable control technologies: (1) exhaust stream controls, and (2) process controls and modifications. For the first type, technology transfer must be considered between source categories that produce similar exhaust streams. For the second type, technology transfer must be considered between source categories with similar processes. In order to be considered, the candidate control technology must be technologically feasible for the application being reviewed. In

order to be required as BACT, the candidate technology must be cost effective, considering energy, environmental, economic, and other costs.

Three possible alternate basic technologies were identified from background technical materials prepared during the rulemaking of USEPA's National Pollutant Discharge Elimination System (NPDES).[10] The NPDES regulation establishes national technology-based performance requirements applicable to the location, design, construction, and capacity of cooling water intake structures at new facilities using once-through cooling. During the rulemaking process, USEPA also evaluated alternatives to once-through cooling, including recirculating wet cooling systems, dry cooling systems, and hybrid cooling systems.

Recirculating Wet Cooling Tower with High Efficiency Drift Eliminator – In conventional closed-cycle recirculating wet cooling towers, cooling water that has been used to cool the condensers is pumped to the top of a recirculating cooling tower; as the heated water falls, it cools through an evaporative process and warm, moist air rises out of the tower, often creating a vapor plume. Approximately 80% of the heat transfer (cooling) occurs due to evaporation, and 20% of the heat transfer occurs due to convection.[11] Therefore, wet cooling towers are most effective in areas of low relative humidity.

Dry Cooling Tower – Dry cooling systems (towers) use either a natural or a mechanical air draft to transfer heat from the condenser tubes to air. Their effectiveness is independent of relative humidity and purely a function of the ambient (dry-bulb) temperature. Therefore, dry cooling towers are most effective in areas of low ambient temperature.

Plume-Abated Wet Cooling – There are several types of hybrid wet/dry cooling towers. One type is essentially a wet cooling tower with an additional dry section installed on top that reduces vapor plumes by heating the wet air from the wet section. This is done to reduce or eliminate the visible condensation plume.

Spray-Enhanced Dry Cooling – The second type of hybrid system is essentially a dry cooling tower that enhances heat transfer in the condenser tubes by spraying water on the outside of the tubes.

Hybrid Wet/Dry Cooling – A third type of hybrid system is a system designed for water conservation, which is usually a primarily dry system with a small wet capacity to provide additional cooling during the hottest periods of the year to mitigate hot-day capacity loses associated with all-dry systems.[12] However, a hybrid wet/dry system can be designed to different wet/dry proportions depending upon ambient conditions and on the amount of water conservation desired.

Once-through Cooling – Once-through cooling systems eliminate the cooling tower entirely by drawing cooling water from a water source (such as a river or the ocean), using the water to cool the condensers, and then discharging the heated water, usually back to the original water source.

Step 2 – Eliminate Technologically Infeasible Options

The next step in the top-down BACT procedure is to eliminate technologically infeasible options.

Recirculating Wet Cooling Tower – As shown in Table 3.1D-7 and Table 3.1D-8, the proposed technology, recirculating wet cooling towers equipped with high-efficiency (0.0005%) drift eliminators, has been achieved in practice.

[10] EPA, "Regulations Addressing Cooling Water Intake Structures for New Facilities," 66 FR 24, December 18, 2001.

[11] Hensley, John C., ed. 2006. *Cooling Tower Fundamentals*. SPX Cooling Technologies, Inc., 2006.

[12] EPRI. *Comparison of Alternate Cooling Technologies for U.S. Power Plants: Economic, Environmental, and Other Tradeoffs*, September 9, 2004.

Dry Cooling – USEPA has adopted standards for new facilities that draw cooling water from waters of the U.S.[13] The regulation established the best technology available for minimizing adverse environmental impacts associated with the use of cooling water intake structures.

As part of the rulemaking process, USEPA considered the technical issues, cost, and environmental impacts associated with replacing once-through cooling with recirculating cooling towers and dry cooling. USEPA rejected dry cooling as the best replacement technology due to all three of these factors. For the purposes of this BACT analysis, the technical issues are evaluated in this step. The environmental impacts and cost considerations of dry cooling are evaluated in the following step.

The three main technical issues associated with dry cooling towers are increased steam turbine backpressure, increased space needs, and increased downwash effects. Dry cooling results in increased steam turbine backpressure because of its inability to condense steam at 100% capacity on very hot days. For safety reasons, steam turbines are designed so that a plant shutdown will be triggered if backpressure limits are exceeded. The thermal inefficiency of dry cooling has caused turbine backpressure limits to be exceeded at existing plants, which in turn has triggered plant shutdowns. Because the potential for increased steam turbine backpressure is most severe when the ambient temperature is highest, the resulting plant shutdowns occur when electricity demand is at its peak.[14]

Another potential issue associated with dry cooling towers is space. Because dry cooling systems rely only on convective and radiant heat transfer, they require a significantly larger footprint compared to wet cooling towers. While the SEP project site is large, the usable area is highly space-constrained because of the project's proximity to the Blythe Airport. Therefore, it would be extremely difficult to install the required dry cooling capacity within the available space.

A third potential issue associated with dry cooling towers is increased downwash effects. When the wind blows over large structures, a wake effect on the leeward side of the building can pull the air down toward the ground, a meteorological condition known as building wake downwash. Because structures for dry cooling are much larger than comparable wet cooling towers, the downwash effect is potentially greater. Increased downwash can result in higher ambient concentrations from nearby emissions sources. This potential problem would be more acute at SEP, where the gas turbine stack height has been minimized to reduce potential impacts to aircraft.

For the purposes of this analysis, dry cooling was not eliminated as a potential BACT option due to increased turbine backpressure, space constraints, or downwash effects. It is likely that the space issue alone would prohibit the use of dry cooling at SEP; however, for purposes of this analysis, the technology has been presumed to be feasible. As shown in the next steps, the environmental and energy impacts of dry cooling preclude its selection as the appropriate BACT option.

Plume-Abated Wet Cooling Tower – Plume-abated cooling towers employ both a wet section and dry section and reduce or eliminate the visible plumes associated with wet cooling towers. In general, a plume-abated cooling tower is used only where a visible plume presents a threat to public safety by its interference with major infrastructure or in cases where the plume will block prominent landscape features or scenic coastal areas.[15]

Plume-abated wet cooling towers offer only insignificant changes in PM, $PM_{10,}$ and $PM_{2.5}$ emissions compared to wet cooling towers. After the warm, moist air passes through the drift eliminators of the wet section, it is mixed with warm dry air that passed through the dry section. This step speeds

[13] EPA 2001

[14] EPA 2001, p. 65283.

[15] EPRI 2004, pp. 5-2 – 5-3.

the evaporation that would normally occur after the plume was released. While most remaining liquid drift may be eliminated within the dry section of the cooling tower via evaporation, the particulate nuclei are not reduced or eliminated by any physical process and are exhausted through the top of the cooling tower.

Even though this option does not decrease PM emissions from the cooling tower, it also has not been deemed technologically infeasible as appropriate BACT for the SEP cooling tower. Thus, the environmental and economic impacts of this option are discussed in the following steps.

Spray-Enhanced Dry Cooling – A spray-enhanced hybrid cooling tower works essentially as a dry cooling tower that enhances heat transfer in the condenser tubes by spraying water on the outside of the tubes. The addition of the evaporating water spray can help alleviate the technical issues associated with dry cooling. Increased cooling decreases the likelihood of turbine backpressure events and may allow for fewer, more efficient dry cooling cells to be installed, thus shrinking the plant footprint required for the cooling tower. Therefore, this BACT option has not been deemed technologically infeasible; however, the same technical issues associated with dry cooling would render spray-enhanced dry cooling infeasible pursuant to a detailed engineering analysis.

Hybrid Wet/Dry Cooling – A hybrid wet/dry cooling system designed for water conservation uses dry cooling technology for most cooling needs, but employs a wet cooling system during peak load periods of high temperature to mitigate the losses in steam cycle capacity and plant efficiency associated with 100% dry cooling systems. To significantly reduce PM emissions over a full wet cooling tower design, the dry cooling portion of this type of hybrid system would need to be sized to handle the majority of the plant-cooling load. As a result, this design would be expected to have the same technical issues as those attributable to a 100% dry cooling design.

Once-through Cooling – Once-through cooling involves the water withdrawn from rivers, streams, lakes, reservoirs, estuaries, oceans, or other waters. In general, once-through cooling is technologically feasible only when a large surface water body exists in immediate proximity to the power plant. Since this situation does not exist for the SEP project, once-through cooling has been deemed a technologically infeasible BACT option and will not be further evaluated.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

The control technology options are ranked by control effectiveness in Table 3.1D-9. Once-through cooling was eliminated in Step 2.

Table 3.1D-9
Cooling Technologies Ranked by PM_{10} Control Effectiveness

Cooling Technology	Comments
Dry cooling	No PM_{10} emissions
Spray-enhanced dry cooling	Minimal PM_{10} emissions associated with evaporation of water spray
Hybrid wet/dry cooling	PM_{10} emissions depend upon relative size of wet and dry portions of hybrid system
Plume-abated wet cooling/ Wet cooling tower with high efficiency drift eliminators	No difference in PM_{10} emissions

Step 4 – Evaluate the Most Effective Control Technology Considering Environmental, Energy, and Cost Impacts

This step evaluates any source-specific environmental, energy, or economic impacts that demonstrate that the alternatives shown in Table 3.1D-9 are inappropriate as BACT.

Aside from the proposed BACT technology of a wet cooling tower with high-efficiency drift eliminators, the remaining technologies employ full or partial dry cooling in various ways.

Dry Cooling – In evaluating once-through cooling replacement technologies, USEPA determined that dry cooling costs are sufficient to pose a barrier to entry to the marketplace for some projected new facilities. Additionally, dry cooling was determined to have a detrimental effect on electricity production by reducing energy efficiency of steam turbines, also known as the "energy penalty."

The energy penalty results from the power producer utilizing more energy than would otherwise be required with recirculating wet cooling to produce the same amount of power. Dry cooling produces increased parasitic loads from larger recirculation pumps and fans required by dry cooling. Additionally, because the degree of cooling of the water affects the efficiency of the steam turbine, dry cooling can result in raising the overall heat rate of the power plant by increasing the backpressure to the steam turbine. These effects are discussed in further detail in Chapter 3 of the Technical Development Document for the 2001 NPDES Regulation. [16]

As a result of the analysis for the NPDES rule, USEPA concluded that energy penalties associated with dry cooling tower systems pose a significant feasibility problem in some climates. It follows that the energy penalty would be the highest in climates that exhibit (1) high ambient (dry bulb) temperatures, and (2) low relative humidity. As the ambient temperature increases, the convection rate between the hot water and the hot ambient air decreases in a dry cooling tower. Also, as relative humidity decreases, the rate of evaporation (which is responsible for 80% of the cooling) increases in a wet cooling tower. The opportunity cost of not using the most efficient cooling technology in a particular climate adds to the energy penalty. For the SEP project, it is noted that the energy penalty would be highest at the time of peak demand, i.e., summer heat episodes when the plant would theoretically be operating at its peak load.

In Chapter 3 of the USEPA's Technical Development Document, the mean annual performance penalty of a full dry cooling system relative to recirculating wet cooling tower was estimated in four separate US climates—Boston, Massachusetts; Jacksonville, Florida; Chicago, Illinois; and Seattle,

[16] EPA 2001, Technical Development Document for the Final Regulations Addressing Cooling Water Intake Structures for New Facilities, EPA-821-R-01-036, November 2001.

Washington. Of these climates, Jacksonville would most closely resemble the climate of Blythe due to its having the highest ambient temperatures.

The Technical Development Document calculated the total energy penalties of dry cooling by summing the individual penalties of turbine efficiency losses with increased energy usage by pumps and fans. In Table 3-15 of the Technical Development Document, the turbine efficiency losses of a dry cooling tower compared to a wet cooling tower were calculated to be 1.96% of the total electrical output of a combined cycle power plant operating in Jacksonville. This represents the annual average penalty experienced while the plant's steam turbine is operating at 67% of its maximum design load. In Table 3-20 of the Technical Development Document, the energy penalties of increased water pumping and fan usage were calculated to be 0.42% of the total electrical output of a combined cycle power plant (independent of location and turbine load). Therefore, the total energy penalty associated with dry cooling at a Jacksonville combined cycle power plant equals 2.38% of total electrical output.

Because of energy penalties, power plants using dry cooling burn more fuel and produce more air emissions per kilowatt-hour of energy produced. It should also be noted that the actual effect of the performance penalty would be to reduce SEP's peak production capacity on days when demand is highest, necessitating dispatch of other plants with even higher emissions.

The cost for a dry cooling system is also significantly higher than the cost for a wet cooling tower. The cooling alternative study prepared for the CEC in 2002 estimated a capital cost of $44.7 million for a new 500 MW power plant with a 170 MW steam cycle located in the California desert. [17] This compares with a comparable wet cooling system capital cost that ranged from $3.7 to $4.1 million. [18]

The prohibitive capital cost and energy penalty, along with the siting issues discussed earlier (size and potential downwash effects) eliminate dry cooling from consideration as BACT for this project.

Spray Enhanced Dry Cooling – As discussed in the previous step, spray-enhanced dry cooling causes lower turbine efficiency losses compared to a full dry cooling system. The additional pumps for water spray would increase fan and pump losses by a small degree. The effectiveness of the water spray in recovering a portion of the energy penalties was evaluated in an EPRI study. [19] The report conducted empirical testing on a single dry cooling cell located at the Crockett Cogeneration Co. located in Crockett, California. The report concluded that during hot and dry periods (over 100° F), spray enhancement could reduce the temperature of the airflow through the cooling tower by as much as 75% of the wet bulb depression, or about 18° F. The corresponding reduction of steam turbine backpressure was determined using a curve of ambient temperature versus backpressure, and the corresponding increase in plant efficiency was determined using a curve of turbine backpressure versus electrical output. The overall conclusion of the study was that under certain conditions, approximately half of the turbine's lost output could be restored. [20]

The capital cost for spray-enhanced dry cooling would be higher than the capital cost of dry cooling alone, the PM_{10} emissions would be higher, and the siting issues would be the same. Therefore, spray-enhanced dry cooling is also eliminated as BACT for this project.

Hybrid Wet/Dry Cooling – The degree of PM_{10} emissions reduction achievable by a hybrid wet/dry cooling system depends on how much of the cooling load each portion of the system is designed to

[17] EPRI 2002, Figure 5-11.

[18] EPRI 2002, Table 5-18.

[19] EPRI, "Spray Enhancement of Dry Air-Cooled Condensers," prepared by the Electric Power Research Institute for the California Energy Commission, September 2003.

[20] Ibid, p. 7-8.

achieve. A system designed to carry most of the cooling load in the dry system would have lower water use and PM_{10} emissions but would have a higher capital cost as well the siting issues (size and potential downwash effects) associated with a full dry cooling system. A system designed to carry more of the cooling load in the wet system would not attain the degree of PM_{10} emission reduction achievable with a system designed for a higher dry cooling load, but would also be significantly more expensive and would have a higher energy demand than a wet cooling tower. Therefore, a hybrid wet/dry cooling system is also eliminated as BACT for this project.

Plume-Abated Wet Cooling – A plume-abated wet cooling tower is no more effective in eliminating drift and particulate matter compared to a wet cooling tower. For this reason, a plume abated cooling tower is ranked lower than a wet cooling tower for PM_{10} BACT purposes. However, the addition of a plume abatement section would require the tower to be taller. In addition, the initial capital cost of a plume-abated tower was found to be as much as 2 to 3 times higher than the cost of a conventional wet cooling tower.[21] Visible vapor plumes are most problematic under very cold and/or humid conditions, and these conditions rarely if ever occur at the plant site. Since this technology is no more effective than the proposed technology in reducing PM emissions, is not needed for safety reasons, and has higher costs and potentially higher environmental impacts due to its taller height, it is eliminated from consideration and no further analysis is necessary.

Step 5 – Select BACT

Based upon the above information, BACT is use of a high-efficiency drift eliminator with a drift rate of 0.0005% or less. The proposed cooling tower complies with this BACT level.

3.1.5 BACT for the Emergency Engine

3.1.5.1 Normal Operations

The emission unit for which BACT is being considered is a nominal 238 HP Tier 3 Clarke Diesel engine driving a fire pump. Potential control levels were identified by searching the following sources for BACT determinations pertaining to emergency Diesel fire pump engines:

- VCAPCD BACT Guidance;
- SCAQMD BACT Guidelines;
- SJVAPCD BACT Clearinghouse;
- BAAQMD BACT Guidelines; and
- EPA Reasonably Available Control Technology (RACT)/BACT/ Lowest Achievable Emission Rate (LAER) Clearinghouse.

3.1.5.2 NOx EMISSIONS

Step 1 – Identify All Possible Control Technologies

Listed below are the technologies for control of NOx that were identified as a result of review of sources of BACT determinations.

- Combustion process modifications. Design features that minimize emissions include electronic fuel/air ratio and timing controllers, pre-chamber ignition, and intercoolers. These design features form the basis for EPA's Tier emission standards and are therefore considered the baseline case for purposes of the BACT analysis.

[21] TetraTech, "California's Coastal Power Plants: Alternative Cooling System Analysis," prepared for California Ocean Protection Council, February 2008. Chapter 4, Section 3.5.2.

- Selective Catalytic Reduction (SCR): This is an add-on control technology that reduces NOx emissions by reaction with ammonia in the presence of a catalyst.
- Non-selective Catalytic Reduction (NSCR): Similar to automobile catalytic converters, this is an add-on control technology that reduces NOx emissions by reacting NOx with CO and hydrocarbons to form CO_2, N_2, and H_2O. This catalyst requires a fuel-rich exhaust to work and is therefore not applicable to Diesel engines, which operate in a lean-burn mode.

Step 2 – Eliminate Technologically Infeasible Options

As discussed in Step 1, NSCR is not technologically feasible for a lean-burn IC engine. It was therefore eliminated from consideration for BACT for this application.

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

The most recent NOx BACT listings for Diesel emergency fire pump engines in this size range are summarized in Table 3.1D-10. The most stringent NOx limit in these recent BACT determinations is a 3.0 gm/hp-hr limit, based on compliance with applicable EPA Tier 3 standards and the federal NSPS Subpart IIII.

Table 3.1D-10
Recent NOx BACT Determinations for Emergency Compression-Ignition Engines

Facility	District	NOx Limit[a,b]	Control Method Used	Date Permit Issued	Source
Power Systems	SCAQMD	3.9	Engine Designed to meet EPA Tier 2	11/6/2003	SCAQMD BACT (A/N 417691)
General Guidelines	SCAQMD	3.0 (Tier 3 limit)	Engine Designed to meet EPA Tier 3	10/3/2008[c]	SCAQMD guidelines for non-major facilities
BACT Handbook	BAAQMD	3.0 (CARB ATCM)	Engine Designed to meet EPA Tier 3	12/22/2010	BAAQMD BACT guideline 96.1.3
BACT Guidelines	SJVAPCD	6.9	Engine Design	6/30/2001	SJVAPCD BACT Guideline 3.1.4
Moundsville Power LLC	West Virginia	3.0	251 hp engine Engine Design	1/6/2015	EPA RBL Clearinghouse
Energy Answers Arecibo LLC	Puerto Rico	3.0[d] (Tier 3 limit)	Engine Design	4/10/2014	EPA RBL Clearinghouse
ARB ATCM		3.0	Engine Design	5/19/2011	H&SC 93115.6(a)(4), Table 2
Federal NSPS	Subpart IIII	3.0	Engine Designed to meet EPA Tier 3		40 CFR 60.4205, Table 4 to Subpart IIII

Notes:
a. All concentrations expressed as grams per horsepower-hour (g/hp-hr).
b. For Tier 2 and Tier 3 limits, values are for NOx + NMHC.
c. Revision date for guideline.
d. NOx limit is 2.85 g/hp-hr and VOC limit is 0.15 g/hp-hr.

Step 4 – Evaluate the Most Effective Control Technology Considering Environmental, Energy, and Cost Impacts

The most stringent limit in Table 3.1D-10 is the EPA Tier 3 limit. Engine manufacturers are using a combination of techniques, including incorporation of exhaust control techniques as part of the basic engine, to achieve this limit. For this reason, an engine capable of achieving EPA Tier 3 limits is the most effective control technology considering environmental, energy, and cost impacts.

Step 5 – Determine BACT/Present Conclusions

BACT must be at least as stringent as the most stringent level achieved in practice, federal NSPS, or district prohibitory rule. Based upon the results of this analysis, the NOx emission rate of 3.0 g/hp-hr required to meet EPA Tier 3 requirements is BACT. Although the fire pump engine at the Energy Answers Arecibo plant is shown as having a lower NOx emission rate, this emission rate is based on a manufacturer certification rate and does not reflect actual test data for the engine. Therefore, BACT for NOx for this application is any technology capable of achieving the Tier 3 NSPS limit.

The engine selected for this project is equipped with advanced combustion controls and is certified to meet Tier 3 standards with a NOx emission rate of 2.56 gm/hp-hr. Therefore the engine complies with BACT for NOx.

Appendix 3.1E
Modeling Protocol and Related Correspondence

sierra research

Air Dispersion Modeling and Health Risk Assessment Protocol

Kananaskis Energy Project

Blythe, California

Submitted to:

Mojave Desert Air Quality Management District
(for an Application for an Authority to Construct/ Determination of Compliance)

California Energy Commission
(for an Application for Certification)

prepared for:

Altagas Kananaskis Energy Project

September 2014

prepared by:

Sierra Research, Inc.
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Air Dispersion Modeling and Health Risk Assessment Protocol
Kananaskis Energy Project
Blythe, California

Submitted to:

Mojave Desert Air Quality Management District
(for an Application for an Authority to Construct and Determination of Compliance)

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Air Dispersion Modeling and Health Risk Assessment Protocol
Kananaskis Energy Project

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Appendix A – Information on CTSCREEN Model

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1. INTRODUCTION

This protocol describes the modeling procedures that will be used to determine the ambient air impacts from the Kananaskis Energy Project (also referred to herein as "KEP" or "the Project"). These procedures will be used in the ambient air quality impact assessment and screening health risk assessment that will be submitted to the Mojave Desert Air Quality Management District (MDAQMD, or District) as part of an application for Final Determination of Compliance and Authority to Construct, and to the California Energy Commission as part of an Application for Certification.

2. FACILITY DESCRIPTION AND SOURCE INFORMATION

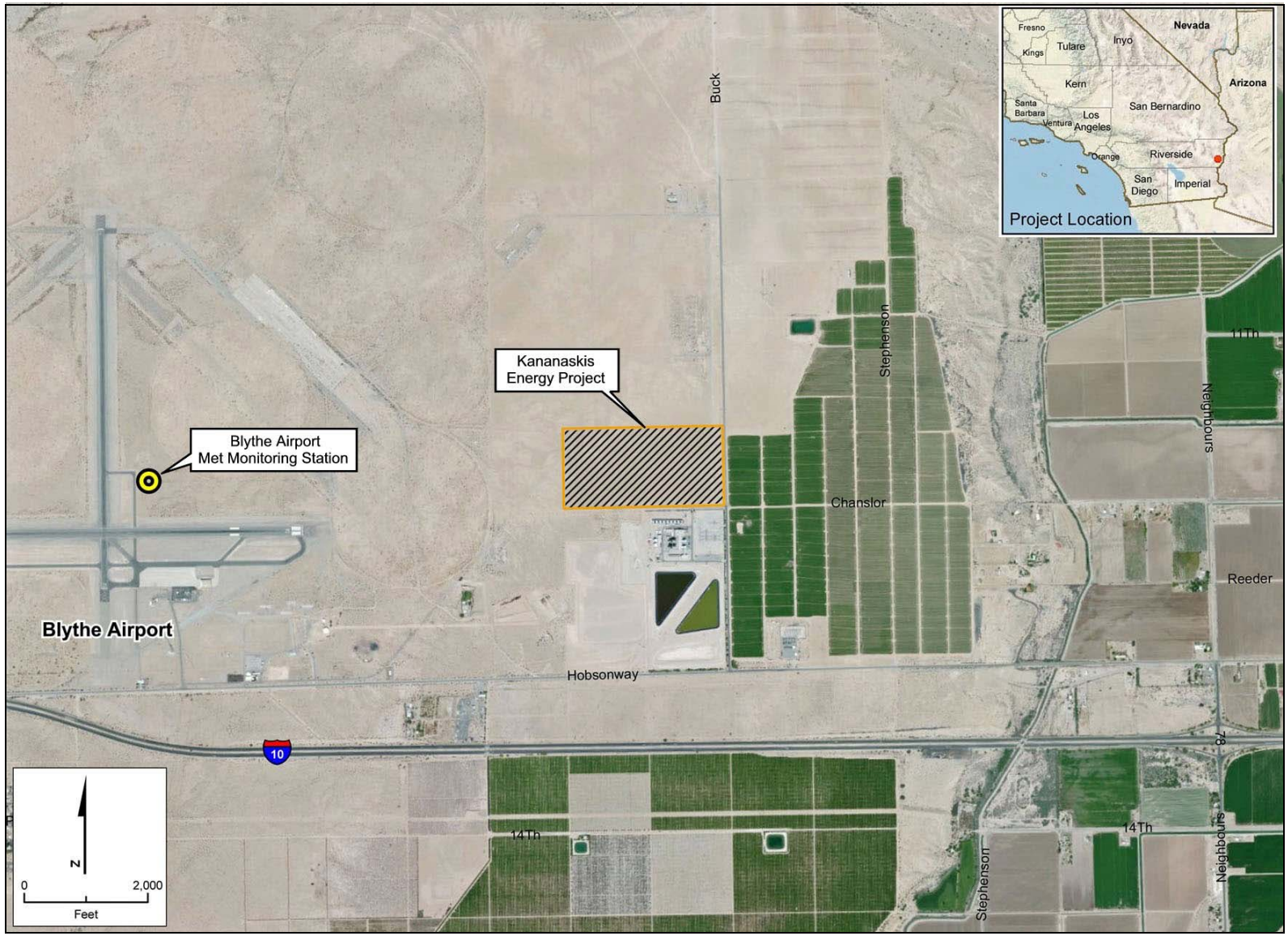
The Kananaskis Energy Project (KEP or Project) will consist of six natural gas-fired General Electric LMS100 PB simple-cycle combustion turbines, one natural gas-fired LM6000 PF SPRINT simple-cycle combustion turbine, a water treatment and storage system, a storm water retention pond, an aqueous ammonia storage tank, and ancillary facilities. The Project will utilize a hybrid partial dry cooling system to minimize water use. KEP will be located on a 76-acre site in an unincorporated area of Riverside County, near the City of Blythe. The property is located adjacent to the existing, operational Blythe Energy Project[1] and the site of the licensed Blythe Energy Project Phase II.[2] Figure 1 shows the general location of the Project.

The proposed new gas turbine units will be equipped with Best Available Control Technology (BACT). BACT will include dry low-NOx (DLE) combustion technology for the gas turbines, selective catalytic reduction (SCR), oxidation catalysts, and use of clean-burning natural gas fuel. The operating schedule for the new gas turbine units will vary and may range from no operation during the winter months to potentially 24 hours of operation per day during the summer months. The modeling analysis will be performed for the worst-case (maximum expected equipment operation) operating hour, operating day, and operating year. The modeling analysis will include a complete description of the new equipment, including the worst-case hourly, daily, and annual operating schedules used for the analysis.

The Proposed Project is also expected to trigger Prevention of Significant Deterioration (PSD) review for criteria pollutants and greenhouse gases. The MDAQMD is in the process of obtaining delegation from EPA to implement PSD permitting for criteria air pollutants and GHG. Depending on the timing of this delegation, it may be necessary to file a separate PSD permit application with EPA Region 9.

[1] 99-AFC-8C
[2] 02-AFC-1C

Figure 1
Location of the Proposed Project



3. DISPERSION MODELING PROCEDURES

The air quality modeling analysis will follow the March 2009 U.S. Environmental Protection Agency (USEPA) AERMOD Implementation Guide (USEPA, 2009) and USEPA's "Guideline on Air Quality Models" (USEPA, 2005).

3.1 AERMOD Modeling

The following USEPA air dispersion models are proposed for use to quantify pollutant impacts on the surrounding environment based on the emission sources' operating parameters and their locations:

- American Meteorological Society/Environmental Protection Agency Regulatory Model Improvement Committee (AERMIC) model, also known as AERMOD (Version 14134);
- Building Profile Input Program – Plume Rise Model Enhancements (BPIP-PRIME, Version 04274); and
- SCREEN3 (Version 96043).

The main air dispersion modeling will be conducted with the latest version of AERMOD, USEPA's preferred/recommended dispersion model for new source review and PSD air quality impact assessments. AERMOD can account for building downwash effects on dispersing plumes. Stack locations and heights and building locations and dimensions will be input to BPIP-PRIME. The first part of BPIP-PRIME determines and reports on whether a stack is being subjected to wake effects from a structure or structures; the second part calculates direction-specific building dimensions for each structure, which are used by AERMOD to evaluate wake effects. The BPIP-PRIME output is formatted for use in AERMOD input files.

AERMOD requires hourly meteorological data consisting of wind direction and speed (with reference height), temperature (with reference height), Monin-Obukhov length, surface roughness length, heights of the mechanically and convectively generated boundary layers, surface friction velocity, convective velocity scale, and vertical potential temperature gradient in the 500-meter layer above the planetary boundary layer.

Standard AERMOD control parameters will be used, including stack tip downwash, non-screening mode, non-flat terrain, and sequential meteorological data check. The stack-tip

downwash algorithm will be used to adjust the effective stack height downward following the methods of Briggs (1972) for cases where the stack exit velocity is less than 1.5 times the wind speed at stack top. The rural option will be used by not invoking the URBANOPT option.[3]

If more detailed evaluation of impacts at receptors in terrain above stack-top height is required, the screening version of the USEPA guideline Complex Terrain Dispersion Model PLUS (CTDMPLUS)—Complex Terrain Screening Model (CTSCREEN)—would be used. The CTSCREEN model is discussed in more detail in Appendix A.

3.1.1 Ambient Ratio Method and Ozone Limiting Method

Annual nitrogen dioxide (NO_2) concentrations will be calculated using the Ambient Ratio Method (ARM), originally adopted in Supplement C to the Guideline on Air Quality Models (USEPA, 1995) with a revision issued by EPA in March 2011.[4] The Guideline allows a nationwide default of 75% for the conversion of nitric oxide (NO) to NO_2 on an annual basis[5] and the calculation of NO_2/NOx (nitrogen oxide) ratios.

If NO_2 concentrations need to be examined in more detail, the Ozone Limiting Method (OLM) (Cole and Summerhays, 1979), implemented through the "OLMGROUP ALL" option in AERMOD (USEPA, 2011a), will be used. AERMOD OLM will be used to calculate the NO_2 concentration based on the OLM method and hourly ozone data. Contemporaneous hourly ozone data collected at the nearby Blythe monitoring station will be used in conjunction with OLM to calculate hourly NO_2 concentrations from modeled hourly NOx concentrations.

Part of the NOx in the gas turbine exhaust is converted to NO_2 during and immediately after combustion. The remainder of the NOx emissions is assumed to be in the form of NO. For the new gas turbines, we will use the same NO_2/NOx ratios for the OLM analysis (discussed in more detail below) as those accepted by the SDAPCD for permitting of the Apex Pio Pico and NRG Carlsbad Energy Center projects (13% during normal operating hours, 24% during startup/shutdown periods, and 24% during commissioning tests when SCR is not fully operational).[6]

As the exhaust leaves the stack and mixes with the ambient air, the NO reacts with ambient ozone (O_3) to form NO_2 and molecular oxygen (O_2). The OLM assumes that at any given receptor location, the amount of NO that is converted to NO_2 by this oxidation reaction is proportional to the ambient O_3 concentration. If the O_3 concentration is less than the NO

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[3] The rural vs. urban option in AERMOD is primarily designed to set the fraction of incident heat flux that is transferred into the atmosphere. This fraction becomes important in urban areas having an appreciable "urban heat island" effect due to a large presence of land covered by concrete, asphalt, and buildings. This situation does not exist for the project site.

[4] "Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 NAAQS", Office of Air Quality Planning and Standards, Research Triangle Park, NC, March 1, 2011.

[5] USEPA, "New NO_2 Modeling Guidance," August 12, 2014. Available at *http://www.epa.gov/ttn/scram/webinar/AERMOD_14134-NO2_Memo/20140812-Webinar_Slides.pdf.*

[6] If the final project design includes a Diesel emergency firepump engine and/or a Diesel emergency generator, we will use a NO_2/NOx ratio discussed in Appendix B.

concentration, the amount of NO_2 formed by this reaction is limited. However, if the O_3 concentration is greater than or equal to the NO concentration, all of the NO is assumed to be converted to NO_2.

A detailed discussion of OLM modeling and how OLM modeling results and monitored background NO_2 will be combined is provided in Sections 3.6.3 and 3.6.4.

3.1.2 $PM_{2.5}$

$PM_{2.5}$ impacts will be modeled in accordance with USEPA guidance (USEPA, 2010a). A detailed discussion of how modeled $PM_{2.5}$ impacts will be evaluated is provided in Section 3.6.

3.2 Fumigation Modeling

The SCREEN3 model will be used to evaluate inversion breakup fumigation impacts for short-term averaging periods (24 hours or less), as appropriate. The methodology in "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised" (USEPA, 1992b) will be followed for these analyses. Combined impacts for all sources under fumigation conditions will be evaluated, based on USEPA modeling guidelines.

3.3 Health Risk Assessment Modeling

A health risk assessment (HRA) will be performed according to California Air Resources Board (CARB) guidance. The HRA modeling will be prepared using CARB's Hotspots Analysis and Reporting Program (HARP) computer program (Version 1.4f, May 2012 using the latest HARP Health Database table updated in November 2013) and AERMOD with the CARB "on-ramp."[7] HARP will be used to assess cancer risk as well as non-cancer chronic and acute health hazards.

3.4 Meteorological Data

Meteorological data are required from two different types of monitoring locations: surface data that are representative of meteorological conditions near the earth, and upper air data that are representative of meteorological conditions well above the earth's surface.

There are many factors that go into a determination that meteorological data is "representative" of conditions in an area. Determinations are made on a case-by-case

[7] HARP has not yet been revised to utilize AERMOD, but CARB has developed "on-ramp" software that allows HARP to incorporate AERMOD output files. Therefore, HARP is now compatible with AERMOD.

basis, following EPA guidance. EPA's meteorological monitoring guidance for permit modeling[8] states:

> "Issues of representativeness will always involve case-by-case subjective judgments; consequently, experts knowledgeable in meteorological monitoring and air quality modeling should be included in the site selection process. The following information is provided for consideration in such decisions…
>
> - Although proximity of the meteorological monitoring site is an important factor, representativeness is not simply a function of distance. In some instances, even though meteorological data are acquired at the location of the pollutant source, they may not correctly characterize the important atmospheric dispersion conditions; e.g., dispersion conditions affecting sources located on the coast are strongly affected by off-shore air/sea boundary conditions - data collected at the source would not always reflect these conditions.
>
> - Representativeness is a function of the height of the measurement. For example, one can expect more site-to-site variability in measurements taken close to the surface compared to measurements taken aloft. As a consequence, upper-air measurements are generally representative of much larger spatial domains then are surface measurements…"

A five-year meteorological dataset (2009–2013) will be processed in AERMET (Version 14134) to generate AERMOD-compatible meteorological data for air dispersion modeling. The surface meteorological data were recorded at the nearby Blythe Airport monitoring station, and the upper air data were recorded at Elko, NV (WBAN No. 04105). Figure 1 above shows the relative locations of the project site and the meteorological monitoring station at the Blythe Airport. The Blythe Airport monitoring station is less than 3 km (less than 2 miles) from the project site with no intervening terrain, so surface meteorological data collected there are clearly representative of meteorological conditions at the site.

EPA defines the term "on-site data" to mean data that would be representative of atmospheric dispersion conditions at the source and at locations where the source may have a significant impact on air quality. Specifically, the meteorological data requirement originates in the Clean Air Act at Section 165(e)(1), which requires an analysis "of the ambient air quality at the proposed site and in areas which may be affected by emissions from such facility for each pollutant subject to regulation under [the Act] which will be emitted from such facility."

This requirement and EPA's guidance on the use of on-site monitoring data are also outlined in the "On-Site Meteorological Program Guidance for Regulatory Modeling

[8] U.S. EPA, "Meteorological Monitoring Guidance for Regulatory Modeling Applications," EPA-454/R-99-005, February 2000; available at *http://www.epa.gov/ttn/scram/guidance/met/mmgrma.pdf*.

Applications" (USEPA, 1987a). The representativeness of the data depends on (a) the proximity of the meteorological monitoring site to the area under consideration, (b) the complexity of the topography of the area, (c) the exposure of the meteorological sensors, and (d) the period of time during which the data are collected.

Representativeness has also been defined in "The Workshop on the Representativeness of Meteorological Observations" (Nappo et. al., 1982) as "the extent to which a set of measurements taken in a space-time domain reflects the actual conditions in the same or different space-time domain taken on a scale appropriate for a specific application." Representativeness is best evaluated when sites are climatologically similar, as are the project site and the Blythe Airport meteorological monitoring station.

Representativeness has additionally been defined in the PSD Monitoring Guideline (USEPA, 1987b) as data that characterize the air quality for the general area in which the Proposed Project would be constructed and operated. Because of the close proximity of the Blythe meteorological data site to the project site (distance between the two locations is approximately 2.8 km, or 1.74 miles), the same large-scale topographic features that influence the meteorological data monitoring station also influence the project site in the same manner.

There are few locations where upper air data are available; when looking at the representativeness of upper air data, the most important factors are distances relative to large urbanized areas and coastal zones. The Elko upper air monitoring station was selected because it is the nearest station with complete and representative upper air data for the five-year period. The Elko monitoring station is located in the Nevada desert, 810 km (500 miles) from the project site. The San Diego upper air station (located at Miramar Naval Air Station) is closer to the project site (246 km, or 153 miles), but because of the coastal location of the Miramar monitoring station, we do not believe that upper air data collected there would be representative of atmospheric conditions at the project site. Upper air data is also available from Tucson, AZ, 388 km (241 miles) from the project site. However, an assessment of the upper air data from Tucson reveals that missing surface data in the soundings in the period 2009-2011 to make it impossible for the full five-year dataset to meet EPA completeness criteria (that is, less than 10% of missing readings on a quarterly basis). In addition, the Tucson location is significantly more urbanized than the project area.

Thus, we determine that the meteorological data from these monitoring stations are representative of conditions at the Project site.

3.5 Receptor Grids

Receptor and source base elevations will be determined from USGS National Elevation Dataset (NED) data in the GeoTIFF format at a horizontal resolution of 1 arc-second (approximately 30 meters). All coordinates will be referenced to UTM North American Datum 1983 (NAD83), Zone 11. The AERMOD receptor elevations will be interpolated among the DEM nodes according to standard AERMAP procedure. For determining

concentrations in elevated terrain, the AERMAP terrain preprocessor receptor-output (ROU) file option will be chosen.

Cartesian coordinate receptor grids will be used to provide adequate spatial coverage surrounding the project area for assessing ground-level pollution concentrations, to identify the extent of significant impacts, and to identify maximum impact locations. A 250-meter resolution coarse receptor grid will be developed and will extend outwards at least 10 km (or more if necessary to establish the significant impact area).

For the full impact analyses, a nested grid will be developed to fully represent the maximum impact area(s). The receptor grid will be constructed as follows:

1. One row of receptors spaced 25 meters apart along the facility's fence line;

2. Four tiers of receptors spaced 25 meters apart, extending 100 meters from the fence line;

3. Additional tiers of receptors spaced 100 meters apart, extending from 100 meters to 1,000 meters from the fenceline; and

4. Additional tiers of receptors spaced 250 meters apart, out to at least 10 km from the most distant source modeled, not to exceed 50 km from the project site.

Additional refined receptor grids with 25-meter resolution will be placed around the maximum first-high or maximum second-high coarse grid impacts and extended out 1,000 meters in all directions. Concentrations within the facility fenceline will not be calculated.

3.6 Ambient Air Quality Impact Analyses (AQIA)

Emissions from the Proposed Project will result from combustion of fuel in the gas turbines and from the hybrid partial dry cooling systems. These emission sources will be modeled as point sources. The expected emission rates will be based on vendor data and additional conservative assumptions of equipment performance.

The purpose of the ambient air quality impact analysis is to demonstrate compliance with applicable ambient air quality standards. Both USEPA and the District have regulations that prohibit construction of a project that will cause or contribute to violations of applicable standards.

Based on EPA guidance, if, for a given pollutant and averaging time, the project's impact is below the Significant Impact Levels (SILs) shown in Table 1, the project's impact is deemed to be *de minimis*, and no further analysis is required. However, if the modeled impacts exceed any of the significance thresholds displayed in Table 1, the project has the

Table 1 Significant Impact Levels for Air Quality Impacts in Class II Areas (µg/m^3)					
	Averaging Period				
Pollutant	Annual	24-hour	8-hour	3-hour	1-hour
NO_2	1	--	--	--	7.5[9]
SO_2	1	5	--	25	7.8[10]
CO	--	--	500	--	2000
PM_{10}	1	5	--	--	--
$PM_{2.5}$[10]	0.3	1.2	--	--	--

potential to cause or contribute to a violation of the ambient air quality standard at the times and locations where the threshold is exceeded. In that case, the analysis must consider the contribution of other sources to the ambient concentration. If the analysis indicates that there will be a violation of an ambient air quality standard, and the project's impact at the time and place of the violation is significant, then the project may not be approved unless the project's impact is reduced.

An air quality impact analysis is required for certification by the CEC and to support the air quality impact analysis, PSD analysis, and screening health risk assessment that are required by the District. Each agency has its own criteria for preparation of the air quality impact analysis; however, the criteria used by the CEC and the District are similar enough that the same basic analysis, with some variations, will satisfy both agencies.

3.6.1 Step 1: Project Impact

The first step in the compliance demonstration is to determine, for each pollutant and averaging period, whether the proposed new equipment for the project has the potential to cause a significant ambient impact at any location, under any operating or meteorological conditions. As indicated in the NSR Workshop Manual,[11] "[i]f the significant net emissions increase from a proposed source would not result in a significant ambient impact anywhere, the application is usually not required to go beyond a preliminary analysis in order to make the necessary showing of compliance for a particular pollutant." The EPA significance levels for air quality impacts are shown in Table 1. If the

[9] EPA has not yet defined significance levels (SILs) for one-hour NO_2 and SO_2 impacts. However, EPA has suggested that, until SILs have been promulgated, interim values of 4 ppb (7.5 µg/m^3) for NO_2 and 3 ppb (7.8 µg/m^3) for SO_2 may be used (USEPA (2010c); USEPA (2010d)). These values will be used in this analysis as interim SILs.

[10] In January 2013, the D.C. Circuit Court of Appeals ruled that the $PM_{2.5}$ SIL could not be used as a definitive exemption from the requirements to perform $PM_{2.5}$ preconstruction monitoring or a $PM_{2.5}$ increments analysis or AQIA. However, EPA's March 2013 interpretation of the Court's decision indicated that the SIL can be used as guidance.

[11] USEPA (1990), p. C.51.

maximum modeled impact for any pollutant and averaging period is below the appropriate significance level in this table, no further analysis is necessary.[12]

Based on the following USEPA (2010e) guidance, no further analysis is necessary for any location where the modeled impacts from the project alone are below the significance thresholds.

> *The primary purpose of the SILs is to identify a level of ambient impact that is sufficiently low relative to the NAAQS or increments that such impact can be considered trivial or de minimis. Hence, the EPA considers a source whose individual impact falls below a SIL to have a de minimis impact on air quality concentrations that already exist. Accordingly, a source that demonstrates that the projected ambient impact of its proposed emissions increase does not exceed the SIL for that pollutant at a location where a NAAQS or increment violation occurs is not considered to cause or contribute to that violation. In the same way, a source with a proposed emissions increase of a particular pollutant that will have a significant impact at some locations is not required to model at distances beyond the point where the impact of its proposed emissions is below the SILs for that pollutant. When a proposed source's impact by itself is not considered to be "significant," EPA has long maintained that any further effort on the part of the applicant to complete a cumulative source impact analysis involving other source impacts would only yield information of trivial or no value with respect to the required evaluation of the proposed source or modification.*[13]

For $PM_{2.5}$, the highest average of the maximum annual averages and of the 24-hour averages modeled over the five years of meteorological data will be compared with the SILs in Table 1 to determine whether the modeled $PM_{2.5}$ project impacts are significant.[14] For other pollutants, the highest modeled concentrations will be compared with the SILs. For pollutants with modeled project impacts below the significance thresholds, a summary table will show the maximum modeled project impacts plus background concentrations. Although this information is not required by federal modeling guidance, it will be provided as part of the CEQA analysis.

3.6.2 Step 2: Project Plus Background

Pollutants/averaging periods that are not screened out in Step 1 are required to undergo a full air quality impact analysis. In Step 2, the ambient impacts of the project are modeled and added to background concentrations. The results are compared to the relevant state and federal ambient standards.

[12] With the potential exception of the $PM_{2.5}$ SILs. See footnote 10.
[13] USEPA (2010e), p. 64891.
[14] USEPA (2010a), p. 6.

The second step of the compliance demonstration is required to show that the proposed new project, in conjunction with existing sources, will not cause or contribute to a violation of any ambient air quality standard. As discussed in more detail below, the impacts of existing sources are represented by the existing ambient air quality data collected at the monitoring stations shown in Table 2. In accordance with Section 8.2.1 of Appendix W to 40 CFR Part 51:

> *Background concentrations are an essential part of the total air quality concentration to be considered in determining source impacts. Background air quality includes pollutant concentrations due to: (1) Natural sources; (2) nearby sources other than the one(s) currently under consideration; and (3) unidentified sources. Typically, air quality data should be used to establish background concentrations in the vicinity of the source(s) under consideration.*

If a Step 2 analysis is required, the modeled impacts from the Proposed Project will be added to the representative background concentration for comparison with the California and National Ambient Air Quality Standards (CAAQS and NAAQS). In accordance with USEPA guidelines,[15] the highest second-highest modeled concentrations will be used to demonstrate compliance with the short-term federal standards (except for the statistically based federal one-hour NO_2 and SO_2, and 24-hour $PM_{2.5}$, standards) and the highest modeled concentration will be used to demonstrate compliance with the federal annual standards and all state standards. If the predicted total ground-level concentration is below the state or federal ambient air quality standard for each pollutant and averaging period, no further analysis is required for that pollutant and averaging period.

3.6.3 Compliance with Statistically Based Standards

For the one-hour average federal NO_2 standard for the District and CEC analyses, the comparison of impacts with the new federal one-hour standard will be done in accordance with Appendix W of Part 51 of Title 40 of the CFR "Guideline on Air Quality Models" and the tiered process presented in "Modeling Compliance of the Federal 1-Hour NO_2 NAAQS" (CAPCOA guidance document, 2011)[16] together with clarification as provided by the 2011 Tyler Fox memorandum.[17] Appendix W of Part 51 of Title 40 of the CFR "Guideline on Air Quality Models" has codified three methods that can be used to estimate NO_2 concentration (Tier 1 - Total Conversion, Tier 2 - Ambient Ratio Method or ARM, Tier 3 - Ozone Limiting Method or OLM). According to USEPA guidance (USEPA, 2011a):

[15] USEPA (2005), 11.2.3.2 and 11.2.3.3

[16] California Air Pollution Control Officers Association, "Modeling Compliance of The Federal 1-Hour NO_2 NAAQS," October 27, 2011. Available at http://www.valleyair.org/busind/pto/Tox_Resources/CAPCOANO2GuidanceDocument10-27-11.pdf.

[17] U.S. EPA. "Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NOx National Ambient Air Quality Standard," Tyler Fox, March 1, 2011.

While the limited scope of the available field study data imposes limits on the ability to generalize conclusions regarding model performance, these preliminary results of hourly NO_2 predictions for Palau and New Mexico show generally good performance for the PVMRM and OLM/OLMGROUP ALL options in AERMOD. We believe that these additional model evaluation results lend further credence to the use of these Tier 3 options in AERMOD for estimating hourly NO_2 concentrations, and we recommend that their use should be generally accepted provided some reasonable demonstration can be made of the appropriateness of the key inputs for these options, the in-stack NO_2/NOx ratio and the background ozone concentrations.[18]

As discussed above, for the new gas turbines the in-stack NO_2/NOx ratios will be consistent with the ratios used during the permitting of the NRG Carlsbad Energy Center and Apex Pio Pico Projects.[19] Background ozone concentrations in the project area will be represented by five years of ozone data (2009–2013) collected at Blythe concurrently with the meteorological data. Based on these factors, we propose to use the Tier 3, "OLMGROUP ALL," option for modeling 1-hour NO_2 concentrations.

For demonstrating compliance with the statistically based federal one-hour NO_2 standard, CAPCOA's 2011 guidance document (CAPCOA, 2011) provides 11 progressively more sophisticated methods for combining modeled NO_2 concentrations with background (or monitored) NO_2. These methods, outlined below, were developed to allow demonstration of compliance using the lowest amount of resources necessary. Each tier is a progressively more sophisticated and comprehensive analysis that reduces the level of conservatism without reducing the level of assurance of compliance.

1. Significant Impact Level (SIL) – no background required
2. Max modeled value + max monitored value
3. Max modeled value + 98th pctl monitored value
4. 8th highest modeled value + max monitored value
5. 8th highest modeled value + 98th pctl monitored value
6. (5 yr avg of 98th pctl modeled value) + max monitored value
7. (5 yr avg of 98th pctl of modeled value) + 98th pctl monitored value
8. 5 yr avg of 98th pctl of (modeled value + monthly hour-of-day – 1st high)
9. 5 yr avg of 98th pctl of (modeled value + seasonal hour-of-day – 3rd high)
10. 5 yr average of 98th pctl of (modeled value + annual hour-of-day - 8th high)
11. Paired-Sum: 5 yr avg of 98th pctl of (modeled value + background)

[18] The Plume Volume Molar Ratio Method (PVMRM) is considered by USEPA to be a Tier 3 screening method, similar to OLM. (USEPA, 2011a).

[19] If the project includes emergency engines, NO_2/NOx ratios of 18% and 14% will be used for the Diesel emergency firepump and black start engines, respectively. These ratios were provided by the San Diego APCD staff for the NRG Carlsbad Energy Center amendment application filed in May 2014.

Applicable definitions are provided below.

- *Significant Impact Level (SIL)* is defined as a de minimis impact level below which a source is presumed not to cause or contribute to an exceedance of a NAAQS (see Table 1 above).

- *Max modeled value* is defined as the maximum concentration predicted by the model at any given receptor in any given year modeled.

- *8th highest modeled value* is defined as the highest 8th-highest concentration derived by the model at any given receptor in any given year modeled.

- *5 yr avg of the 98th pctl* is defined as the highest of the average 8th highest (98th percentile) concentrations derived by the model across all receptors based on the length of the meteorological data period or the X years average of 98th percentile of the annual distribution of daily maximum one-hour concentrations across all receptors, where X is the number of years modeled. (In Appendix W, EPA recommends using five years of meteorological data from a representative National Weather Service site or one year of on-site data.)

- *Monthly hour-of-day* is defined as the three-year average of the 1st highest concentrations (Maximum Hourly) for each hour of the day.

- *Seasonal Hour-Of-Day* is defined as the three-year average of the 3rd highest concentrations for each hour of the day and season.

- *Annual hour-of-day* is defined as the three-year average of the 8th highest concentration for each hour of the day.

- *Paired-Sum* **(**5 yr avg of the 98th pctl) is the merging of the modeled concentration with the monitored values paired together by month, day, and hour. The sum of the paired values is then processed to determine the X-year average of the 98th percentile of the annual distribution of daily maximum one-hour concentrations across all receptors, where X is the number of years modeled.

For the demonstration of compliance with the federal one-hour NO_2 standard, we will perform analyses at as many of the following tiers as are needed to demonstrate compliance with the state and federal ambient air quality standards: Tier 1, Tier 2, Tier 7, Tier 8, Tier 9, Tier 10, and Tier 11. Hourly NO_2 background data (for the same five years of meteorological data used for the modeling—2009 to 2013) may also be used in order to refine the NAAQS analysis both spatially and temporally. In the event of missing hourly NO_2 data, the missing data procedures described in Section 3.7.1 will be followed to fill in gaps in the hourly NO_2 data. To account for recently permitted nearby stationary sources that are not reflected in the background NO_2 data, we will review the list of projects provided by the MDAQMD (the request for these projects is discussed in Section 3.10) and model the impacts from projects with a NOx net emission increase

greater than 5 tons/year (excluding intermittently operated equipment per EPA guidance).[20] The nearby BEP project will be included in the modeled background as its emissions would not be monitored at the NO_2 background station.

The demonstration of compliance with the federal one-hour SO_2 standard will follow the same steps, except that it will utilize the 99th percentile predicted one-hour average SO_2 concentrations instead of the 98th percentile.

For the 24-hour average federal $PM_{2.5}$ standard for the District and CEC analyses, the comparison of impacts with the federal 24-hour average standard will be done in accordance with USEPA March 23, 2010 guidance (USEPA, 2010a). This guidance calls for basing the initial determination of compliance with the standard on the five-year average of the highest modeled annual and 24-hour averages, combined with background concentrations based on the form of the standards (the three-year average of the annual $PM_{2.5}$ concentrations and the three-year average of the 98th percentile 24-hour averages).[21] If a more detailed assessment of $PM_{2.5}$ impacts is required, a Tier 2 analysis will be performed. USEPA's March 23, 2010 memo provides minimal guidance regarding this type of more detailed analysis, saying only "a Second Tier modeling analysis may be considered that would involve combining the monitored and modeled $PM_{2.5}$ concentrations on a seasonal or quarterly basis, and re-sorting the total impacts across the year to determine the cumulative design value."[22] As no additional guidance has been provided, such an analysis would be discussed with the District and CEC staff prior to implementation.

3.6.4 State One-Hour NO_2 Standard

Compliance with the state one-hour NO_2 standard will be demonstrated using OLM and the paired-sum approach described above, except that the analysis will use highest, rather than 98th percentile concentrations, consistent with the form of the state standard.

3.7 Background Ambient Air Quality Data

Background ambient air quality data for the project area will be obtained from the monitoring sites most representative of the conditions that exist at the proposed project site. Modeled concentrations will be added to these representative background concentrations to demonstrate compliance with the CAAQS and NAAQS.

Table 2 shows the monitoring stations we propose to use as they provide the most representative ambient air quality background data. Where possible, recommended background concentration measurements should come from nearby monitoring stations with similar site characteristics. For this proposed project, the Blythe monitoring station

[20] USEPA (2011a), page 10.
[21] USEPA (2010a), p. 9.
[22] USEPA (2010a), p. 8.

Table 2 Representative Background Ambient Air Quality Monitoring Stations		
Pollutant(s)	Monitoring Station	Distance to Project Site
$PM_{2.5}$, CO, PM_{10}, and NO_2	Palm Springs	181 km
SO_2	Victorville	263 km
O_3	Blythe	7.8 km

(ozone) is the closest monitoring station. The Palm Springs monitoring station (PM_{10}, $PM_{2.5}$, NO_2, and CO) is located 181 km west of the project site. The Victorville monitoring station (SO_2) is located 263 km west northwest of the project site. In general, the Palm Springs and Victorville monitoring stations are considered to provide conservative estimates of the worst case background concentrations due to their proximity to the South Coast Air Basin (Metropolitan Los Angeles). Monitoring stations located in Imperial County were not considered to be representative of conditions at the project site due to the predominant air flow patterns and due to air pollution from Mexico that creates a significant local influence for the worst-case pollutant concentration readings at some locations in Imperial County.

For annual NO_2, 24-hour and annual SO_2, and all PM_{10} and CO averaging periods, the highest values monitored during the 2009–2013 period will be used to represent ambient background concentrations in the project area. The one-hour average NO_2 analyses will be performed as described above. For analyses of federal 24-hour and annual $PM_{2.5}$ impacts, the three-year average of the 98th percentile 24-hour monitored levels for the period between 2009 and 2013 will be used to represent project area background because these values correspond to the method used for determining compliance with the federal $PM_{2.5}$ standards and are consistent with the guidance cited above.

3.7.1 Missing Data Protocol

Using the OLM method to model project-generated one-hour NO_2 concentrations requires the use of ambient monitored O_3 concentrations. Because the OLM method uses the ambient ozone concentration for a particular hour to limit the conversion of NO to NO_2, it is important to have ozone concentrations for every hour. It is also important that any missing hourly ozone concentrations be filled in with a value that does not underestimate the ozone concentration for that hour, to avoid underestimating the resulting NO_2 concentration. In addition, computation of total hourly NO_2 concentrations requires use of the ambient monitored hourly NO_2 concentrations from the nearest monitoring station. As is the case for the hourly ozone data, it is important to have a background NO_2 value for every hour that does not underestimate actual background.

As discussed above, background ambient hourly O_3 and NO_2 data were collected at the monitoring stations at Blythe and Palm Springs, respectively. While these datasets are expected to exceed USEPA's 90% completeness criterion (that is, more than 90% of the data values are present for each month), there are still occasional missing values that must be filled in. Missing NO_2 and O_3 data will be filled in following guidance developed by the San Joaquin Air Pollution Control District (SJVAPCD) in collaboration with CAPCOA (CAPCOA, 2011).[23] The option in AERMOD for a default background ozone value to be used in lieu of missing values (e.g., 40 ppb) will not be used.

a. Fill any *single missing hour* with the maximum of the:
   i. Preceding hour;
   ii. Succeeding hour;
   iii. Same hour of day on previous day; or
   iv. Same hour of day on succeeding day

If there are missing data for either iii and/or iv, use only the maximum of the available data to fill the missing hour (both a and b are guaranteed to be present since only single missing hours are filled in this step). Note that the most likely scenario for both c and d to be missing is for years when the monitor is calibrated at the same hour each day. In this case, the 30-day rolling average (see step b) for that hour will also not be available.

b. For hours that are not filled by step a (all periods with *more than one hour missing*), fill the missing hour with the maximum for that hour of day for a 30-day rolling period centered on the hour (i.e., for the 15 preceding days and the 15 succeeding days). Note that 30-day rolling period will extend into the preceding and succeeding year at the start or end, respectively, of the modeling period.

c. For hours not filled by step b, fill the missing data with the maximum of the 30-day rolling period for the preceding or succeeding hour.

d. Any hours not filled by steps a–c are likely periods with more than a month of missing data for all hours. These will be filled on a case-by-case basis, following the CAPCOA guidance cited above, and gap filling will be documented in the modeling section of the applications.

3.8 Health Risk Assessment

A health risk assessment will be performed according to the most current Office of Environmental Health Hazard Analysis (OEHHA) risk assessment guidance and software adopted and available at the time the risk assessment is prepared. OEHHA is currently in

[23] EPA's March 2011 guidance document on 1-hour NO_2 modeling does not address missing hourly NO_2 data. However, the CAPCOA guidance document indicates that the recommended technique for filling single missing hours of NO_2 is consistent with the gap filling technique established by EPA for filling a single hour of missing met data. All missing data procedures are subject to approval by the reviewing agencies.

the process of revising its "Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments," and CARB is in the process of updating the Hotspots Analysis and Reporting Program (HARP) software to implement the updated OEHHA guidance; however, it is not clear when either revision will be released publicly. The HRA modeling will be executed using CARB's HARP computer program with the latest available health database (most recent version is dated July 3, 2014). The HARP model will be used to assess cancer risk as well as non-cancer chronic and acute health hazards.

The HARP model incorporates the ISCST3 model previously approved by USEPA. CARB offers a software program that allows AERMOD data to be imported into the HARP model, called HARP On-Ramp. The on-ramp will be used with the most recent versions of AERMOD and HARP for the screening risk assessment. The following HARP default options will be used for the health risk assessment:

- Home grown produce selected (0.15 for the fraction for leafy, exposed, protected, and root vegetables);
- Dermal absorption selected (0.02 m/s deposition rate);
- Soil ingestion selected (0.02 m/s deposition rate); and
- Mother's milk selected (0.02 m/s deposition rate).

3.9 Construction Air Quality Impact Assessment for the CEQA Analysis

The potential ambient impacts from air pollutant emissions during the construction activities associated with the proposed project will be evaluated by air quality modeling that will account for the construction site location and the surrounding topography; the sources of emissions during construction, including vehicle and equipment exhaust emissions; and fugitive dust.

Types of Emission Sources − Construction of the proposed project can be viewed as three main sequential phases: site preparation; construction of foundations; and installation of the gas turbines and associated equipment. The construction impacts analysis will include a schedule for construction operation activities. Site preparation includes site excavation, excavation of footings and foundations, and backfilling operations.

Fugitive dust emissions from the construction of the Proposed Project result from the following activities:

- Excavation and grading at the construction site;
- Onsite travel on paved and unpaved roads and across the unpaved construction site;
- Aggregate and soil loading and unloading operations;
- Raw material transfer to and from material stockpiles; and
- Wind erosion of areas disturbed during construction activities.

Engine exhaust will be emitted from the following sources:

- Heavy equipment used for excavation, grading, and construction of onsite structures;
- Water trucks used to control construction dust emissions;
- Diesel- and gasoline-fueled welding machines, generators, air compressors, and water pumps;
- Gasoline-fueled pickup trucks and Diesel-fueled flatbed trucks used onsite to transport workers and materials around the construction site;
- Transport of mechanical and electrical equipment to the project site;
- Transport of rubble and debris from the site to an appropriate landfill; and
- Transport of raw materials to and from stockpiles.

Emissions from a peak activity day will be modeled. Annual average emissions over the construction period will also be calculated and modeled for comparison with annual standards.

Existing Ambient Levels – The background data discussed earlier will be used to represent existing ambient levels for the construction analysis as well as the analysis of the impacts of project operations.

Model Options – The AERMOD "OLMGROUP ALL" option will be used to estimate ambient impacts from construction emissions. The modeling options and meteorological data described above will be used for the modeling analysis. A 10% NO_2/NOx fraction for Diesel demolition/construction equipment will be assumed (see Appendix B).

The construction sites will be represented as both a set of volume sources and a separate set of area sources in the modeling analysis. Emissions will be divided into three categories: exhaust emissions, mechanically generated fugitive dust emissions, and wind-blown fugitive dust emissions. Exhaust emissions and mechanically generated fugitive dust emissions (e.g., dust from wheels of a scraper) will be modeled as volume sources with a height of 6 meters. Wind-blown fugitive dust emissions and sources at or near the ground that are at ambient temperature and have negligible vertical velocity will be modeled as area sources with a release height of 0.5 meters.

Combustion Diesel PM_{10} emission impacts from construction equipment will be evaluated to demonstrate that the cancer risk from construction activities will be below ten in one million at all receptors.

For the construction modeling analysis, the receptor grid will begin at the property boundary and will extend approximately one kilometer in all directions. The receptor grid will be laid out as follows:

1. One row of receptors spaced 25 meters apart along the facility's fence line;

2. Four tiers of receptors spaced 25 meters apart, extending 100 meters from the fence line; and

3. Additional tiers of receptors spaced 60 meters apart, extending from 100 meters to 1,000 meters from the fenceline.

3.10 Cumulative Air Quality Impact Analysis

To address CEC requirements, a cumulative air quality modeling impacts analysis of the project's typical operating mode will be performed in combination with other stationary source emissions sources within a six-mile radius that have received Authorities to Construct and/or modified permits to operate since August 2012, or are in the permitting process. For each criteria pollutant, facilities having an emission increase of less than five tons per year are generally considered to be *de minimis*, and these facilities may be excluded from the cumulative impacts analysis. Information on any recently constructed/permitted sources that might be appropriate for a cumulative air quality impact analysis (as defined above) will be requested from the MDAQMD. The analysis will include the operational Blythe Energy Project and the licensed, but not constructed, Blythe II Power Plant] in combination with the proposed project.

Upon receipt of sufficient information from the local air agencies to allow air dispersion modeling of the recently constructed/permitted non-project sources to be included in the cumulative air quality impact analysis, AERMOD will be used in a procedure similar to that described earlier in this protocol.

3.11 Nitrogen Deposition Analysis

As part of the Application for Certification filed with the CEC, it will be necessary to include a nitrogen deposition analysis. Nitrogen deposition is the input of NOx and ammonia (NH_3) derived pollutants, primarily nitric acid (HNO_3), from the atmosphere to the biosphere. Nitrogen deposition can lead to adverse impacts on sensitive species including direct toxicity, changes in species composition among native plants, and enhancement of invasive species.

We will perform a nitrogen deposition modeling analysis examining the impacts on nearby areas classified as critical habitat and/or areas containing sensitive biological resources. The analysis will compare the nitrogen deposition associated with the nitrogen emissions from the project with established nitrogen disposition significance thresholds. The AERMOD model will be used for this analysis. However, as discussed in the CEC staff's assessment of nitrogen deposition impacts for the Huntington Beach Energy Project, AERMOD tends to produce conservatively high predictions of nitrogen

deposition rates.[24] The assessment of significance for nitrogen deposition impacts will consider appropriate adjustments to background nitrate concentrations as well as emissions offsets provided for the project. If the maximum modeled nitrogen deposition impacts are determined to be significant, the Applicant will work with Staff to evaluate whether additional mitigation measures are needed.

[24] CEC, Final Staff Assessment for the Huntington Beach Energy Project, May 2014; Appendix BIO-1.

4. REPORTING

The results of the criteria pollutant and TAC modeling will be integrated into the application documents, and will include the information listed below.

- Project Description – Site map and site plan along with descriptions of the emitting equipment and air pollution control systems.

- Model Options and Input – Model options, screening and refined source parameters, criteria pollutant and TAC emission rates, meteorological data, and receptor grids used for the modeling analyses.

- Air Dispersion Modeling – Dispersion modeling results will include the following:

  - Plot plan showing emission points, nearby buildings (including dimensions), cross-section lines, property lines, fence lines, roads, and UTM coordinates;

  - A table showing building heights used in the modeling analysis;

  - Summaries of maximum modeled impacts; and

  - Model input and output files, including BPIP-PRIME and meteorological files as well as hourly ozone and NO_2 files used in demonstrating compliance with the 1-hour NO_2 standard, in electronic format on a compact disc, together with a description (README file) of all filenames.

- HRA – The HRA will include the following:

  - Descriptions of the methodology and inputs to the demolition/construction and operation AERMOD runs;

  - Tables of TAC emission rates and health impacts;

  - Figures showing sensitive receptor locations; and

  - Model input and output files in electronic format on a compact disc, together with a description (README file) of all filenames.

5. REFERENCES

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Appendix A

Information on CTSCREEN Model

The CTDMPLUS and CTSCREEN Models

Complex terrain impacts may need to be modeled with more accuracy than that provided by AERMOD. The use of more refined modeling techniques is specifically addressed in USEPA's Appendix W[1] modeling guidance, as follows:

> *Since AERMOD treats dispersion in complex terrain, we have merged sections 4 and 5 of appendix W, as proposed in the April 2000 NPR [Notice of Proposed Rulemaking]. And while AERMOD produces acceptable regulatory design concentrations in complex terrain, it does not replace CTDMPLUS for detailed or receptor-oriented complex terrain analysis, as we have made clear in Guideline section 4.2.2. CTDMPLUS remains available for use in complex terrain. [p. 68225]*
>
> *4.2.2 Refined Analytical Techniques*
> *d. If the modeling application involves a well defined hill or ridge and a detailed dispersion analysis of the spatial pattern of plume impacts is of interest, CTDMPLUS, listed in Appendix A, is available. CTDMPLUS provides greater resolution of concentrations about the contour of the hill feature than does AERMOD through a different plume-terrain interaction algorithm. [p. 68233]*

CTSCREEN is the same basic model as CTDMPLUS, except that meteorological data are handled internally in a simplified manner. As discussed in the CTSCREEN users guide:[2]

> *Since [CTDMPLUS] accounts for the three-dimensional nature of plume and terrain interaction, it requires detailed terrain and meteorological data that are representative of the modeling domain. Although the terrain data may be readily obtained from topographic maps and digitized for use in the CTDMPLUS, the required meteorological data may not be as readily available.*
>
> *Since the meteorological input requirements of the CTDMPLUS can limit its application, the EPA's Complex-Terrain-Modeling, Technology-Transfer Workgroup developed a methodology to use the advanced techniques of CTDMPLUS in situations where on-site meteorological measurements are limited or unavailable. This approach uses CTDMPLUS in a "screening" mode--actual source and terrain*

[1] 40 CFR 51 Subpart W, as amended November 9, 2005 at 70 FR 68218, "Revision to the Guideline on Air Quality Models: Adoption of a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions."
[2] USEPA, EPA-600/8-90-087, "User's Guide to CTDMPLUS: Volume 2. The Screening Mode (CTSCREEN)," October 1990.

characteristics are modeled with an extensive array of predetermined meteorological conditions.

This CTDMPLUS screening mode (CTSCREEN) serves several purposes in regulatory applications. When meteorological data are unavailable, CTSCREEN can be used to obtain conservative (safely above those of refined models), yet realistic, impact estimates for particular sources.

Therefore, the use of the CTSCREEN version of CTDMPLUS is consistent with USEPA guidance.

Appendix B

Proposed NO_2/NOx Ratios for Modeling Compliance with One-Hour NO_2 Standards for Diesel Engines Used in Construction Activities

Proposed NO_2/NOx Ratios for Modeling Compliance with One-Hour NO_2 Standards for Emergency Engines and for Construction Activities

The use of the Tier 3 Plume Volume Molar Ratio Method (PVMRM) and Ozone Limiting Method (OLM) options in AERMOD requires the specification of an in-stack ratio (ISR) of NO_2/NOx for each NOx emissions source. The October 27, 2011, California Air Pollution Control Officers Association (CAPCOA) Guidance Document, titled "Modeling Compliance of The Federal 1-Hour NO_2 NAAQS,"[27] emphasized the importance of these in-stack ratios for the 1-hour NO_2 NAAQS, recommending that in-stack ratios used with either the OLM or PVMRM options be justified based on the specific application.

USEPA's Office of Air Quality Planning and Standards (OAQPS) is in the process of creating a database of test results that support in-stack NO_2/NOx ratios for specific source types. We are proposing to use USEPA's ISR database for the Project.

USEPA's ISR database is at *http://www.epa.gov/ttn/scram/no2_isr_database.htm*. As of August 2014, the file NO2_ISR_database.xlsx, which is to provide the NO_2 ISR data that have been submitted via the formal collection initiated by OAQPS, contained listings for several Diesel engines.

Following is a description of the procedures followed to obtain proposed NO_2/NOx ratios from the ISR database for the equipment associated with the Proposed Project.

Diesel Emergency Engines and Construction Equipment

1. Sort by fuel to select all Diesel, #2 Diesel, and blank fuel fields to eliminate natural gas, biogas, and waste gas-fueled engines, leaving 40 records.

2. Eliminate any engines equipped with SCR (including the GE LeanNOx System)—the construction equipment Diesel engines will not have SCR, leaving 39 records.

The remaining engines range in size from 440 kW to 4,400 kW (590 to 5,900 hp). The NO_2/NOx ratios range from 2.2% to 9.9%, with an average of 6.2%. We propose to use a ratio of 10% as reasonable and conservative for the construction equipment.

[27] California Air Pollution Control Officers Association (2011). "Modeling Compliance of The Federal 1-Hour NO2 NAAQS." Available at *http://www.valleyair.org/busind/pto/Tox_Resources/CAPCOANO2GuidanceDocument10-27-11.pdf*.

Mojave Desert Air Quality Management District
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Visit our web site: http://www.mdaqmd.ca.gov
Eldon Heaston, Executive Director

September 18, 2014

Ms. Nancy Mathews
Sierra Research
1801 "J" Street
Sacramento, CA 95811

Subject: AltaGas Kananaskis Energy Project Modeling Protocol

Dear Ms. Mathews:

The Mojave Desert Air Quality Management (District) received the air quality modeling protocol for the proposed AltaGas Kananaskis Energy Project (KEP) simple-cycle power plant to be located near Blythe in Riverside County. The District approves of the submitted KEP modeling protocol with exception that KEP include all proposed equipment (equipment not exempt per District Rule 219) and add to the background ambient air quality data significant nearby sources within a 6 mile radius of the proposed site. Below is a list of significant projects for which the District has issued permits (or in the process of issuing permits) and are located within 6 miles of the proposed KEP project site. All significant projects located within the 6 mile radius are approved California Energy Commission (CEC) Projects. The list below provides for each project- name, address, and CEC docket number.

Blythe Energy Project; Hobsonway & Buck Boulevard, Blythe, California. CEC Docket number 99-AFC-8.

Blythe Energy Project, Phase II; BEPII site boundary is located on approximately a 76 acre site immediately adjacent to the operational Blythe Energy Project (BEPI). CEC Docket number 02-AFC-1.

Should you have any questions please contact Mr. Christian Anderson, (760) 245-1661 extension 1846.

Sincerely,

Christopher A. Collins

Supervising Air Quality Engineer

cja

sierra research

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October 2, 2014

Memo to: Gerry Bemis, California Energy Commission

From: Nancy Matthews Nancy Matthews

Subject: Responses to CEC Staff Comments on Modeling Protocol
Kananaskis Energy Project

Attached please find responses to the comments provided by your staff on the modeling protocol for the Kananaskis Energy Project to be located in Blythe. The proposed NO_2/NOx ratio is discussed in the attached responses. As requested, we will provide additional justification for ratios used in the event the project includes stationary emergency diesel engines.

We appreciate your prompt review of the protocol. We will keep you apprised of any additional modeling issues that arise during our preparation of the Application for Certification.

Attachment

Cc: Christopher Doyle, AltaGas Power Holdings (U.S.) Inc.
Melissa Foster, Stoel Rives LLP
Jerry Salamy, CH2M Hill
Christopher A. Collins, MDAQMD

Responses to Comments from CEC Staff Regarding the Air Dispersion Modeling and Screening Health Risk Assessment Protocol for the Kananaskis Energy Project

Air Quality (CEC Staff comments dated September 18, 2014)

1. Page 4: the protocol shows that the applicant is going to use SCREEN3 version 96043. Staff checked EPA website and noticed the latest version of SCREEN3 is 13043. Please use most recent versions of the EPA approved models to evaluate the project impacts.

   The citation of SCREEN3 version 96043 in the protocol was a typographical error. The latest version of SCREEN3 and all other EPA guideline models will be used for the KEP ambient air quality modeling analyses.

2. Page 14: the applicant is planning to perform analyses at as many of the following tiers as are needed to demonstrate compliance with the state and federal ambient air quality standards (for NO_2): Tier 1, 2, 7, 8, 9, 10, and 11. Tier 11 corresponds to the paired-sum approach, which combines concurrent background and modeling concentrations on an hour-by-hour basis. In the March 1, 2011 memorandum ("Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard"), EPA states that it does not recommend the paired-sum approach except in rare cases when such an approach can be justified. Please refer to the EPA memorandum for more detailed discussions. Please provide justifications for the paired-sum approach if it will be used for the project.

   We do not expect to require the Tier 11 paired sum approach; however, if the paired-sum approach is used, we will provide additional justification as requested.

3. Page 16: the protocol states that for analyses of federal 24-hour and annual PM2.5 impacts, the three-year average of the 98th percentile 24-hour monitored levels for the period between 2009 and 2013 will be used to represent project area background. While the federal 24-hour PM2.5 standard is based on the 98th percentile values, the annual PM2.5 standard isn't. Please provide appropriate values according to the correct forms of the standards.

   The comment is correct. The maximum modeled annual average PM2.5 concentrations will be used to demonstrate compliance with the annual standard, consistent with the form of the standard.[1]

4. Footnote 6 of Page 5, Page 19, and Appendix B: page 5 of the protocol states that if the final project includes a diesel emergency firepump engine and/or a diesel emergency generator, the applicant will use a NO2/NOx ratio discussed in Appendix B. Page 19 of the protocol states that a 10% NO_2/NOx fraction for diesel demolition/construction equipment will be assumed based on Appendix B. Appendix B of the protocol states that the applicant obtained and filtered the NO_2/NOx in-stack ratio database from EPA website to come up with the 10% ratio. Staff checked the NO_2/NOx in-stack ratio table from the 2011 CAPCOA guidance document ("Modeling Compliance of the Federal 1-Hour NO2 NAAQS") and found: a) the default NO_2/NOx ratio recommended for diesel IC engines is 20%; b) the default NO_2/NOx ratios recommended for gas/diesel

[1] The federal annual standard is based on a 3-year average, while the state standard applies on an annual average basis.

light/medium duty truck/cars and diesel heavy duty truck/cars are 25% and 11% respectively. The protocol doesn't include information about the proposed diesel emergency engines or construction equipment. Staff can't determine if the 10% ratio filtered from EPA's database is applicable to this project. Staff recommend using more conservative ratios suggested by CAPCOA.

Consistent with the recommendations from CAPCOA and CEC staff, we will use the 11% NO_2/NOx ratio recommended by CAPCOA for diesel heavy duty trucks in our modeling analysis of diesel powered construction equipment, as the construction equipment is more similar to diesel heavy duty trucks than it is to light/medium duty trucks/cars. If the project includes stationary diesel emergency equipment (generator or fire pump engine), we will review the 10% ratio derived from the EPA ISR database to determine whether data for the specific engine models is available and will provide additional justification for the selected ratio(s).

5. Page 19: the protocol shows that the wind-blown fugitive dust emissions and sources will be modeled as area sources with a release height of 0.5 meters. Per South Coast Air Quality Management District's request for Redondo Beach and Huntington Beach projects, fugitive dust emissions should be modeled as a ground-level area source with an initial vertical dimension of 1 meter. Please use assumptions consistent with those used for the recent siting cases.

   We will follow CEC staff's recommendation for modeling wind-blown fugitive dust emission sources as ground-level area sources with an initial vertical dimension of 1 meter.

6. Page 19: the protocol states that for the construction modeling analysis, the receptor grid will begin at the property boundary and will extend approximately one kilometer in all directions. Although staff does not expect maximum construction impacts to occur far away from the project, staff has been using receptor grids extending 6 miles (10 kilometers). If one kilometer radius is used, please demonstrate maximum construction impacts do not occur beyond one kilometer radius.

   We agree with CEC staff that it is unlikely that maximum construction impacts will occur more than one kilometer away from the project boundary. However, we will make the requested demonstration to ensure that the maximum impacts are captured in our modeling analysis.

<u>Public Health (CEC staff comments dated September 23, 2014)</u>

1. P. 9 Receptor Grids

   Other than grid receptors, please also place receptors at:

   a. All sensitive locations (e.g., child care facilities, schools, hospitals, prisons, libraries, etc.) out to 1-mile, if any are identified.

   b. The nearest residences and off-site workers.

   Please also provide the excel file containing the information (i.e. HARP Receptor #, UTM Meters, Description,...) of these sensitive receptors.

   We will place additional receptors at the locations of any identified sensitive receptors, as well as at the locations of the nearest residences and off-site workers.

The requested Excel file summary of sensitive receptor numbers, locations and descriptions will also be provided as requested.

2. P.18 Health Risk Assessment

   If OEHHA/CARB updates the guidance and HARP before the file of AFC, please conduct the HRA according to the new guidance and by using software. The updated OEHHA guidance regarding **inhalation rate** and **age sensitivity factors** would increase the estimated risk at least 3 times more than the old method.

   As indicated in the protocol, OEHHA is currently in the process of revising its "Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments," and CARB is in the process of updating the Hotspots Analysis and Reporting Program (HARP) software to implement the updated OEHHA guidance; however, it is not clear when either revision will be released publicly. If an updated version of HARP is made available on ARB's website before the AFC is filed, we will use that updated version of HARP for preparing the screening health risk assessment.

Responses to Comments from CEC Staff Regarding the Air Dispersion Modeling and Screening Health Risk Assessment Protocol for the Kananaskis Energy Project

Air Quality (CEC Staff comments dated September 18, 2014)

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The requested Excel file summary of sensitive receptor numbers, locations and descriptions will also be provided as requested.

2. P.18 Health Risk Assessment

   If OEHHA/CARB updates the guidance and HARP before the file of AFC, please conduct the HRA according to the new guidance and by using software. The updated OEHHA guidance regarding **inhalation rate** and **age sensitivity factors** would increase the estimated risk at least 3 times more than the old method.

   As indicated in the protocol, OEHHA is currently in the process of revising its "Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments," and CARB is in the process of updating the Hotspots Analysis and Reporting Program (HARP) software to implement the updated OEHHA guidance; however, it is not clear when either revision will be released publicly. If an updated version of HARP is made available on ARB's website before the AFC is filed, we will use that updated version of HARP for preparing the screening health risk assessment.

Appendix 3.1F
Ambient Air Quality Analysis Modeling Inputs and Screening Analysis

APPENDIX 3.1F

Table 3.1F-1: Screening Modeling Inputs
Table 3.1F-2: Screening Modeling Results
Table 3.1F-3: Emission Rates and Stack Parameters for Refined Modeling
Table 3.1F-4: Emission Rates and Stack Parameters for Startup Modeling: Gas Turbine and Auxiliary Boiler
Table 3.1F-5: Emission Rates and Stack Parameters for Commissioning Modeling: Gas Turbine and Auxiliary Boiler
Table 3.1F-6: SCREEN3 Fumigation Modeling
Table 3.1F-7: Emission Rates and Stack Parameters for Modeling Existing BEP

Figure 3.1F-1: SEP Building Layout for Modeling
Figure 3.1F-2: SEP and BEP Site Locations for Modeling

Dispersion modeling was conducted following the modeling protocol presented in Appendix 3.1-E. In response to comments received from the CEC Staff, the modeling analysis deviated from the protocol as follows:

- The latest version of SCREEN3, version 13043, was used.
- The paired-sum approach was not used for demonstrating compliance with the federal one-hour NO_2 standard.
- The maximum modeled annual average $PM_{2.5}$ concentrations were used to demonstrate compliance with the annual standard, consistent with the form of the standard.
- An NO_2:NOx ratio of 20% was used in modeling NO_2 impacts from the diesel fire pump engine.
- An NO_2:NOx ratio of 11% was used in modeling NO_2 impacts from diesel-powered construction equipment.
- Wind-blown fugitive dust sources were modeled as ground-level area sources with an initial vertical dimension of 1 meter.
- The initial construction impact receptor grid extended 6 miles (10 km) from…

Modeling input and output files, including meteorological data files, are provided on CD.

Table 3.1F-1
Sonoran Energy Project
Screening Modeling Inputs

e		Ambient Temp deg F	Stack Height feet	Stack Diam feet	Stack Flow wacfm	Stack Velocity ft/sec	Stack Temp deg F	Stack Height meters	Stack Diam meters	Stack Flow m3/sec	Stack Velocity m/sec	Stack Temp deg K
1.	Hot 100% Load DF w/Evap Cooling	110	140	22.0	1,649,006	72.30	163.0	42.67	6.71	778.35	22.04	345.93
2.	Hot 100% Load no DF w/Evap Cooling	110	140	22.0	1,683,859	73.83	175.7	42.67	6.71	794.80	22.50	352.98
3.	Hot Min Load no Evap Cooling	110	140	22.0	1,157,393	50.75	164.9	42.67	6.71	546.30	15.47	347.00
4.	Avg 100% Load DF w/Evap Cooling	74	140	22.0	1,592,154	69.81	157.8	42.67	6.71	751.51	21.28	343.06
5.	Avg 100% Load no DF w/Evap Cooling	74	140	22.0	1,619,012	70.98	167.8	42.67	6.71	764.19	21.64	348.61
6.	Avg. Min Load no Evap Cooling	74	140	22.0	996,643	43.70	153.4	42.67	6.71	470.43	13.32	340.57
7.	ISO 100% Load w/ DF, w/ Evap Cooling	59	140	22.0	1,601,071	70.20	157.4	42.67	6.71	755.72	21.40	342.81
8.	ISO 100% Load w/ DF, no Evap Cooling	59	140	22.0	1,578,292	69.20	156.8	42.67	6.71	744.97	21.09	342.46
9.	Cold 100% Load w/ DF	39	140	22.0	1,637,212	71.78	154.9	42.67	6.71	772.78	21.88	341.44
10.	Cold 100% Load no DF	39	140	22.0	1,660,498	72.80	163.3	42.67	6.71	783.77	22.19	346.08
11.	Cold Min Load	39	140	22.0	972,774	42.65	149.9	42.67	6.71	459.16	13.00	338.63
		NOx lb/hr	**CO lb/hr**	**PM10 lb/hr**	**SOx lb/hr**			**NOx g/sec**	**CO g/sec**	**PM10 g/sec**	**SOx g/sec**	
1.	Hot 100% Load DF w/Evap Cooling	25.20	15.30	10.00	4.75			3.175	1.928	1.260	0.599	
2.	Hot 100% Load no DF w/Evap Cooling	23.40	14.30	8.00	4.44			2.948	1.802	1.008	0.560	
3.	Hot Min Load no Evap Cooling	14.40	8.75	8.00	2.73			1.814	1.103	1.008	0.344	
4.	Avg 100% Load DF w/Evap Cooling	25.00	15.20	10.00	4.72			3.150	1.915	1.260	0.595	
5.	Avg 100% Load no DF w/Evap Cooling	23.30	14.20	8.00	4.41			2.936	1.789	1.008	0.556	
6.	Avg. Min Load no Evap Cooling	12.80	7.80	8.00	2.43			1.613	0.983	1.008	0.306	
7.	ISO 100% Load w/ DF, w/ Evap Cooling	25.30	15.40	10.00	4.78			3.188	1.940	1.260	0.602	
8.	ISO 100% Load w/ DF, no Evap Cooling	24.90	15.10	10.00	4.70			3.137	1.903	1.260	0.592	
9.	Cold 100% Load w/ DF	26.00	15.80	10.00	4.91			3.276	1.991	1.260	0.618	
10.	Cold 100% Load no DF	24.20	14.80	8.00	4.60			3.049	1.865	1.008	0.580	
11.	Cold Min Load	12.90	7.83	8.00	2.44			1.625	0.987	1.008	0.308	

Table 3.1F-2
Sonoran Energy Project
Screening Modeling Results

Operating Mode	Maximum Modeled Unit Impact (ug/m3 per g/s)				
	1-hr	3-hr	8-hr	24-hr	Annual
1. Hot 100% Load DF w/Evap Cooling	4.39	2.24	1.17	0.57	0.07
2. Hot 100% Load no DF w/Evap Cooling	4.07	2.07	1.09	0.52	0.06
3. Hot Min Load no Evap Cooling	5.11	2.61	1.61	0.87	n/a
4. Avg 100% Load DF w/Evap Cooling	4.59	2.33	1.21	0.62	0.07
5. Avg 100% Load no DF w/Evap Cooling	4.33	2.20	1.16	0.57	0.06
6. Avg. Min Load no Evap Cooling	6.36	2.99	2.04	1.09	n/a
7. ISO 100% Load w/ DF, w/ Evap Cooling	4.59	2.33	1.20	0.61	0.07
8. ISO 100% Load w/ DF, no Evap Cooling	4.65	2.34	1.21	0.63	0.07
9. Cold 100% Load w/ DF	4.62	2.34	1.20	0.60	0.07
10. Cold 100% Load no DF	4.37	2.23	1.16	0.56	0.06
11. Cold Min Load	6.68	3.09	2.16	1.14	0.12

Max Min-Load Impact for Startup/Shutdown

Table 3.1F-2 (cont'd)
Screening Modeling Results

Operating Mode	Maximum Modeled Concentration (ug/m3)						
	NOx	CO	SO2	SO2	CO	PM10	SO2
	1-hr	1-hr	1-hr	3-hr	8-hr	24-hr	24-hr
1. Hot 100% Load DF w/Evap Cooling	13.92	8.45	2.63	1.34	2.25	0.72	0.342
2. Hot 100% Load no DF w/Evap Cooling	12.01	7.34	2.28	1.16	1.96	0.52	0.289
3. Hot Min Load no Evap Cooling	9.27	5.63	1.76	0.90	1.78	0.88	0.300
4. Avg 100% Load DF w/Evap Cooling	14.46	8.79	2.73	1.38	2.31	0.78	0.366
5. Avg 100% Load no DF w/Evap Cooling	12.70	7.74	2.41	1.23	2.07	0.57	0.316
6. Avg. Min Load no Evap Cooling	10.25	6.25	1.95	0.92	2.01	1.10	0.333
7. ISO 100% Load w/ DF, w/ Evap Cooling	14.64	8.91	2.76	1.40	2.34	0.77	0.369
8. ISO 100% Load w/ DF, no Evap Cooling	14.60	8.85	2.76	1.39	2.31	0.79	0.371
9. Cold 100% Load w/ DF	**15.13**	**9.19**	**2.86**	**1.44**	**2.40**	0.76	**0.374**
10. Cold 100% Load no DF	13.32	8.15	2.53	1.29	2.17	0.57	0.327
11. Cold Min Load	10.86	6.59	2.06	0.95	2.13	**1.15**	0.351
Maximum, All Cases	15.13	9.19	2.86	1.44	2.40	1.15	0.374

Table 3.1F-3
Sonoran Energy Project
Emission Rates and Stack Parameters for Refined Modeling

	Stack Height, m	Stack Diam, m	Temp, deg K	Exhaust Flow, m3/s	Exhaust Velocity, m/s	Emission Rates, g/s			
						NOx	SO2	CO	PM10
Averaging Period: One hour									
Gas Turbine	42.672	6.706	341.443	772.678	21.879	3.2760	0.6182	1.9908	n/a
Auxiliary Boiler	15.240	0.889	588.706	13.441	21.655	0.0703	1.151E-02	0.3056	n/a
Emergency Firepump	3.048	0.154	726.483	0.714	38.310	0.0846	1.548E-04	1.983E-02	n/a
Cooling Tower	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Averaging Period: Three hours									
Gas Turbine	42.672	6.706	341.443	772.678	21.879	n/a	0.6182	n/a	n/a
Auxiliary Boiler	15.240	0.889	588.706	13.441	21.655	n/a	1.151E-02	n/a	n/a
Emergency Firepump	3.048	0.154	726.483	0.714	38.310	n/a	5.160E-05	n/a	n/a
Cooling Tower	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Averaging Period: Eight hours									
Gas Turbine	42.672	6.706	341.443	772.678	21.879	n/a	n/a	5.967	n/a
Auxiliary Boiler	15.240	0.889	588.706	13.441	21.655	n/a	n/a	0.6112	n/a
Emergency Firepump	3.048	0.154	726.483	0.714	38.310	n/a	n/a	2.479E-03	n/a
Cooling Tower	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Averaging Period: 24-hour SOx									
Gas Turbine	42.672	6.706	341.443	772.678	21.879	n/a	0.6182	n/a	n/a
Auxiliary Boiler	15.240	0.889	588.706	13.441	21.655	n/a	1.151E-02	n/a	n/a
Emergency Firepump	3.048	0.154	726.483	0.714	38.310	n/a	6.450E-06	n/a	n/a
Cooling Tower	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Averaging Period: 24-hour PM10									
Gas Turbine	42.672	6.706	338.631	459.098	13.000	n/a	n/a	n/a	1.0080
Auxiliary Boiler	15.240	0.889	588.706	13.441	21.655	n/a	n/a	n/a	5.844E-02
Emergency Firepump	3.048	0.154	726.483	0.714	38.310	n/a	n/a	n/a	2.204E-04
Cooling Tower (each cell)	12.754	8.534	299.261	641.424	11.213	n/a	n/a	n/a	2.042E-02
Averaging Period: Annual NOx and SOx									
Gas Turbine	42.672	6.706	341.443	772.678	21.879	2.3932	0.2490	n/a	n/a
Auxiliary Boiler	15.240	0.889	588.706	13.441	21.655	6.440E-02	4.60E-03	n/a	n/a
Emergency Firepump	3.048	0.154	726.483	0.714	38.310	3.86E-03	7.07E-06	n/a	n/a
Cooling Tower	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Averaging Period: Annual PM10									
Gas Turbine	42.672	6.706	342.460	744.871	21.092	n/a	n/a	n/a	0.9032
Auxiliary Boiler	15.240	0.889	588.706	13.441	21.655	n/a	n/a	n/a	4.670E-02
Emergency Firepump	3.048	0.154	726.483	0.714	38.310	n/a	n/a	n/a	1.208E-04
Cooling Tower (each cell)	12.754	8.534	299.261	641.424	11.213	n/a	n/a	n/a	2.042E-02

Table 3.1F-4
Sonoran Energy Project
Emission Rates and Stack Parameters for Startup Modeling: Gas Turbine and Auxiliary Boiler

	Stack Height, m	Stack Diam, m	Temp, deg K	Exhaust Flow, m3/s	Exhaust Velocity, m/s	Emission Rates, g/s			
						NOx	SO2	CO	PM10
Averaging Period: One hour									
Gas Turbine	42.672	6.706	338.631	459.098	13.000	23.625	0.308	17.130	n/a
Auxiliary Boiler	15.240	0.889	522.039	5.803	9.349	0.2509	1.151E-02	1.528	n/a
Emergency Firepump	3.048	0.154	726.483	0.714	38.310	0.085	1.548E-04	1.983E-02	n/a
Cooling Tower	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Table 3.1F-5
Sonoran Energy Project
Emission Rates and Stack Parameters for Commissioning Modeling: Gas Turbine and Auxiliary Boiler

Auxiliary Boiler

	Stack Height, m	Stack Diam, m	Temp, deg K	Exhaust Flow, m3/s	Exhaust Velocity, m/s	Emission Rates, g/s	
						NOx	CO
Averaging Period: One hour, three hours, eight hours							
Auxiliary Boiler	15.240	0.889	522.039	5.803	9.349	1.0038	1.5279

Gas Turbine

	Stack Height, m	Stack Diam, m	Temp, deg K	Exhaust Flow, m3/s	Exhaust Velocity, m/s	Emission Rates, g/s	
						NOx	CO
Averaging Period: One hour							
Gas Turbine	42.672	6.706	338.631	459.098	13.000	78.692	619.831
Auxiliary Boiler	15.240	0.889	588.706	13.441	21.655	0.0703	0.306
Emergency Firepump	3.048	0.154	726.483	0.714	38.310	0.000	0.0000
Cooling Tower	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Averaging Period: Eight hours							
Gas Turbine	42.672	6.706	338.631	459.098	13.000	n/a	448.513
Auxiliary Boiler	15.240	0.889	588.706	13.441	21.655	n/a	0.306
Emergency Firepump	3.048	0.154	726.483	0.714	38.310	n/a	0.0000
Cooling Tower	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Table 5.1F-6
Sonoran Energy Project
SCREEN 3 Fumigation Modeling

Case	Emission Rates, g/s NOx	CO	PM10	SO2
1. Hot 100% Load DF w/Evap Cooling	3.18	1.93	1.26	0.60
2. Hot 100% Load no DF w/Evap Cooling	2.95	1.80	1.01	0.56
3. Hot Min Load no Evap Cooling	1.81	1.10	1.01	0.34
4. Avg 100% Load DF w/Evap Cooling	3.15	1.92	1.26	0.59
5. Avg 100% Load no DF w/Evap Cooling	2.94	1.79	1.01	0.56
6. Avg. Min Load no Evap Cooling	1.61	0.98	1.01	0.31
7. ISO 100% Load w/ DF, w/ Evap Cooling	3.19	1.94	1.26	0.60
8. ISO 100% Load w/ DF, no Evap Cooling	3.14	1.90	1.26	0.59
9. Cold 100% Load w/ DF	3.28	1.99	1.26	0.62
10. Cold 100% Load no DF	3.05	1.86	1.01	0.58
11. Cold Min Load	1.63	0.99	1.01	0.31
Aux Boiler	0.0703	0.306	0.0584	0.0115

Inversion Breakup	Unit Impacts	Emissions, ug/m3 NOx	CO	PM10	SO2	Distance to Maxima (m)
1. Hot 100% Load DF w/Evap Cooling	1.067	3.39	2.06	1.34	0.64	18,009
2. Hot 100% Load no DF w/Evap Cooling	0.984	2.90	1.77	0.99	0.55	19,116
3. Hot Min Load no Evap Cooling	1.319	2.39	1.45	1.33	0.45	15,399
4. Avg 100% Load DF w/Evap Cooling	1.124	3.54	2.15	1.42	0.67	17,325
5. Avg 100% Load no DF w/Evap Cooling	1.319	3.87	2.36	1.33	0.73	15,399
6. Avg. Min Load no Evap Cooling	1.561	2.52	1.53	1.57	0.48	13,603
7. ISO 100% Load w/ DF, w/ Evap Cooling	1.124	1.81	1.10	1.13	0.34	17,335
8. ISO 100% Load w/ DF, no Evap Cooling	1.141	1.84	1.12	1.15	0.35	17,143
9. Cold 100% Load w/ DF	1.125	1.81	1.11	1.13	0.34	17,323
10. Cold 100% Load no DF	1.060	1.71	1.04	1.07	0.32	18,089
11. Cold Min Load	1.624	2.62	1.60	1.64	0.50	13,212
Aux Boiler	12.58	20.29	12.36	12.68	3.86	2,972

Table 3.1F-6 (cont'd)
SCREEN 3 Fumigation Modeling Results

Flat Terrain	Unit Impacts	Emissions, ug/m3				Distance to Maxima (m)
		NOx	CO	PM10	SO2	
1. Hot 100% Load DF w/Evap Cooling	0.956	3.04	1.84	1.20	0.57	1,084
2. Hot 100% Load no DF w/Evap Cooling	0.855	2.52	1.54	0.86	0.48	1,121
3. Hot Min Load no Evap Cooling	1.082	1.96	1.19	1.09	0.37	1,157
4. Avg 100% Load DF w/Evap Cooling	0.992	3.12	1.90	1.25	0.59	1,074
5. Avg 100% Load no DF w/Evap Cooling	1.082	3.18	1.94	1.09	0.60	1,157
6. Avg. Min Load no Evap Cooling	1.374	2.22	1.35	1.38	0.42	1,075
7. ISO 100% Load w/ DF, w/ Evap Cooling	0.992	1.60	0.97	1.00	0.30	1,074
8. ISO 100% Load w/ DF, no Evap Cooling	0.994	1.60	0.98	1.00	0.30	1,074
9. Cold 100% Load w/ DF	0.992	1.60	0.97	1.00	0.30	1,074
10. Cold 100% Load no DF	0.948	1.53	0.93	0.96	0.29	1,087
11. Cold Min Load	1.452	2.34	1.43	1.46	0.44	1,057
Aux Boiler	10.780	17.39	10.59	10.87	3.30	362

Appropriate 1-hr unit impacts to use for longer averaging periods

	Unit Impact for Avg Period, ug/m3 per g/s			
	1 hour	3 hours	8 hours	24 hours
1. Hot 100% Load DF w/Evap Cooling	1.07	1.01	0.98	0.96
2. Hot 100% Load no DF w/Evap Cooling	0.98	0.92	0.88	0.86
3. Hot Min Load no Evap Cooling	1.32	1.20	1.13	1.10
4. Avg 100% Load DF w/Evap Cooling	1.12	1.06	1.02	1.00
5. Avg 100% Load no DF w/Evap Cooling	1.32	1.20	1.13	1.10
6. Avg. Min Load no Evap Cooling	1.56	1.47	1.41	1.39
7. ISO 100% Load w/ DF, w/ Evap Cooling	1.12	1.06	1.02	1.00
8. ISO 100% Load w/ DF, no Evap Cooling	1.14	1.07	1.02	1.00
9. Cold 100% Load w/ DF	1.13	1.06	1.02	1.00
10. Cold 100% Load no DF	1.06	1.00	0.97	0.96
11. Cold Min Load	1.62	1.54	1.48	1.46
Aux Boiler	12.58	11.68	11.12	10.89

Table 3.1F-6 (cont'd)
SCREEN 3 Fumigation Modeling Results

	Unit	Emissions, ug/m3			
1-hr average	Impacts	NOx	CO	PM10	SO2
1. Hot 100% Load DF w/Evap Cooling	1.07	3.4	2.1	-	0.64
2. Hot 100% Load no DF w/Evap Cooling	0.98	2.9	1.8	-	0.55
3. Hot Min Load no Evap Cooling	1.32	2.4	1.5	-	0.45
4. Avg 100% Load DF w/Evap Cooling	1.12	3.5	2.2	-	0.67
5. Avg 100% Load no DF w/Evap Cooling	1.32	3.9	2.4	-	0.73
6. Avg. Min Load no Evap Cooling	1.56	2.5	1.5	-	0.48
7. ISO 100% Load w/ DF, w/ Evap Cooling	1.12	3.6	2.2	-	0.68
8. ISO 100% Load w/ DF, no Evap Cooling	1.14	3.6	2.2	-	0.68
9. Cold 100% Load w/ DF	1.13	**3.7**	**2.2**	-	**0.70**
10. Cold 100% Load no DF	1.06	3.2	2.0	-	0.61
11. Cold Min Load	1.62	2.6	1.6	-	0.50
Aux Boiler	12.58	0.9	3.8	-	0.14
3-hr average					
1. Hot 100% Load DF w/Evap Cooling	1.01	-	-	-	0.55
2. Hot 100% Load no DF w/Evap Cooling	0.92	-	-	-	0.46
3. Hot Min Load no Evap Cooling	1.20	-	-	-	0.37
4. Avg 100% Load DF w/Evap Cooling	1.06	-	-	-	0.57
5. Avg 100% Load no DF w/Evap Cooling	1.20	-	-	-	0.60
6. Avg. Min Load no Evap Cooling	1.47	-	-	-	0.40
7. ISO 100% Load w/ DF, w/ Evap Cooling	1.06	-	-	-	0.57
8. ISO 100% Load w/ DF, no Evap Cooling	1.07	-	-	-	0.57
9. Cold 100% Load w/ DF	1.06	-	-	-	**0.59**
10. Cold 100% Load no DF	1.00	-	-	-	0.52
11. Cold Min Load	1.54	-	-	-	0.43
Aux Boiler	11.68	-	-	-	0.12
8-hr average					
1. Hot 100% Load DF w/Evap Cooling	0.98	-	1.3	-	-
2. Hot 100% Load no DF w/Evap Cooling	0.88	-	1.1	-	-
3. Hot Min Load no Evap Cooling	1.13	-	0.9	-	-
4. Avg 100% Load DF w/Evap Cooling	1.02	-	1.4	-	-
5. Avg 100% Load no DF w/Evap Cooling	1.13	-	1.4	-	-
6. Avg. Min Load no Evap Cooling	1.41	-	1.0	-	-
7. ISO 100% Load w/ DF, w/ Evap Cooling	1.02	-	1.4	-	-
8. ISO 100% Load w/ DF, no Evap Cooling	1.02	-	1.4	-	-
9. Cold 100% Load w/ DF	1.02	-	**1.4**	-	-
10. Cold 100% Load no DF	0.97	-	1.3	-	-
11. Cold Min Load	1.48	-	1.0	-	-
Aux Boiler	11.12	-	2.4	-	-
24-hr average					
1. Hot 100% Load DF w/Evap Cooling	0.96	-	-	0.49	0.23
2. Hot 100% Load no DF w/Evap Cooling	0.86	-	-	0.35	0.19
3. Hot Min Load no Evap Cooling	1.10	-	-	0.44	0.15
4. Avg 100% Load DF w/Evap Cooling	1.00	-	-	0.50	0.24
5. Avg 100% Load no DF w/Evap Cooling	1.10	-	-	0.44	0.24
6. Avg. Min Load no Evap Cooling	1.39	-	-	**0.56**	0.17
7. ISO 100% Load w/ DF, w/ Evap Cooling	1.00	-	-	0.50	0.24
8. ISO 100% Load w/ DF, no Evap Cooling	1.00	-	-	0.51	0.24
9. Cold 100% Load w/ DF	1.00	-	-	0.50	**0.25**
10. Cold 100% Load no DF	0.96	-	-	0.39	0.22
11. Cold Min Load	1.46	-	-	0.03	0.01
Aux Boiler	10.89	-	-	0.25	0.05

Table 5.1F-7
Sonoran Energy Project
Emission Rates and Stack Parameters for Modeling Existing BEP

	Stack Height, m	Stack Diam, m	Temp, deg K	Exhaust Velocity, m/s	Emission Rates, g/s			
					NOx	SO2	CO	PM10
Averaging Period: One, 3, 8 and 24 hours								
Gas turbines (each)	39.62	5.639	350.15	18.08	2.4948	0.3402	2.2050	0.7836
Main cooling tower (each of 8 cells)	11.89	8.534	307.90	6.64	n/a	n/a	n/a	8.033E-03
Chiller cooling tower (each of 12 cells)	8.53	4.877	307.90	8.20	n/a	n/a	n/a	3.780E-04
Averaging Period: Annual								
Gas turbines (each)	39.62	5.639	350.15	18.08	1.3952	0.1726	n/a	0.7836
Main cooling tower (each of 8 cells)	11.89	8.534	307.90	6.64	n/a	n/a	n/a	8.033E-03
Chiller cooling tower (each of 12 cells)	8.53	4.877	307.90	8.20	n/a	n/a	n/a	3.780E-04

Figure 3.1F-1
SEP Building Layout for Modeling

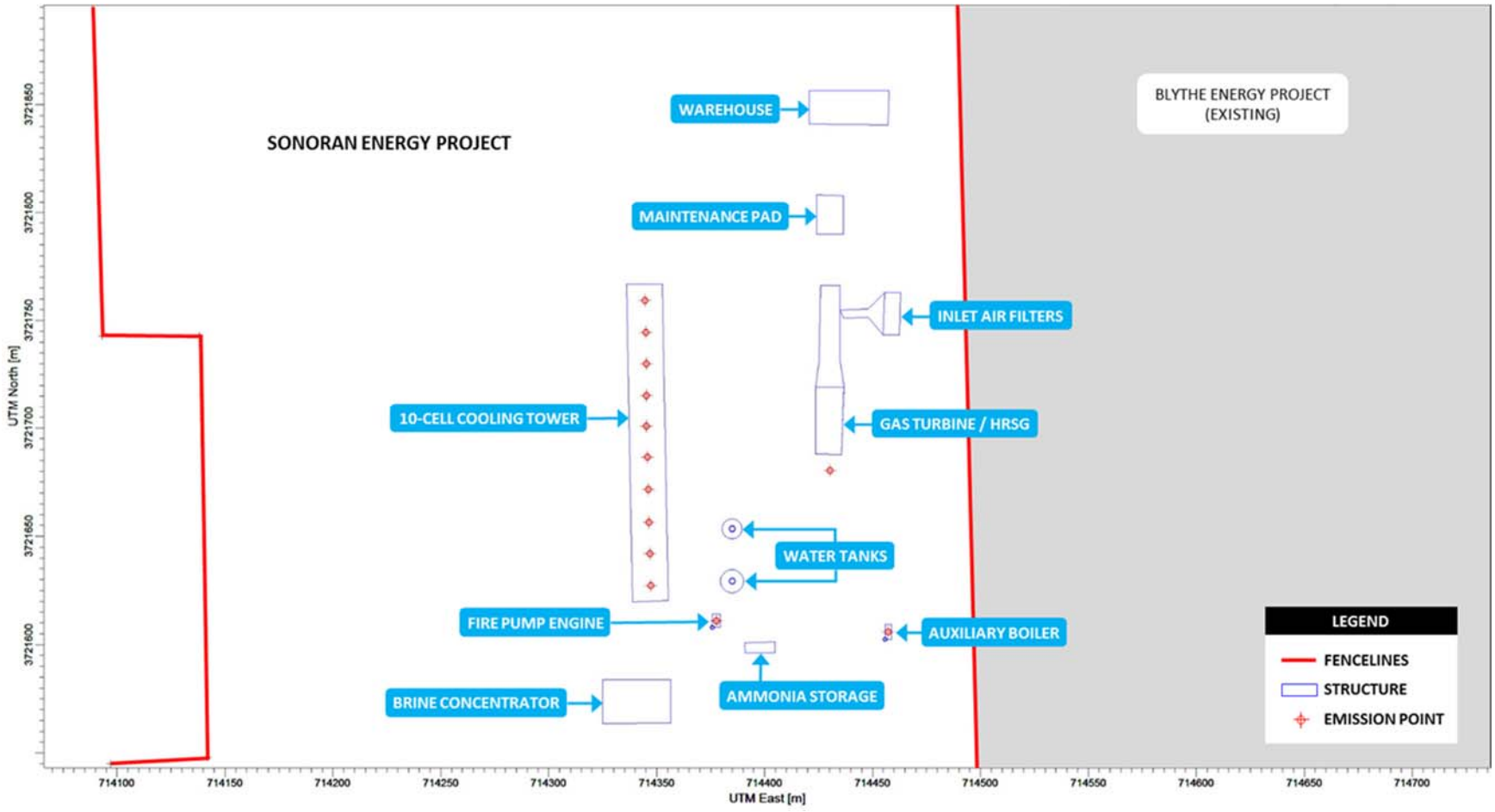
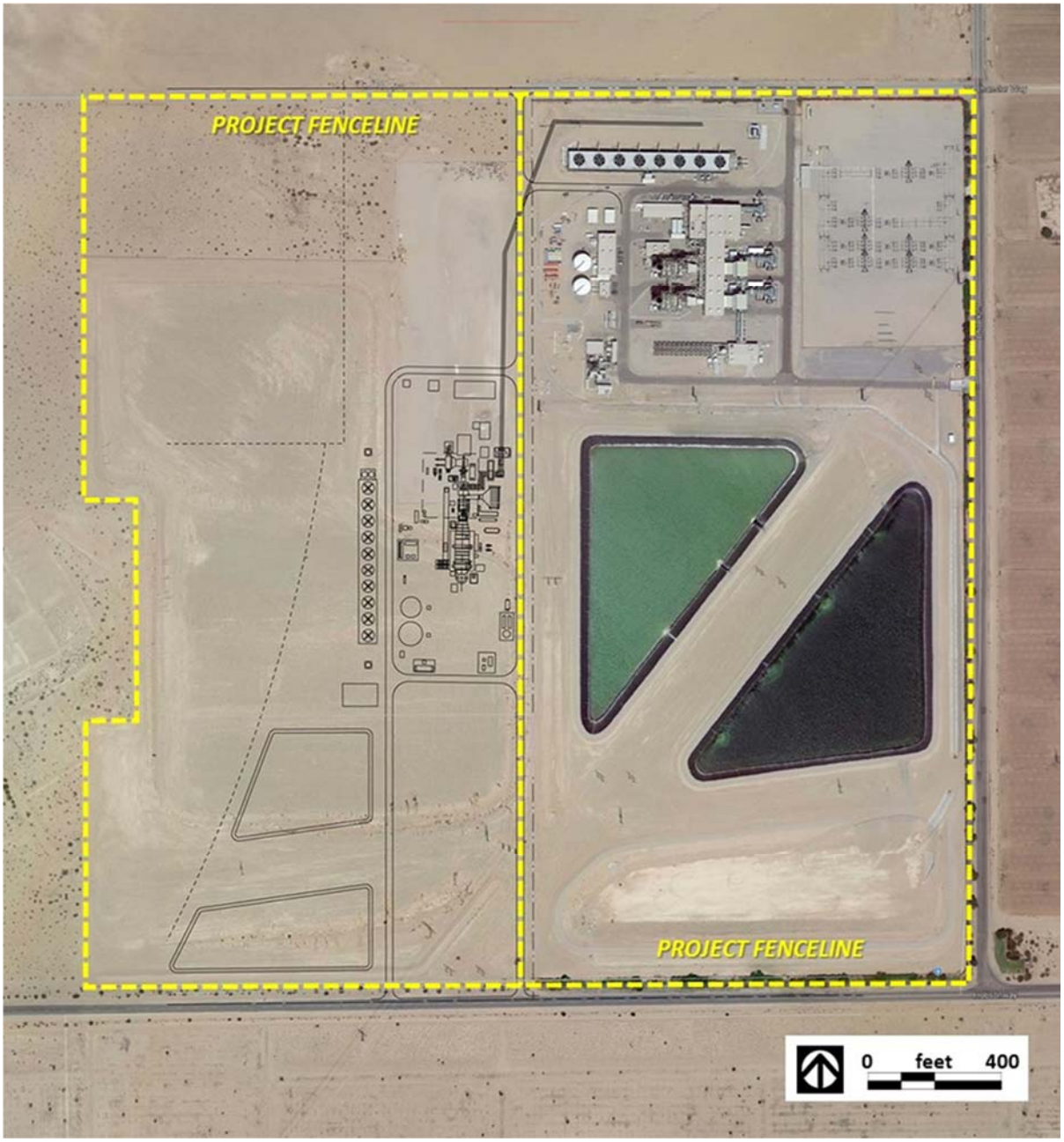


Figure 3.1F-2
SEP and BEP Site Locations for Modeling



Appendix 3.1G
Cumulative Impact Analysis

APPENDIX 3.1G

Cumulative Impacts Analysis

Cumulative air quality impacts from SEP and other reasonably foreseeable projects will be both regional and localized in nature. Regional air quality impacts are possible for pollutants such as ozone and $PM_{2.5}$ which are formed through photochemical processes that can take hours to occur. Carbon monoxide, NOx, and SOx impacts are generally localized in the area in which they are emitted. PM_{10} can create a local air quality problem in the vicinity of its emission source, but can also be a regional issue when it is formed in the atmosphere from VOC, SOx, and NOx.

The cumulative impacts analysis considers the potential for both regional and localized impacts due to emissions from proposed operation of SEP. Regional impacts are evaluated by comparing maximum daily and annual emissions from the project with emissions of ozone and PM precursors in the Mojave Desert Air Basin. Localized impacts are evaluated by looking at other local sources of pollutants that are not included in the background air quality data to determine whether these sources in combination with SEP would be expected to cause significant cumulative air quality impacts.

Regional Impacts

Regional impacts are normally evaluated by assessing the project's contribution to regional emissions. Although the relative importance of VOC and NOx emissions in ozone formation differs from region to region and from day to day, state law requires reductions in emissions of both precursors to reduce overall ozone levels. The change in the sum of emissions of these pollutants, equally weighted, is used to provide a rough estimate of the impact of the project on regional ozone levels. However, because of the rural and relatively undeveloped nature of the project area (eastern Riverside County), the MDAQMD and ARB have determined that ozone concentrations in the area largely reflect the impact of transport from the South Coast Air Basin and the San Joaquin Valley Air Basin.[1] Therefore, in this instance a comparison of project emissions with emissions in the air basin is not particularly informative because regional air quality is not correlated with local or regional sources of emissions. However, this also suggests that the project emissions will have minimal impact on local ozone levels because the majority of ozone in the project area comes from outside the air basin.

A comparison of the emissions of PM_{10} and $PM_{2.5}$ precursor emissions from the project with regional PM_{10} and $PM_{2.5}$ precursor emissions can be used to provide an estimate of the impact of the Project on regional PM_{10} and $PM_{2.5}$ levels. As discussed above, emissions of NOx and VOC, which are PM_{10}/$PM_{2.5}$ precursors as well as ozone precursors, are relatively low. The majority of regional PM_{10} and $PM_{2.5}$ comes from directly emitted particulate matter in the form of unpaved road dust and fugitive windblown dust.

1 MDAQMD, "2004 Ozone Attainment Plan (State and Federal). April 2004.

Table 3.1G-1 summarizes these comparisons. Project emissions are compared with projected regional emissions in 2020. Projected emissions for the MDAQMD for 2020 were obtained using CARB's web-based emission inventory projection software.[2] Emissions from the project would result in very small increases in total emissions in the county. Because of the relatively small emissions contribution from the project, including the benefits of required mitigation, and because regional air quality is heavily influenced by transport, we expect that the overall impact of the project on regional air quality will not be significant.

TABLE 3.1G-1
Comparison of Project Emissions to Regional Precursor Emissions in 2020: Annual Basis[a]

Ozone Precursors – Annual Basis	
Total Regional Ozone Precursors, tons/year	51,729
Total Project Ozone Precursor Emission, tons/year	109.8
Project Emissions as Percentage of Regional Ozone Precursor Emissions	0.21%
PM_{10} Precursors – Annual Basis	
Total Regional PM_{10} Precursors, tons/year	88,591
Total Project PM_{10} Precursor Emissions, tons/year	158.7
Project Emissions as Percentage of Regional PM_{10} Precursor Emissions	0.18%
$PM_{2.5}$ Precursors – Annual Basis	
Total Regional $PM_{2.5}$ Precursors, tons/year	62,541
Total Project $PM_{2.5}$ Precursor Emissions, tons/year	158.7
Project Emissions as Percentage of Regional $PM_{2.5}$ Precursor Emissions	0.25%

[a] Basin-wide emissions calculated as 365 times daily emissions

Localized Impacts

To evaluate potential cumulative impacts of the project in combination with other projects in the area, we requested from the MDAQMD information regarding projects within a radius of 10 km (6 miles) of the project.

Within this search area, two types of projects were used as criteria for identification:

- Projects for which air pollution permits to construct have been issued since August 1, 2012; and
- Projects for which air pollution permits to construct have not been issued, but that are reasonably foreseeable.

As requested by the District, the cumulative impacts analysis will also include the operational Blythe Energy Project, to ensure that localized impacts are evaluated.

A copy of the information request to the District for information about potential projects in the vicinity is attached. Since the proposed SEP will replace the licensed Blythe II project, Blythe II is not included in the cumulative impacts analysis.

[2] http://www.arb.ca.gov/app/emsinv/fcemssumcat2013.php, accessed April 2015.

Additional planned development projects include the Blythe Mesa Solar Project, the Blythe Solar Power Project (formerly Palo Verde Solar I), the Blythe Solar Power Generation Station 1, and the Blythe Airport Solar I Project.

The Blythe Mesa Solar Project is proposed for construction in areas generally north, east and south of the SEP site. The Environmental Impact Report/Environmental Assessment prepared for the project determined that emissions from project construction and operation will be below MDAQMD CEQA thresholds for all pollutants. Construction is expected to take 3 years. Although some of the construction activities for the Blythe Mesa project may occur concurrently with some of the construction activities at SEP, impacts during construction are expected to be highly localized. The Blythe Mesa Solar Project EIR evaluated the construction of that project in combination with the construction of the Blythe Energy II project and determined that the potential cumulative impacts would not be significant.[3] Because the construction of SEP will be similar in scope and schedule to the construction of the BEP II project evaluated in the EIR, the conclusion is equally applicable for potential cumulative impacts with SEP.

The Blythe Solar Power Project will be constructed approximately 6 miles north of the SEP site. Because the project is a photovoltaic project, it is unlikely to have any operational air quality impacts. According to the staff assessment prepared by the CEC for the project,[4] construction is likely to take approximately 48 months. However, even if the project construction schedule were to coincide with SEP project construction, the localized construction impacts are unlikely to cause any cumulative impacts with SEP due to the distance between the project construction sites.

The BEP II Staff Analysis evaluated the potential for BEP II to have significant cumulative impacts on ozone and particulate matter concentrations in the project area. The SA concluded that the BEP II and cumulative sources would not create any new violations of NO_2 standards.

The SA also concluded that with implementation of staff-recommended construction and operation CEQA mitigation measures, it is unlikely that the BEP II would have significant impacts on ambient PM concentrations. The PM emissions from the proposed SEP are lower than those from the licensed BEP II, and the modeled impacts are similar. Further, the staff-recommended construction mitigation measures will be implemented for SEP, along with appropriate mitigation measures for project operation. Therefore, the project owner believes that the previous conclusions regarding significant impacts from BEP II are also applicable to SEP.

[3] Riverside County Planning Department and U.S. BLM, "Blythe Mesa Solar Project, EIR/EA. Chapter 4: Environmental Consequences Including Cumulative Impacts," April 2015.

[4] CEC, "Blythe Solar Power Project Staff Assessment - Part A (Corrected)," 09-AFC-06C. September 2013.

ATTACHMENT 3.1G-1

Correspondence Related To Cumulative Impacts Analysis

Mojave Desert Air Quality Management District
14306 Park Avenue, Victorville, CA 92392-2310
760.245.1661 • fax 760.245.2699
Visit our web site: http://www.mdaqmd.ca.gov
Eldon Heaston, Executive Director

September 18, 2014

Ms. Nancy Mathews
Sierra Research
1801 "J" Street
Sacramento, CA 95811

Subject: AltaGas Kananaskis Energy Project Modeling Protocol

Dear Ms. Mathews:

The Mojave Desert Air Quality Management (District) received the air quality modeling protocol for the proposed AltaGas Kananaskis Energy Project (KEP) simple-cycle power plant to be located near Blythe in Riverside County. The District approves of the submitted KEP modeling protocol with exception that KEP include all proposed equipment (equipment not exempt per District Rule 219) and add to the background ambient air quality data significant nearby sources within a 6 mile radius of the proposed site. Below is a list of significant projects for which the District has issued permits (or in the process of issuing permits) and are located within 6 miles of the proposed KEP project site. All significant projects located within the 6 mile radius are approved California Energy Commission (CEC) Projects. The list below provides for each project- name, address, and CEC docket number.

Blythe Energy Project; Hobsonway & Buck Boulevard, Blythe, California. CEC Docket number 99-AFC-8.

Blythe Energy Project, Phase II; BEPII site boundary is located on approximately a 76 acre site immediately adjacent to the operational Blythe Energy Project (BEPI). CEC Docket number 02-AFC-1.

Should you have any questions please contact Mr. Christian Anderson, (760) 245-1661 extension 1846.

Sincerely,

Christopher A. Collins

Supervising Air Quality Engineer

cja

Appendix 3.3A
Literature Search - Filed under Request for Confidential Designation

Appendix 3.8A/B
Sensitive Receptor Information

Irish Energy Project
Irish Energy Project
Blythe, CA 92225

Inquiry Number: 4118446.1s
October 28, 2014

EDR Offsite Receptor Report

EDR® Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Records Searched/Data Currency Tracking Addendum	39

Thank you for your business
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available records was conducted by Environmental Data Resources, Inc. (EDR). The EDR Offsite Receptor Report provides information which may be used to comply with the Clean Air Act Risk Management Program 112-R. *"The rule requires that you estimate in the RMP residential populations within the circle defined by the endpoint for your worst-case and alternative release scenarios (i.e., the center of the circle is the point of release and the radius is the distance to the endpoint). In addition, you must report in the RMP whether certain types of public receptors and environmental receptors are within the circles."*

The address of the subject property, for which the search was intended, is:

IRISH ENERGY PROJECT
IRISH ENERGY PROJECT
BLYTHE, CA 92225

Distance Searched: 6.000 miles from subject property

RECEPTOR SUMMARY
An X indicates the presence of the receptor within the search radius.

Residential Population
Estimated population within search radius: 8800 persons.

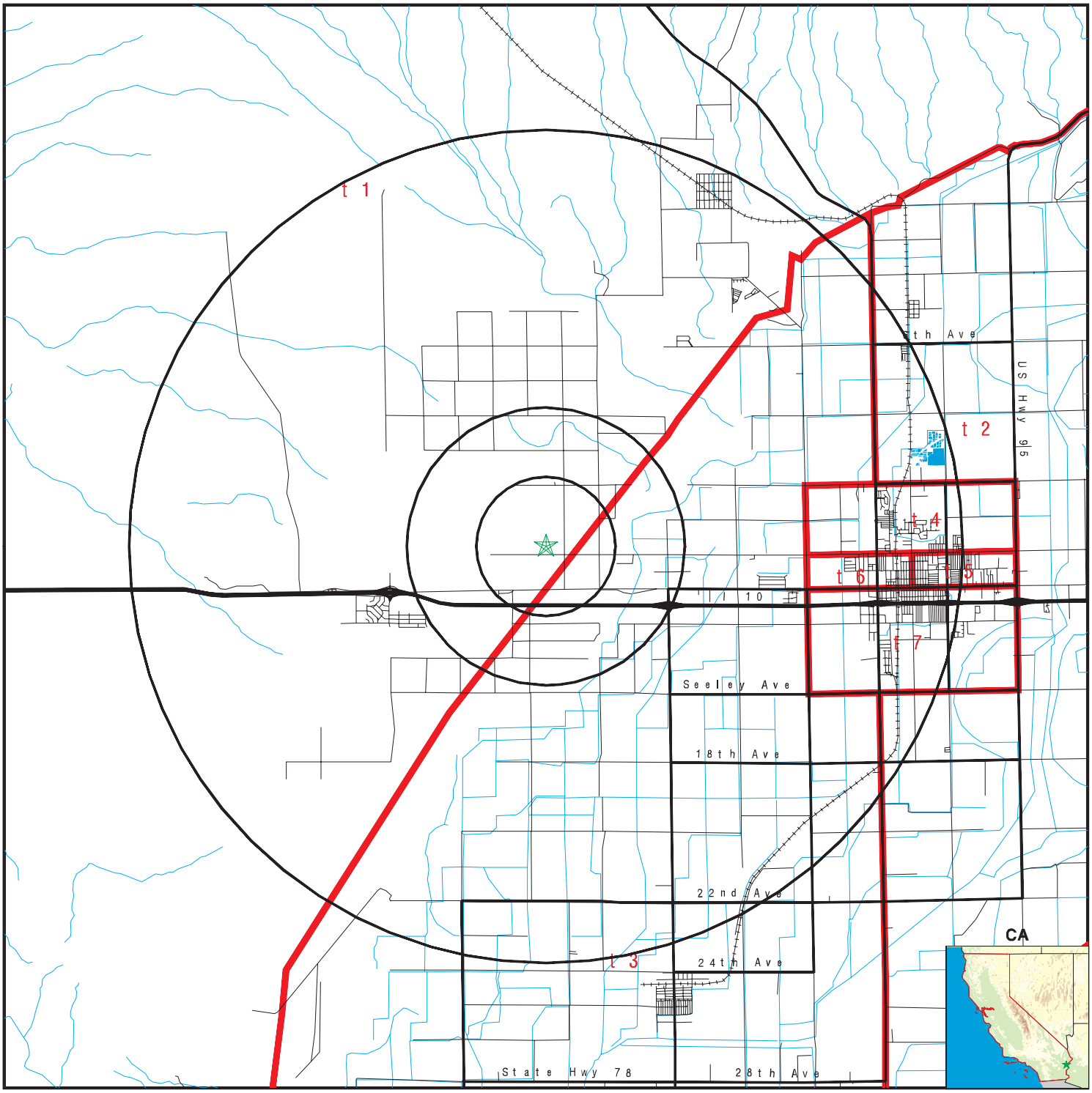
Other Public Receptors

Type	Within Search Radius	Sites Total
Day Care Centers:	X	14
Medical Centers:		
Nursing Homes:		
Schools:	X	7
Hospitals:	X	24
Colleges:	X	1
Arena:		
Prison:		

Environmental Receptors

Type	Within Search Radius	Sites Total
Federal Land:	X	4

CENSUS MAP - 4118446.1s



Target Property
Roads
Waterways
Census Tracts

0 2 4 8 Miles

N

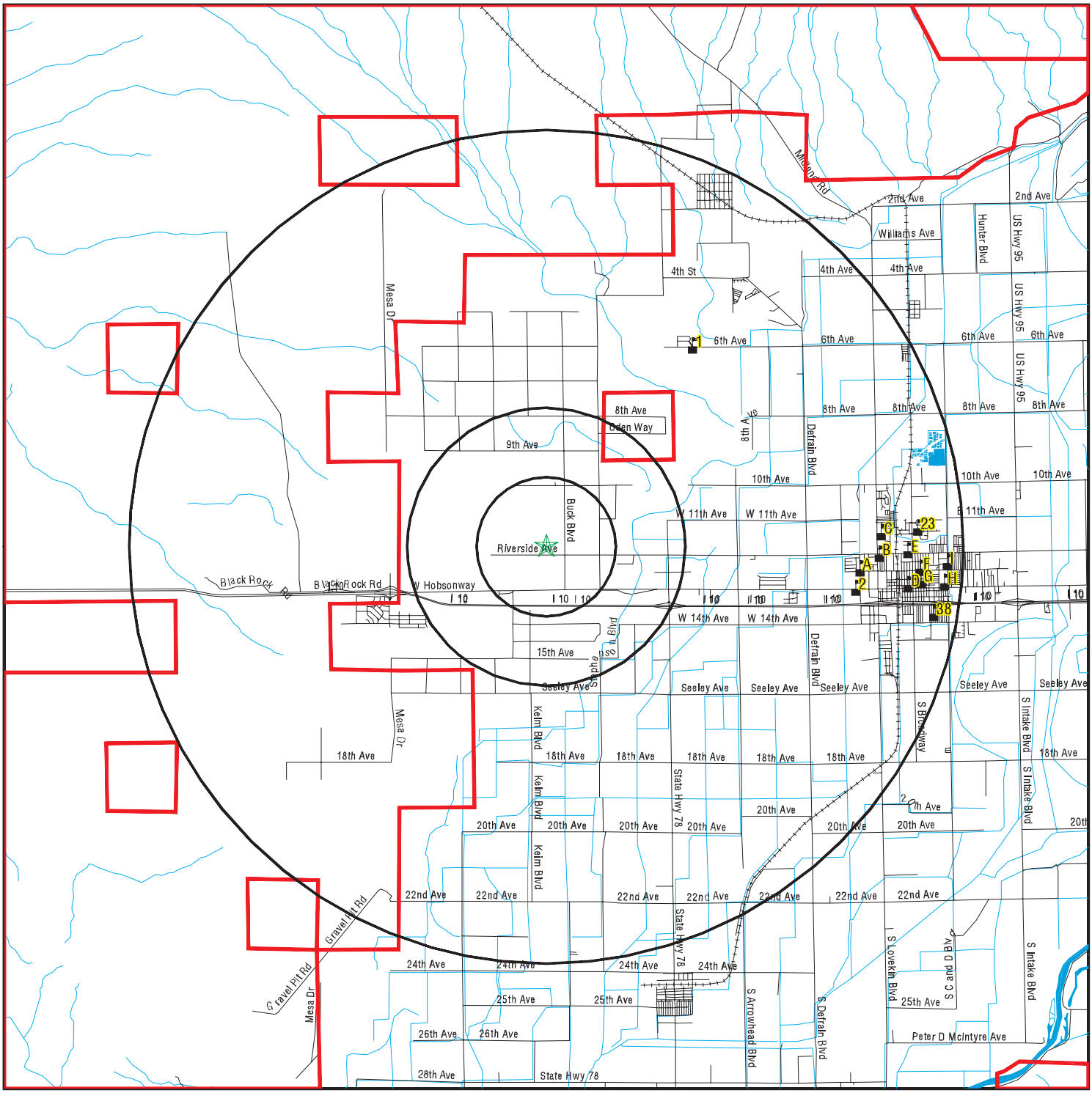
TARGET PROPERTY:	Irish Energy Project	CUSTOMER:	CH2M Hill, Inc.
ADDRESS:	Irish Energy Project	CONTACT:	Megan Grant
CITY/STATE/ZIP:	Blythe CA 92225	INQUIRY #:	4118446.1s
LAT/LONG:	33.6190 / 114.6883	DATE:	October 28, 2014 4:42 pm

Copyright © 2014 EDR, Inc. © 2010 Tele Atlas Rel. 07/2009.

CENSUS FINDINGS

Map ID	Tract Number	Total Population	Population in Radius	Total Area(sq.mi.)	Area in Radius(sq.mi.)
T1	0469.00	2043	32.8	3822.37	61.34
T2	0470.00	1749	87.0	53.76	2.67
T3	0459.00	1838	733.0	105.56	42.10
T4	0461.03	3030	2227.7	3.03	2.23
T5	0461.01	3060	1431.3	0.75	0.35
T6	0461.02	2027	2027.0	0.76	0.76
T7	0462.00	3341	2261.1	4.54	3.07

RECEPTOR MAP - 4118446.1s



- Target Property
- Roads
- Waterways
- Environmental or Public Receptor
- Federal Lands Linear Features
- Federal Lands Area

0 2 4 8 Miles

TARGET PROPERTY:	Irish Energy Project	CUSTOMER:	CH2M Hill, Inc.
ADDRESS:	Irish Energy Project	CONTACT:	Megan Grant
CITY/STATE/ZIP:	Blythe CA 92225	INQUIRY #:	4118446.1s
LAT/LONG:	33.6190 / 114.6883	DATE:	October 28, 2014 4:43 pm

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MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site		EDR ID Database
NA NNE 1-2 mi 7850 NA	Name: Feature: URL: Bureau: State: Is DOD?:	Not Reported Public Domain Land BLM Not Reported BLM CA No	CUSA144063 FED_LAND
NA SSW 2-4 mi 10893 NA	Name: Feature: URL: Bureau: State: Is DOD?:	Not Reported Public Domain Land BLM Not Reported BLM AZ-CA-NV-UT No	CUSA120946 FED_LAND
1 NE 2-4 mi 18817 Higher	Unitid: Instnm: Addr: City: Stabbr: Zip: Zip4: Unk: Fips: Oberge: Chfnm: Chftitle: Gentele: Fintele: Admtele: Ein: Duns: Opeid: Opeflag: Webaddr: Sector: Iclevel: Control: Hloffer: Ugoffer: Groffer: Fpoffer: Hdegoffer: Deggrant: Hbcu: Hospital: Medical: Tribal: Carnegie: Locale: Openpubl: Act:	120953 PALO VERDE COLLEGE ONE COLLEGE DRIVE BLYTHE CA 92225 Not Reported Not Reported 092225 8 James Hottois SUPT/PRESIDENT 7609215500 7609215500 7609215500 330833195 76051663 125900 1 www.paloverde.edu 4 2 1 3 1 2 2 40 1 2 2 2 2 40 3 1 A	SRCL20051000408 Colleges

Newid:	-2
Deathyr:	-2
Closedat:	-2
Cyactive:	1
Postsec:	1
Pseflag:	1
Pset4flg:	1
Rptmth:	1
Fte:	1550
Enrtot:	3507
Edr id:	SRCL20051000408

---

2 SRHO20070150021
East AHA Hospitals
4-6 mi
23728
Lower

Hospital type:	01
Num of times COO:	00
Owner date:	Not Reported
City:	BLYTHE
Has plan of corr:	Not Reported
Compliance status:	A
SSA county code:	430
Cross ref number:	Not Reported
FMS survey date:	Not Reported
Current survey date:	20051128
Medicare/Medicaid:	1
Facility name:	KENNETH G LUCERO MD
Intermediary/Carrier:	00542
Medicaid number:	Not Reported
Partcipation date:	19970820
Prior COO date:	Not Reported
Prior carrier:	Not Reported
Provider ID:	05D0932438
Record Status:	A
Region code:	09
Is Partial Record:	Not Reported
state abbrev:	CA
ssa state:	05
state region cd:	M1
street address:	1273 WEST HOBSONWAY
Phone num:	7609213468
Termination reason:	00
Term Date:	20080326
Purpose of action:	2
Provider control:	04
Zip:	92225
Fips state:	06
Fips cnty:	065
SSA MSA:	488
SSA MSA size code:	B
Date accredited:	Not Reported
Accred expire date:	Not Reported
Accred Org:	Not Reported
Num beds:	0000
Num cert beds:	0000
Source:	US_HOSPITAL_POSCLIA
Edr id:	SRHO20070150021

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site		EDR ID Database
A3			SRDCCA200741231
East	EDR ID:	SRDCCA200741231	Daycare
4-6 mi	Facility number:	334812665	
23893	Facility name:	"ESCUELA DE LA RAZA UNIDA, INC., CHILD DEV. CTR. "	
Lower	Facility eval. code:	0775	
	Facility office number:	09	
	Facility county number:	33	
	Facility type code:	830	
	Facility status code:	03	
	Address:	316 NORTH CARLTON	
	City:	BLYTHE	
	State:	CA	
	Zip:	92225	
	Alt. address:	P. O. BOX 910	
	City:	BLYTHE	
	State:	CA	
	Zip:	92226	
	Facility investor:	"GARNICA, CARMELA F. "	
	Licensee type:	C	
	License effective date:	31014	
	License expiration date:	Not Reported	
	License issue date:	031014	
	Program type:	MAXIMUM CAPACITY 21 INFANTS AGES BIRTH THRU 24 MONTHS. HOURS OF OPERATOPERATION MONDAY - FRIDAY 6:30AM THRU 5:30PM.	
	Original app. received date:	030203	
	Facility closed date:	Not Reported	
	Mailing address:	137 NORTH BRAODWAY	
	Mailing city:	BLYTHE	
	Mailing state:	CA	
	Mailing zip:	92225	
	Contact person:	CARMELA F. GARNICA	
	Facility capacity:	21	
	Type of clients served:	955	
	Facility phone:	7609222582	

A4			SRDCCA200753503
East	EDR ID:	SRDCCA200753503	Daycare
4-6 mi	Facility number:	334812664	
23893	Facility name:	"ESCUELA DE LA RAZA UNIDA, INC. CHILD DEV. CTR. "	
Lower	Facility eval. code:	0775	
	Facility office number:	09	
	Facility county number:	33	
	Facility type code:	850	
	Facility status code:	03	
	Address:	316 NORTH CARLTON	
	City:	BLYTHE	
	State:	CA	
	Zip:	92225	
	Alt. address:	P. O. BOX 910	
	City:	BLYTHE	
	State:	CA	
	Zip:	92226	
	Facility investor:	"GARNICA, CARMELA F. "	
	Licensee type:	C	
	License effective date:	31014	

License expiration date:	Not Reported
License issue date:	031014
Program type:	MAXIMUM OF 28 CHILDREN AGES 2 - KINDERGARTEN. HOURS OF OPERATION MONDAY - FRIDAY 6:30AM - 5:30PM.
Original app. received date:	030203
Facility closed date:	Not Reported
Mailing address:	137 NORTH BROADWAY
Mailing city:	BLYTHE
Mailing state:	CA
Mailing zip:	92225
Contact person:	CARMELA F. GARNICA
Facility capacity:	28
Type of clients served:	950
Facility phone:	7609229080

B5 SRPU20071010973
East Public Schools
4-6 mi
25112
Lower

Ncessch:	062964004599
Schname05:	FELIX J. APPLEBY ELEMENTARY
Mstreet05:	811 WEST CHANSLOR WAY
Mcity05:	BLYTHE
Mstate05:	CA
Mzip05:	92225
Mzip405:	2835
Member05:	533
Phone05:	(760) 922-7174
Locale05:	3
Type05:	1
Level05:	1
Gslo05:	KG
Gshi05:	05
Edr id:	SRPU20071010973

C6 SRPU20071010976
East Public Schools
4-6 mi
25140
Lower

Ncessch:	062964004602
Schname05:	PALO VERDE HIGH
Mstreet05:	667 NORTH LOVEKIN BLVD.
Mcity05:	BLYTHE
Mstate05:	CA
Mzip05:	92225
Mzip405:	1136
Member05:	913
Phone05:	(760) 922-7148
Locale05:	3
Type05:	1
Level05:	3
Gslo05:	09
Gshi05:	12
Edr id:	SRPU20071010976

C7 SRPU20071010974
East Public Schools
4-6 mi
25169
Lower

Ncessch:	062964004600
Schname05:	BLYTHE MIDDLE
Mstreet05:	825 NORTH LOVEKIN BLVD.

Mcity05:	BLYTHE
Mstate05:	CA
Mzip05:	92225
Mzip405:	1129
Member05:	835
Phone05:	(760) 922-1300
Locale05:	3
Type05:	1
Level05:	2
Gslo05:	06
Gshi05:	08
Edr id:	SRPU20071010974

B8 SRDCCA200704054
East Daycare
4-6 mi
25520
Lower

EDR ID:	SRDCCA200704054
Facility number:	330919916
Facility name:	COPELAND FAMILY DAY CARE
Facility eval. code:	0555
Facility office number:	09
Facility county number:	33
Facility type code:	810
Facility status code:	03
Address:	480 NORTH WILLOW
City:	BLYTHE
State:	CA
Zip:	92225
Alt. address:	480 NORTH WILLOW
City:	BLYTHE
State:	CA
Zip:	92225
Facility investor:	"COPELAND, MARY ANNE "
Licensee type:	A
License effective date:	930208
License expiration date:	Not Reported
License issue date:	930208
Program type:	"MAXIMUM CAPACITY: 12 CHILDREN, WITH NO MORE THAN 4 INFANTS, OR CAPACITY 14 CHILDREN WHEN 2 CHILDREN ARE AT LEAST 6 YEARS OF AGE WITH A MAXIMUM OF 3 INFANTS; PROPERTY OWNER/LANDLORD CONSENT IS REQUIRED "GUEST BEDROOM AND GARAGE
Original app. received date:	921117
Facility closed date:	Not Reported
Mailing address:	480 NORTH WILLOW
Mailing city:	BLYTHE
Mailing state:	CA
Mailing zip:	92225
Contact person:	"COPELAND, MARY ANNE "
Facility capacity:	14
Type of clients served:	960
Facility phone:	7609224851

C9 SRDCCO200704898
East Daycare
4-6 mi
26142
Lower

EDR ID:	SRDCCO200704898
Resource number:	32362
Facility type:	EFACB

Provider name:	FLORES TERESA
Mailing street:	726 N EUCALYPTUS
Mailing city:	BLYTHE
Mailing state:	CA
Mailing zip:	92225
Mailing zip 4:	0000
Location street:	726 N EUCALYPTUS
Location city:	BLYTHE
Location zip:	92225
Location zip 4:	0000
Telephone:	Not Reported
Division county cde:	Not Reported
Total capacity:	0

D10 SRHO20070159409
East
4-6 mi
27023
Lower

AHA Hospitals

Hospital type:	01
Num of times COO:	00
Owner date:	Not Reported
City:	BLYTHE
Has plan of corr:	Not Reported
Compliance status:	Not Reported
SSA county code:	430
Cross ref number:	Not Reported
FMS survey date:	Not Reported
Current survey date:	Not Reported
Medicare/Medicaid:	Not Reported
Facility name:	DARIN D LU MD
Intermediary/Carrier:	Not Reported
Medicaid number:	Not Reported
Partcipation date:	20030827
Prior COO date:	Not Reported
Prior carrier:	Not Reported
Provider ID:	05D1016399
Record Status:	A
Region code:	09
Is Partial Record:	Y
state abbrev:	CA
ssa state:	05
state region cd:	LAB
street address:	322 WEST HOBSONWAY, SUITE #3
Phone num:	7609212157
Termination reason:	00
Term Date:	20070826
Purpose of action:	Not Reported
Provider control:	04
Zip:	92225
Fips state:	06
Fips cnty:	065
SSA MSA:	488
SSA MSA size code:	B
Date accredited:	Not Reported
Accred expire date:	Not Reported
Accred Org:	Not Reported
Num beds:	0000
Num cert beds:	0000

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site		EDR ID Database
	Source:	US_HOSPITAL_POSCLIA	
	Edr id:	SRHO20070159409	

D11			SRHO20070150105
East	Hospital type:	01	AHA Hospitals
4-6 mi	Num of times COO:	00	
27038	Owner date:	Not Reported	
Lower	City:	BLYTHE	
	Has plan of corr:	Not Reported	
	Compliance status:	Not Reported	
	SSA county code:	430	
	Cross ref number:	Not Reported	
	FMS survey date:	Not Reported	
	Current survey date:	Not Reported	
	Medicare/Medicaid:	Not Reported	
	Facility name:	BLYTHE FAMILY HEALTH CLINIC	
	Intermediary/Carrier:	Not Reported	
	Medicaid number:	Not Reported	
	Partcipation date:	19980522	
	Prior COO date:	Not Reported	
	Prior carrier:	Not Reported	
	Provider ID:	05D0946376	
	Record Status:	A	
	Region code:	09	
	Is Partial Record:	Y	
	state abbrev:	CA	
	ssa state:	05	
	state region cd:	LAB	
	street address:	321 W HOBSONWAY	
	Phone num:	7609224981	
	Termination reason:	00	
	Term Date:	20080521	
	Purpose of action:	Not Reported	
	Provider control:	02	
	Zip:	92225	
	Fips state:	06	
	Fips cnty:	065	
	SSA MSA:	488	
	SSA MSA size code:	B	
	Date accredited:	Not Reported	
	Accred expire date:	Not Reported	
	Accred Org:	Not Reported	
	Num beds:	0000	
	Num cert beds:	0000	
	Source:	US_HOSPITAL_POSCLIA	
	Edr id:	SRHO20070150105	

E12			SRHO20070004245
East	Hospital type:	02	AHA Hospitals
4-6 mi	Num of times COO:	02	
27062	Owner date:	19871101	
Lower	City:	BLYTHE	
	Has plan of corr:	1	
	Compliance status:	A	

SSA county code:	430
Cross ref number:	05A374
FMS survey date:	Not Reported
Current survey date:	19871208
Medicare/Medicaid:	1
Facility name:	BLYTHE NURSING CARE CENTER
Intermediary/Carrier:	Not Reported
Medicaid number:	Not Reported
Partcipation date:	19740331
Prior COO date:	19740331
Prior carrier:	Not Reported
Provider ID:	05A029
Record Status:	A
Region code:	09
Is Partial Record:	Not Reported
state abbrev:	CA
ssa state:	05
state region cd:	BER
street address:	285 W CHANSLOR WAY
Phone num:	6199228176
Termination reason:	01
Term Date:	19880416
Purpose of action:	2
Provider control:	03
Zip:	92225
Fips state:	06
Fips cnty:	065
SSA MSA:	488
SSA MSA size code:	B
Date accredited:	Not Reported
Accred expire date:	Not Reported
Accred Org:	Not Reported
Num beds:	0050
Num cert beds:	0050
Source:	US_HOSPITAL_POSOTHER
Edr id:	SRHO20070004245

E13
East
4-6 mi
27062
Lower

SRHO20070005246
AHA Hospitals

Hospital type:	02
Num of times COO:	00
Owner date:	Not Reported
City:	BLYTHE
Has plan of corr:	1
Compliance status:	A
SSA county code:	430
Cross ref number:	555383
FMS survey date:	Not Reported
Current survey date:	19880923
Medicare/Medicaid:	1
Facility name:	BLYTHE NURSING CARE CENTER
Intermediary/Carrier:	Not Reported
Medicaid number:	Not Reported
Partcipation date:	19880516
Prior COO date:	Not Reported
Prior carrier:	Not Reported

Provider ID:	05A374
Record Status:	A
Region code:	09
Is Partial Record:	Not Reported
state abbrev:	CA
ssa state:	05
state region cd:	BER
street address:	285 N CHANSLOR WAY
Phone num:	6199228176
Termination reason:	01
Term Date:	19890801
Purpose of action:	2
Provider control:	03
Zip:	92225
Fips state:	06
Fips cnty:	065
SSA MSA:	488
SSA MSA size code:	B
Date accredited:	Not Reported
Accred expire date:	Not Reported
Accred Org:	Not Reported
Num beds:	0049
Num cert beds:	0049
Source:	US_HOSPITAL_POSOTHER
Edr id:	SRHO20070005246

E14
East
4-6 mi
27062
Lower

SRHO20070144362
AHA Hospitals

Hospital type:	01
Num of times COO:	00
Owner date:	Not Reported
City:	BLYTHE
Has plan of corr:	Not Reported
Compliance status:	Not Reported
SSA county code:	430
Cross ref number:	Not Reported
FMS survey date:	Not Reported
Current survey date:	Not Reported
Medicare/Medicaid:	Not Reported
Facility name:	BLYTHE NURSING CARE CENTER
Intermediary/Carrier:	Not Reported
Medicaid number:	Not Reported
Partcipation date:	19940829
Prior COO date:	Not Reported
Prior carrier:	Not Reported
Provider ID:	05D0890942
Record Status:	A
Region code:	09
Is Partial Record:	Y
state abbrev:	CA
ssa state:	05
state region cd:	LAB
street address:	285 W CHANSLOR WAY
Phone num:	6199228176
Termination reason:	00
Term Date:	20080828

Purpose of action:	Not Reported
Provider control:	04
Zip:	92225
Fips state:	06
Fips cnty:	065
SSA MSA:	488
SSA MSA size code:	B
Date accredited:	Not Reported
Accred expire date:	Not Reported
Accred Org:	Not Reported
Num beds:	0000
Num cert beds:	0000
Source:	US_HOSPITAL_POSCLIA
Edr id:	SRHO20070144362

D15
East
4-6 mi
27761
Lower

SRHO20070160940
AHA Hospitals

Hospital type:	01
Num of times COO:	00
Owner date:	Not Reported
City:	BLYTHE
Has plan of corr:	Not Reported
Compliance status:	Not Reported
SSA county code:	430
Cross ref number:	Not Reported
FMS survey date:	Not Reported
Current survey date:	Not Reported
Medicare/Medicaid:	Not Reported
Facility name:	FRANCISCO J TEJEDA MD MEDICAL CLINIC
Intermediary/Carrier:	Not Reported
Medicaid number:	Not Reported
Partcipation date:	20050823
Prior COO date:	Not Reported
Prior carrier:	Not Reported
Provider ID:	05D1044558
Record Status:	A
Region code:	09
Is Partial Record:	Y
state abbrev:	CA
ssa state:	05
state region cd:	M1
street address:	144 W HOBSONWAY
Phone num:	7609220840
Termination reason:	00
Term Date:	20070822
Purpose of action:	Not Reported
Provider control:	04
Zip:	92225
Fips state:	06
Fips cnty:	065
SSA MSA:	488
SSA MSA size code:	B
Date accredited:	Not Reported
Accred expire date:	Not Reported
Accred Org:	Not Reported
Num beds:	0000

Num cert beds:	0000	
Source:	US_HOSPITAL_POSCLIA	
Edr id:	SRHO20070160940	

E16 SRPU20071010978
East Public Schools
4-6 mi

Ncessch:	062964004604
Schname05:	MARGARET WHITE ELEMENTARY
Mstreet05:	610 NORTH BROADWAY
Mcity05:	BLYTHE
Mstate05:	CA
Mzip05:	92225
Mzip405:	1331
Member05:	694
Phone05:	(760) 922-5159
Locale05:	3
Type05:	1
Level05:	1
Gslo05:	KG
Gshi05:	05
Edr id:	SRPU20071010978

27799
Lower

E17 SRHO20070158992
East AHA Hospitals
4-6 mi

Hospital type:	01
Num of times COO:	00
Owner date:	Not Reported
City:	BLYTHE
Has plan of corr:	Not Reported
Compliance status:	A
SSA county code:	430
Cross ref number:	Not Reported
FMS survey date:	Not Reported
Current survey date:	20060321
Medicare/Medicaid:	1
Facility name:	KEITH MARK GROSS MD INC
Intermediary/Carrier:	Not Reported
Medicaid number:	Not Reported
Partcipation date:	20050624
Prior COO date:	Not Reported
Prior carrier:	Not Reported
Provider ID:	05D1042333
Record Status:	A
Region code:	09
Is Partial Record:	Not Reported
state abbrev:	CA
ssa state:	05
state region cd:	M1
street address:	500 NORTH BROADWAY
Phone num:	7609213376
Termination reason:	00
Term Date:	20080320
Purpose of action:	1
Provider control:	04
Zip:	92225
Fips state:	06

27817
Lower

Fips cnty:	065	
SSA MSA:	488	
SSA MSA size code:	B	
Date accredited:	Not Reported	
Accred expire date:	Not Reported	
Accred Org:	Not Reported	
Num beds:	0000	
Num cert beds:	0000	
Source:	US_HOSPITAL_POSCLIA	
Edr id:	SRHO20070158992	

E18 SRHO20070141583
East AHA Hospitals
4-6 mi
27817
Lower

Hospital type:	01
Num of times COO:	00
Owner date:	Not Reported
City:	BLYTHE
Has plan of corr:	Not Reported
Compliance status:	Not Reported
SSA county code:	430
Cross ref number:	Not Reported
FMS survey date:	Not Reported
Current survey date:	Not Reported
Medicare/Medicaid:	Not Reported
Facility name:	LEON PETER Y CHUA MD
Intermediary/Carrier:	Not Reported
Medicaid number:	Not Reported
Partcipation date:	19950411
Prior COO date:	Not Reported
Prior carrier:	Not Reported
Provider ID:	05D0724940
Record Status:	A
Region code:	09
Is Partial Record:	Y
state abbrev:	CA
ssa state:	05
state region cd:	LAB
street address:	500 N BROADWAY ST, STE 17
Phone num:	6199222152
Termination reason:	00
Term Date:	20080831
Purpose of action:	Not Reported
Provider control:	04
Zip:	92225
Fips state:	06
Fips cnty:	065
SSA MSA:	488
SSA MSA size code:	B
Date accredited:	Not Reported
Accred expire date:	Not Reported
Accred Org:	Not Reported
Num beds:	0000
Num cert beds:	0000
Source:	US_HOSPITAL_POSCLIA
Edr id:	SRHO20070141583

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site		EDR ID Database
E19			SRHO20070145971
East	Hospital type:	01	AHA Hospitals
4-6 mi	Num of times COO:	00	
27817	Owner date:	Not Reported	
Lower	City:	BLYTHE	
	Has plan of corr:	1	
	Compliance status:	A	
	SSA county code:	430	
	Cross ref number:	Not Reported	
	FMS survey date:	Not Reported	
	Current survey date:	19940825	
	Medicare/Medicaid:	1	
	Facility name:	CARDIOPUL SERVS ART BLD GAS LABORATORY	
	Intermediary/Carrier:	00542	
	Medicaid number:	Not Reported	
	Partcipation date:	19940602	
	Prior COO date:	Not Reported	
	Prior carrier:	Not Reported	
	Provider ID:	05D0886990	
	Record Status:	A	
	Region code:	09	
	Is Partial Record:	Not Reported	
	state abbrev:	CA	
	ssa state:	05	
	state region cd:	M1	
	street address:	500 NORTH BROADWAY STREET SUITE 10	
	Phone num:	6199222152	
	Termination reason:	04	
	Term Date:	19960911	
	Purpose of action:	1	
	Provider control:	04	
	Zip:	92225	
	Fips state:	06	
	Fips cnty:	065	
	SSA MSA:	488	
	SSA MSA size code:	B	
	Date accredited:	Not Reported	
	Accred expire date:	Not Reported	
	Accred Org:	Not Reported	
	Num beds:	0000	
	Num cert beds:	0000	
	Source:	US_HOSPITAL_POSCLIA	
	Edr id:	SRHO20070145971	

D20			SRHO20070160710
East	Hospital type:	01	AHA Hospitals
4-6 mi	Num of times COO:	00	
27984	Owner date:	Not Reported	
Lower	City:	BLYTHE	
	Has plan of corr:	Not Reported	
	Compliance status:	Not Reported	
	SSA county code:	430	
	Cross ref number:	Not Reported	
	FMS survey date:	Not Reported	
	Current survey date:	Not Reported	

Medicare/Medicaid:	Not Reported
Facility name:	SALLY MORGAN NURSE PRACTITIONER
Intermediary/Carrier:	Not Reported
Medicaid number:	Not Reported
Partcipation date:	20030611
Prior COO date:	Not Reported
Prior carrier:	Not Reported
Provider ID:	05D1013578
Record Status:	A
Region code:	09
Is Partial Record:	Y
state abbrev:	CA
ssa state:	05
state region cd:	LAB
street address:	158 N BROADWAY
Phone num:	7609218484
Termination reason:	08
Term Date:	20050610
Purpose of action:	Not Reported
Provider control:	04
Zip:	92225
Fips state:	06
Fips cnty:	065
SSA MSA:	488
SSA MSA size code:	B
Date accredited:	Not Reported
Accred expire date:	Not Reported
Accred Org:	Not Reported
Num beds:	0000
Num cert beds:	0000
Source:	US_HOSPITAL_POSCLIA
Edr id:	SRHO20070160710

D21 SRHO20070149183
East AHA Hospitals
4-6 mi
27984
Lower

Hospital type:	01
Num of times COO:	00
Owner date:	Not Reported
City:	BLYTHE
Has plan of corr:	Not Reported
Compliance status:	Not Reported
SSA county code:	430
Cross ref number:	Not Reported
FMS survey date:	Not Reported
Current survey date:	Not Reported
Medicare/Medicaid:	Not Reported
Facility name:	DESERT HOME HEALTH CARE
Intermediary/Carrier:	Not Reported
Medicaid number:	Not Reported
Partcipation date:	19970910
Prior COO date:	Not Reported
Prior carrier:	Not Reported
Provider ID:	05D0933305
Record Status:	A
Region code:	09
Is Partial Record:	Y

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site	EDR ID Database

state abbrev:	CA
ssa state:	05
state region cd:	LAB
street address:	158 NORTH BROADWAY
Phone num:	7609210042
Termination reason:	08
Term Date:	19970910
Purpose of action:	Not Reported
Provider control:	04
Zip:	92225
Fips state:	06
Fips cnty:	065
SSA MSA:	488
SSA MSA size code:	B
Date accredited:	Not Reported
Accred expire date:	Not Reported
Accred Org:	Not Reported
Num beds:	0000
Num cert beds:	0000
Source:	US_HOSPITAL_POSCLIA
Edr id:	SRHO20070149183

D22 SRPR20051024377
East Private Schools
4-6 mi
27990
Lower

Pss school id:	A0300249
Pss inst:	ESCUELA DE LA RAZA UNIDA
Lograde:	K
Higrade:	12
Pss address:	137 N BROADWAY
Pss city:	BLYTHE
Pss county no:	065
Pss county fips:	06065
Pss stabb:	CA
Pss fips:	06
Pss zip5:	92225
Pss phone:	7609222582
Pss sch days:	175
Pss stu day hrs:	6.5
Pss library:	Yes
Pss enroll ug:	2
Pss enroll pk:	Not Reported
Pss enroll k:	1
Pss enroll 1:	1
Pss enroll 2:	1
Pss enroll 3:	1
Pss enroll 4:	1
Pss enroll 5:	1
Pss enroll 6:	Not Reported
Pss enroll 7:	1
Pss enroll 8:	6
Pss enroll 9:	3
Pss enroll 10:	Not Reported
Pss enroll 11:	1
Pss enroll 12:	1
Pss enroll t:	20
Pss enroll tk12:	20

Pss race ai:	0
Pss race as:	0
Pss race h:	17
Pss race b:	2
Pss race w:	Not Reported
Pss fte teach:	2.3
Pss locale:	3
Pss coed:	1
Pss type:	1
Pss level:	3
Pss relig:	3
Pss comm type:	2
Pss indian pct:	0
Pss asian pct:	0
Pss hisp pct:	85
Pss black pct:	10
Pss white pct:	Not Reported
Pss stdtch rt:	8.7
Pss orient:	29
Pss county name:	RIVERSIDE
Pss assoc 1:	No Membership Association
Pss assoc 2:	Not Reported
Pss assoc 3:	Not Reported
Pss assoc 4:	Not Reported
Pss assoc 5:	Not Reported
Pss assoc 6:	Not Reported
Pss assoc 7:	Not Reported
Source:	NCESDATA_E72D09B4
Edr id:	SRPR20051024377

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23 SRDCCA200711601
East Daycare
4-6 mi
28250
Lower

EDR ID:	SRDCCA200711601
Facility number:	334802724
Facility name:	MC CARTHY FAMILY DAY CARE
Facility eval. code:	0555
Facility office number:	09
Facility county number:	33
Facility type code:	810
Facility status code:	03
Address:	205 EUNICE CIRCLE
City:	BLYTHE
State:	CA
Zip:	92225
Alt. address:	205 EUNICE CIRCLE
City:	BLYTHE
State:	CA
Zip:	92225
Facility investor:	"MC CARTHY, MALINDA "
Licensee type:	A
License effective date:	960606
License expiration date:	Not Reported
License issue date:	960606
Program type:	"MAXIMUM CAPACITY: 12 CHILDREN, WITH NO MORE THAN 4 INFANTS, OR CAPACITY 14 CHILDREN WHEN 2 CHILDREN ARE AT LEAST 6 YEARS OF AGE WITH A MAXIMUM OF 3 INFANTS; PROPERTY OWNER/LANDLORD CONSENT IS REQUIRED "OFF LIMITS: UPSTAIRS AREA AND GARAGE

Original app. received date: 960423
Facility closed date: Not Reported
Mailing address: 205 EUNICE CIRCLE
Mailing city: BLYTHE
Mailing state: CA
Mailing zip: 92225
Contact person: "MC CARTHY, MALINDA "
Facility capacity: 14
Type of clients served: 960
Facility phone: 7609229261

F24 SRDCCA200739504
East EDR ID: SRDCCA200739504 Daycare
4-6 mi Facility number: 334818754
28252 Facility name: RIVERA FAMILY CHILD CARE
Lower Facility eval. code: 0555
Facility office number: 09
Facility county number: 33
Facility type code: 810
Facility status code: 03
Address: 419 N. 1ST STREET
City: BLYTHE
State: CA
Zip: 92225
Alt. address: 419 N. 1ST STREET
City: BLYTHE
State: CA
Zip: 92225
Facility investor: "RIVERA, LETICIA "
Licensee type: A
License effective date: 70329
License expiration date: Not Reported
License issue date: 070329
Program type: MAX. CAP(WHEN THERE IS AN ASSISTANT PRESENT): 12 - NO MORE THAN 4 INFANTS. CAP 14 - NO MORE THAN 3 INFANTS. 1 CHILD IN KINDERGARTEN OR ELEMENTARY SCHOOL AND 1 CHILD AT LEAST AGE 6.
Original app. received date: 070307
Facility closed date: Not Reported
Mailing address: 419 N. 1ST STREET
Mailing city: BLYTHE
Mailing state: CA
Mailing zip: 92225
Contact person: "RIVERA, LETICIA "
Facility capacity: 14
Type of clients served: 960
Facility phone: 7609213904

F25 SRDCCA200727230
East EDR ID: SRDCCA200727230 Daycare
4-6 mi Facility number: 334815071
28293 Facility name: ROPPOLO FAMILY CHILD CARE
Lower Facility eval. code: 0555
Facility office number: 09
Facility county number: 33

Facility type code:	810
Facility status code:	03
Address:	325 NORTH FIRST STREET
City:	BLYTHE
State:	CA
Zip:	92225
Alt. address:	325 NORTH FIRST STREET
City:	BLYTHE
State:	CA
Zip:	92225
Facility investor:	"ROPPOLO, SHELLY "
Licensee type:	A
License effective date:	40722
License expiration date:	Not Reported
License issue date:	040722
Program type:	"MAXIMUM CAPACITY: 6 CHILDREN WITH NO MORE THAN 3 INFANTS, OR 4 INFANTSONLY, OR CAPACITY 8 CHILDREN WHEN 2 ARE AT LEAST 6 YEARS OF AGE WITH AMAXIMUM OF 2 INFANTS.OFF LIMITS:BASEMENT AND ALL BEDROOMS. "
Original app. received date:	040504
Facility closed date:	Not Reported
Mailing address:	325 NORTH FIRST STREET
Mailing city:	BLYTHE
Mailing state:	CA
Mailing zip:	92225
Contact person:	"ROPPOLO, SHELLY "
Facility capacity:	8
Type of clients served:	960
Facility phone:	7609212437

F26
East
4-6 mi
28343
Lower

SRHO20070139735
AHA Hospitals

Hospital type:	01
Num of times COO:	00
Owner date:	Not Reported
City:	BLYTHE
Has plan of corr:	1
Compliance status:	A
SSA county code:	430
Cross ref number:	Not Reported
FMS survey date:	Not Reported
Current survey date:	19971218
Medicare/Medicaid:	1
Facility name:	PALO VERDE HOSP ARTERIAL BLOOD GAS LAB
Intermediary/Carrier:	00542
Medicaid number:	Not Reported
Partcipation date:	19920901
Prior COO date:	Not Reported
Prior carrier:	Not Reported
Provider ID:	05D0713330
Record Status:	A
Region code:	09
Is Partial Record:	Not Reported
state abbrev:	CA
ssa state:	05
state region cd:	M1

street address:	250 N FIRST STREET
Phone num:	6199224115
Termination reason:	00
Term Date:	20070307
Purpose of action:	2
Provider control:	04
Zip:	92225
Fips state:	06
Fips cnty:	065
SSA MSA:	488
SSA MSA size code:	B
Date accredited:	Not Reported
Accred expire date:	Not Reported
Accred Org:	Not Reported
Num beds:	0000
Num cert beds:	0000
Source:	US_HOSPITAL_POSCLIA
Edr id:	SRHO20070139735

F27 SRHO20070006967
East AHA Hospitals
4-6 mi

28343 Hospital type:	01
Lower Num of times COO:	02
Owner date:	Not Reported
City:	BLYTHE
Has plan of corr:	1
Compliance status:	A
SSA county code:	430
Cross ref number:	Not Reported
FMS survey date:	Not Reported
Current survey date:	19980203
Medicare/Medicaid:	1
Facility name:	PALO VERDE HOSPITAL
Intermediary/Carrier:	00040
Medicaid number:	Not Reported
Partcipation date:	19660701
Prior COO date:	19930101
Prior carrier:	Not Reported
Provider ID:	050423
Record Status:	A
Region code:	09
Is Partial Record:	Not Reported
state abbrev:	CA
ssa state:	05
state region cd:	RIV
street address:	250 NORTH FIRST STREET
Phone num:	7609224115
Termination reason:	00
Term Date:	Not Reported
Purpose of action:	2
Provider control:	04
Zip:	92225
Fips state:	06
Fips cnty:	065
SSA MSA:	488
SSA MSA size code:	B

Date accredited:	19981015
Accred expire date:	20011014
Accred Org:	1
Num beds:	0055
Num cert beds:	0055
Source:	US_HOSPITAL_POSOTHER
Edr id:	SRHO20070006967

F28 SRHO20070132024
East AHA Hospitals
4-6 mi
28343
Lower

Hospital type:	01
Num of times COO:	00
Owner date:	Not Reported
City:	BLYTHE
Has plan of corr:	1
Compliance status:	A
SSA county code:	430
Cross ref number:	Not Reported
FMS survey date:	Not Reported
Current survey date:	19971218
Medicare/Medicaid:	1
Facility name:	PALO VERDE HOSPITAL LABORATORY
Intermediary/Carrier:	00542
Medicaid number:	Not Reported
Partcipation date:	19920901
Prior COO date:	Not Reported
Prior carrier:	Not Reported
Provider ID:	05D0571998
Record Status:	A
Region code:	09
Is Partial Record:	Not Reported
state abbrev:	CA
ssa state:	05
state region cd:	M1
street address:	250 N FIRST STREET
Phone num:	6199224115
Termination reason:	00
Term Date:	20070307
Purpose of action:	2
Provider control:	04
Zip:	92225
Fips state:	06
Fips cnty:	065
SSA MSA:	488
SSA MSA size code:	B
Date accredited:	Not Reported
Accred expire date:	Not Reported
Accred Org:	Not Reported
Num beds:	0000
Num cert beds:	0000
Source:	US_HOSPITAL_POSCLIA
Edr id:	SRHO20070132024

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site		EDR ID Database
G29			SRHO20070149828
East	Hospital type:	01	AHA Hospitals
4-6 mi	Num of times COO:	00	
28362	Owner date:	Not Reported	
Lower	City:	BLYTHE	
	Has plan of corr:	Not Reported	
	Compliance status:	Not Reported	
	SSA county code:	430	
	Cross ref number:	Not Reported	
	FMS survey date:	Not Reported	
	Current survey date:	Not Reported	
	Medicare/Medicaid:	Not Reported	
	Facility name:	PATRICK N BAYS DO	
	Intermediary/Carrier:	Not Reported	
	Medicaid number:	Not Reported	
	Partcipation date:	19980917	
	Prior COO date:	Not Reported	
	Prior carrier:	Not Reported	
	Provider ID:	05D0951433	
	Record Status:	A	
	Region code:	09	
	Is Partial Record:	Not Reported	
	state abbrev:	CA	
	ssa state:	05	
	state region cd:	LAB	
	street address:	205 N FIRST STREET SUITE A	
	Phone num:	7609226355	
	Termination reason:	08	
	Term Date:	19980918	
	Purpose of action:	Not Reported	
	Provider control:	04	
	Zip:	92225	
	Fips state:	06	
	Fips cnty:	065	
	SSA MSA:	488	
	SSA MSA size code:	B	
	Date accredited:	Not Reported	
	Accred expire date:	Not Reported	
	Accred Org:	Not Reported	
	Num beds:	0000	
	Num cert beds:	0000	
	Source:	US_HOSPITAL_POSCLIA	
	Edr id:	SRHO20070149828	

G30			SRHO20070151101
East	Hospital type:	01	AHA Hospitals
4-6 mi	Num of times COO:	00	
28362	Owner date:	Not Reported	
Lower	City:	BLYTHE	
	Has plan of corr:	Not Reported	
	Compliance status:	Not Reported	
	SSA county code:	430	
	Cross ref number:	Not Reported	
	FMS survey date:	Not Reported	
	Current survey date:	Not Reported	

Medicare/Medicaid:	Not Reported
Facility name:	LEONEL L RODRIGUEZ MD
Intermediary/Carrier:	Not Reported
Medicaid number:	Not Reported
Partcipation date:	19980723
Prior COO date:	Not Reported
Prior carrier:	Not Reported
Provider ID:	05D0949010
Record Status:	A
Region code:	09
Is Partial Record:	Y
state abbrev:	CA
ssa state:	05
state region cd:	LAB
street address:	205 N FIRST STREET SUITE C
Phone num:	7609224115
Termination reason:	00
Term Date:	20080722
Purpose of action:	Not Reported
Provider control:	04
Zip:	92225
Fips state:	06
Fips cnty:	065
SSA MSA:	488
SSA MSA size code:	B
Date accredited:	Not Reported
Accred expire date:	Not Reported
Accred Org:	Not Reported
Num beds:	0000
Num cert beds:	0000
Source:	US_HOSPITAL_POSCLIA
Edr id:	SRHO20070151101

G31
East
4-6 mi
28362
Lower

SRHO20070161110
AHA Hospitals

Hospital type:	01
Num of times COO:	00
Owner date:	Not Reported
City:	BLYTHE
Has plan of corr:	Not Reported
Compliance status:	Not Reported
SSA county code:	430
Cross ref number:	Not Reported
FMS survey date:	Not Reported
Current survey date:	Not Reported
Medicare/Medicaid:	Not Reported
Facility name:	ANJANI THAKUR MD INC
Intermediary/Carrier:	Not Reported
Medicaid number:	Not Reported
Partcipation date:	20050923
Prior COO date:	Not Reported
Prior carrier:	Not Reported
Provider ID:	05D1045800
Record Status:	A
Region code:	09
Is Partial Record:	Y

state abbrev:	CA
ssa state:	05
state region cd:	M1
street address:	205 N FIRST ST
Phone num:	7609221022
Termination reason:	00
Term Date:	20070922
Purpose of action:	Not Reported
Provider control:	04
Zip:	92225
Fips state:	06
Fips cnty:	065
SSA MSA:	488
SSA MSA size code:	B
Date accredited:	Not Reported
Accred expire date:	Not Reported
Accred Org:	Not Reported
Num beds:	0000
Num cert beds:	0000
Source:	US_HOSPITAL_POSCLIA
Edr id:	SRHO20070161110

G32 SRHO20070151664
East AHA Hospitals
4-6 mi

Hospital type:	01
Num of times COO:	00
Owner date:	Not Reported
City:	BLYTHE
Has plan of corr:	Not Reported
Compliance status:	Not Reported
SSA county code:	430
Cross ref number:	Not Reported
FMS survey date:	Not Reported
Current survey date:	Not Reported
Medicare/Medicaid:	Not Reported
Facility name:	HOSSAIN SAHLOLBEI MD
Intermediary/Carrier:	Not Reported
Medicaid number:	Not Reported
Partcipation date:	19980619
Prior COO date:	Not Reported
Prior carrier:	Not Reported
Provider ID:	05D0947616
Record Status:	A
Region code:	09
Is Partial Record:	Not Reported
state abbrev:	CA
ssa state:	05
state region cd:	LAB
street address:	205 N FIRST STREET, SUITE B
Phone num:	7609212342
Termination reason:	01
Term Date:	19981006
Purpose of action:	Not Reported
Provider control:	04
Zip:	92225
Fips state:	06

Fips cnty:	065
SSA MSA:	488
SSA MSA size code:	B
Date accredited:	Not Reported
Accred expire date:	Not Reported
Accred Org:	Not Reported
Num beds:	0000
Num cert beds:	0000
Source:	US_HOSPITAL_POSCLIA
Edr id:	SRHO20070151664

F33 SRDCCA200731832
East Daycare
4-6 mi
28660
Lower

EDR ID:	SRDCCA200731832
Facility number:	334816673
Facility name:	ZAMORA FAMILY CHILD CARE
Facility eval. code:	0555
Facility office number:	09
Facility county number:	33
Facility type code:	810
Facility status code:	03
Address:	401 N. 2ND ST.
City:	BLYTHE
State:	CA
Zip:	92225
Alt. address:	401 N. 2ND ST.
City:	BLYTHE
State:	CA
Zip:	92225
Facility investor:	"ZAMORA, THERESA "
Licensee type:	A
License effective date:	60202
License expiration date:	Not Reported
License issue date:	060202
Program type:	"MAX. CAP: 6 - NO MORE THAN 3 INFANTS OR 4 INFANTS ONLY. CAP 8 - NO MORE THAN 2 INFANTS, 1 CHILD IN KINDERGARTEN OR ELEMENTARY SCHOOL AND 1 CHILD AT LEAST AGE 6. ""OFF LIMIT AREAS: ALL BEDROOMS, LAUNDRY ROOM, GARAGE & FRONT YARD "
Original app. received date:	050715
Facility closed date:	Not Reported
Mailing address:	401 N. 2ND ST.
Mailing city:	BLYTHE
Mailing state:	CA
Mailing zip:	92225
Contact person:	"ZAMORA, THERESA "
Facility capacity:	8
Type of clients served:	960
Facility phone:	7609225196

G34 SRHO20070132023
East AHA Hospitals
4-6 mi
28685
Lower

Hospital type:	01
Num of times COO:	00
Owner date:	Not Reported
City:	BLYTHE

Has plan of corr:	1
Compliance status:	A
SSA county code:	430
Cross ref number:	Not Reported
FMS survey date:	Not Reported
Current survey date:	19980205
Medicare/Medicaid:	1
Facility name:	ROGER C SLATER MD INC
Intermediary/Carrier:	00542
Medicaid number:	Not Reported
Partcipation date:	19920901
Prior COO date:	Not Reported
Prior carrier:	Not Reported
Provider ID:	05D0571989
Record Status:	A
Region code:	09
Is Partial Record:	Not Reported
state abbrev:	CA
ssa state:	05
state region cd:	M1
street address:	240 EAST HOBSONWAY
Phone num:	6199222155
Termination reason:	12
Term Date:	20000105
Purpose of action:	2
Provider control:	04
Zip:	92225
Fips state:	06
Fips cnty:	065
SSA MSA:	488
SSA MSA size code:	B
Date accredited:	Not Reported
Accred expire date:	Not Reported
Accred Org:	Not Reported
Num beds:	0000
Num cert beds:	0000
Source:	US_HOSPITAL_POSCLIA
Edr id:	SRHO20070132023

G35
East
4-6 mi
28685
Lower

SRHO20070153768
AHA Hospitals

Hospital type:	01
Num of times COO:	00
Owner date:	Not Reported
City:	BLYTHE
Has plan of corr:	Not Reported
Compliance status:	Not Reported
SSA county code:	430
Cross ref number:	Not Reported
FMS survey date:	Not Reported
Current survey date:	Not Reported
Medicare/Medicaid:	Not Reported
Facility name:	RAZAN AMMARI MD
Intermediary/Carrier:	Not Reported
Medicaid number:	Not Reported
Partcipation date:	20001222

Prior COO date:	Not Reported
Prior carrier:	Not Reported
Provider ID:	05D0981315
Record Status:	A
Region code:	09
Is Partial Record:	Y
state abbrev:	CA
ssa state:	05
state region cd:	LAB
street address:	240 E HOBSONWAY
Phone num:	7609222155
Termination reason:	08
Term Date:	20041221
Purpose of action:	Not Reported
Provider control:	04
Zip:	92225
Fips state:	06
Fips cnty:	065
SSA MSA:	488
SSA MSA size code:	B
Date accredited:	Not Reported
Accred expire date:	Not Reported
Accred Org:	Not Reported
Num beds:	0000
Num cert beds:	0000
Source:	US_HOSPITAL_POSCLIA
Edr id:	SRHO20070153768

F36
East
4-6 mi
28890
Lower

SRDCCA200744229
Daycare

EDR ID:	SRDCCA200744229
Facility number:	330908924
Facility name:	COMMUNITY UNITED METHODIST CHURCH PRESCHOOL
Facility eval. code:	0775
Facility office number:	09
Facility county number:	33
Facility type code:	840
Facility status code:	03
Address:	345 E. BARNARD
City:	BLYTHE
State:	CA
Zip:	92225
Alt. address:	345 E. BARNARD STREET
City:	BLYTHE
State:	CA
Zip:	92225
Facility investor:	COMMUNITY UNITED METHODIST CHURCH
Licensee type:	C
License effective date:	930803
License expiration date:	Not Reported
License issue date:	880919
Program type:	29 CHILDREN AGES 6 THROUGH 12 YEARS IN ROOMS #1 & #2. REST ROOMS IN CHURCH. HOURS: MONDAY THROUGH FRIDAY 6:30AM TO 5:30PM.
Original app. received date:	880912
Facility closed date:	Not Reported
Mailing address:	345 E. BARNARD STREET

Mailing city:	BLYTHE	
Mailing state:	CA	
Mailing zip:	92225	
Contact person:	BRENDA ANDERSON	
Facility capacity:	29	
Type of clients served:	950	
Facility phone:	7609223210	

G37 SRDCCA200710875
East
4-6 mi
29278
Lower

EDR ID:	SRDCCA200710875
Facility number:	334807029
Facility name:	COSTILLA FAMILY CHILD CARE
Facility eval. code:	0555
Facility office number:	09
Facility county number:	33
Facility type code:	810
Facility status code:	03
Address:	425 E. MURPHY ST.
City:	BLYTHE
State:	CA
Zip:	92225
Alt. address:	425 E. MURPHY ST.
City:	BLYTHE
State:	CA
Zip:	92225
Facility investor:	"COSTILLA, CINDY "
Licensee type:	A
License effective date:	515
License expiration date:	Not Reported
License issue date:	000515
Program type:	INACTIVE LICENSE: INACTIVE FROM 11-30-2006 THROUGH INDEFINITELY.
Original app. received date:	991224
Facility closed date:	Not Reported
Mailing address:	425 E. MURPHY ST.
Mailing city:	BLYTHE
Mailing state:	CA
Mailing zip:	92225
Contact person:	"COSTILLO, CINDY "
Facility capacity:	14
Type of clients served:	960
Facility phone:	7609220900

Daycare

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38 SRDCCA200704135
East
4-6 mi
29865
Lower

EDR ID:	SRDCCA200704135
Facility number:	330919967
Facility name:	MACK FAMILY DAY CARE
Facility eval. code:	0555
Facility office number:	09
Facility county number:	33
Facility type code:	810
Facility status code:	03
Address:	400 SO. FOURTH
City:	BLYTHE
State:	CA

Daycare

Zip:	92225
Alt. address:	400 SO. FOURTH
City:	BLYTHE
State:	CA
Zip:	92225
Facility investor:	"MACK, SERITHA "
Licensee type:	A
License effective date:	911214
License expiration date:	Not Reported
License issue date:	911214
Program type:	"MAXIMUM CAPACITY;12CHILDREN,WITH NO MORE THAN 4 INFANTS,OR A MAXIMUM 14 CHILDREN WHEN 2 ARE AT LEAST 6 YEARS OF AGE WITH A MAXIMUM OF 3 INFANTS; OFF LIMIS: ALL BEDROOMS. "
Original app. received date:	881214
Facility closed date:	Not Reported
Mailing address:	400 SO. FOURTH
Mailing city:	BLYTHE
Mailing state:	CA
Mailing zip:	92225
Contact person:	"MACK, S. "
Facility capacity:	14
Type of clients served:	960
Facility phone:	7609223614

H39
East
4-6 mi
29945
Lower

SRPU20071010977
Public Schools

Ncessch:	062964004603
Schname05:	TWIN PALMS CONTINUATION
Mstreet05:	190 NORTH FIFTH ST.
Mcity05:	BLYTHE
Mstate05:	CA
Mzip05:	92225
Mzip405:	1726
Member05:	80
Phone05:	(760) 922-4884
Locale05:	3
Type05:	4
Level05:	3
Gslo05:	10
Gshi05:	12
Edr id:	SRPU20071010977

H40
East
4-6 mi
30026
Lower

SRHO20070147205
AHA Hospitals

Hospital type:	01
Num of times COO:	00
Owner date:	Not Reported
City:	BLYTHE
Has plan of corr:	Not Reported
Compliance status:	Not Reported
SSA county code:	430
Cross ref number:	Not Reported
FMS survey date:	Not Reported
Current survey date:	Not Reported
Medicare/Medicaid:	Not Reported

MAP FINDINGS

Map ID Direction Distance Distance (ft.) Elevation	Site		EDR ID Database
	Facility name:	DATE PALM, INC	
	Intermediary/Carrier:	Not Reported	
	Medicaid number:	Not Reported	
	Partcipation date:	19930604	
	Prior COO date:	Not Reported	
	Prior carrier:	Not Reported	
	Provider ID:	05D0871765	
	Record Status:	A	
	Region code:	09	
	Is Partial Record:	Y	
	state abbrev:	CA	
	ssa state:	05	
	state region cd:	LAB	
	street address:	604 E HOBSON WAY	
	Phone num:	6199223644	
	Termination reason:	00	
	Term Date:	20071104	
	Purpose of action:	Not Reported	
	Provider control:	04	
	Zip:	92225	
	Fips state:	06	
	Fips cnty:	065	
	SSA MSA:	488	
	SSA MSA size code:	B	
	Date accredited:	Not Reported	
	Accred expire date:	Not Reported	
	Accred Org:	Not Reported	
	Num beds:	0000	
	Num cert beds:	0000	
	Source:	US_HOSPITAL_POSCLIA	
	Edr id:	SRHO20070147205	
H41 East 4-6 mi 30447 Lower	Hospital type:	01	SRHO20070147854 AHA Hospitals
	Num of times COO:	00	
	Owner date:	Not Reported	
	City:	BLYTHE	
	Has plan of corr:	Not Reported	
	Compliance status:	Not Reported	
	SSA county code:	430	
	Cross ref number:	Not Reported	
	FMS survey date:	Not Reported	
	Current survey date:	Not Reported	
	Medicare/Medicaid:	Not Reported	
	Facility name:	BLYTHE DESERT DIALYSIS	
	Intermediary/Carrier:	Not Reported	
	Medicaid number:	Not Reported	
	Partcipation date:	19970227	
	Prior COO date:	Not Reported	
	Prior carrier:	Not Reported	
	Provider ID:	05D0925504	
	Record Status:	A	
	Region code:	09	
	Is Partial Record:	Y	
	state abbrev:	CA	

ssa state:	05
state region cd:	LAB
street address:	737 HOBSON WAY
Phone num:	6199224415
Termination reason:	00
Term Date:	20070226
Purpose of action:	Not Reported
Provider control:	04
Zip:	92225
Fips state:	06
Fips cnty:	065
SSA MSA:	488
SSA MSA size code:	B
Date accredited:	Not Reported
Accred expire date:	Not Reported
Accred Org:	Not Reported
Num beds:	0000
Num cert beds:	0000
Source:	US_HOSPITAL_POSCLIA
Edr id:	SRHO20070147854

H42 SRHO20070008900
East AHA Hospitals
4-6 mi

Hospital type:	01
Num of times COO:	00
Owner date:	Not Reported
City:	BLYTHE
Has plan of corr:	Not Reported
Compliance status:	A
SSA county code:	460
Cross ref number:	Not Reported
FMS survey date:	Not Reported
Current survey date:	19971009
Medicare/Medicaid:	1
Facility name:	BMA BLYTHE DESERT DIALYSIS
Intermediary/Carrier:	00040
Medicaid number:	Not Reported
Partcipation date:	19971009
Prior COO date:	Not Reported
Prior carrier:	Not Reported
Provider ID:	052812
Record Status:	A
Region code:	09
Is Partial Record:	Not Reported
state abbrev:	CA
ssa state:	05
state region cd:	BER
street address:	737 WEST HOBSON WAY
Phone num:	7609224415
Termination reason:	00
Term Date:	Not Reported
Purpose of action:	1
Provider control:	01
Zip:	92225
Fips state:	06
Fips cnty:	071

SSA MSA:	488
SSA MSA size code:	B
Date accredited:	Not Reported
Accred expire date:	Not Reported
Accred Org:	Not Reported
Num beds:	0000
Num cert beds:	0000
Source:	US_HOSPITAL_POSOTHER
Edr id:	SRHO20070008900

I43 SRDCCA200754912
East EDR ID: SRDCCA200754912 Daycare
4-6 mi Facility number: 334818402
30491 Facility name: ESCUELA DE LA RAZA-PRIMEROS PASOS CENTER
Lower Facility eval. code: 0775

Facility office number:	09
Facility county number:	33
Facility type code:	850
Facility status code:	03
Address:	405 N. 7TH
City:	BLYTHE
State:	CA
Zip:	92225
Alt. address:	P.O. BOX 910
City:	BLYTHE
State:	CA
Zip:	92226
Facility investor:	ESCUELA DE LA RAZA UNIDA
Licensee type:	C
License effective date:	70530
License expiration date:	Not Reported
License issue date:	070530
Program type:	HOURS OF OPERATION: MONDAY-FRIDAY; FROM 6:30 AM TO 5:30 PM FOR AGES 2 YEARS TO FIRST DAY OF KINDERGARTEN.
Original app. received date:	061117
Facility closed date:	Not Reported
Mailing address:	P.O. BOX 910
Mailing city:	BLYTHE
Mailing state:	CA
Mailing zip:	92226
Contact person:	"GARNICA, CARMELA "
Facility capacity:	21
Type of clients served:	950
Facility phone:	7609229080

I44 SRDCCA200743818
East EDR ID: SRDCCA200743818 Daycare
4-6 mi Facility number: 334818403
30491 Facility name: ESCUELA DE LA RAZA UNIDA-PRIMEROS PASOS CENTER
Lower Facility eval. code: 0775

Facility office number:	09
Facility county number:	33
Facility type code:	830
Facility status code:	03

Address:	405 NORTH 7TH	
City:	BLYTHE	
State:	CA	
Zip:	92225	
Alt. address:	P.O. BOX 910	
City:	BLYTHE	
State:	CA	
Zip:	92225	
Facility investor:	ESCUELA DE LA RAZA UNIDA	
Licensee type:	C	
License effective date:	70530	
License expiration date:	Not Reported	
License issue date:	070530	
Program type:	HOURS OF OPERATION: MONDAY-FRIDAY FROM 6:30 AM TO 5:30 PM FOR AGES GIRTH TO 2 YEARS.	
Original app. received date:	061117	
Facility closed date:	Not Reported	
Mailing address:	P.O. BOX 910	
Mailing city:	BLYTHE	
Mailing state:	CA	
Mailing zip:	92225	
Contact person:	"GARNICA, CARMELA "	
Facility capacity:	16	
Type of clients served:	955	
Facility phone:	7609229080	

H45
East
4-6 mi
30569
Lower

SRPU20071010975
Public Schools

Ncessch:	062964004601
Schname05:	RUTH BROWN ELEMENTARY
Mstreet05:	241 NORTH SEVENTH AVE.
Mcity05:	BLYTHE
Mstate05:	CA
Mzip05:	92225
Mzip405:	1825
Member05:	649
Phone05:	(760) 922-7164
Locale05:	3
Type05:	1
Level05:	1
Gslo05:	KG
Gshi05:	05
Edr id:	SRPU20071010975

H46
East
4-6 mi
30917
Lower

SRDCCA200724500
Daycare

EDR ID:	SRDCCA200724500
Facility number:	334814865
Facility name:	THOMAS FAMILY CHILD CARE
Facility eval. code:	0555
Facility office number:	09
Facility county number:	33
Facility type code:	810
Facility status code:	03
Address:	901 EAST AVENUE A
City:	BLYTHE

State: CA
Zip: 92225
Alt. address: 901 EAST AVENUE A
City: BLYTHE
State: CA
Zip: 92225
Facility investor: "THOMAS, LINDA "
Licensee type: A
License effective date: 40407
License expiration date: Not Reported
License issue date: 040407
Program type: "MAXIMUM CAPACITY: 6 CHILDREN WITH NO MORE THAN 3 INFANTS, OR 4 INFANTSONLY, OR CAPACITY 8 CHILDREN WHEN 2 ARE AT LEAST 6 YEARS OF AGE WITH AMAXIMUM OF 2 INFANTS; PROPERTY OWNER/LANDLORD CONSENT IS REQUIRED "
Original app. received date: 040406
Facility closed date: Not Reported
Mailing address: 901 EAST AVENUE A
Mailing city: BLYTHE
Mailing state: CA
Mailing zip: 92225
Contact person: "THOMAS, LINDA "
Facility capacity: 8
Type of clients served: 960
Facility phone: 7609218685

NA
NE
8-10 mi
47638
NA

CUSA143499
FED_LAND

Name: Big Maria Mountains Wilderness
Feature: Wilderness BLM
Feature: Public Domain Land BLM
URL: http://www.wilderness.net/index.cfm?fuse=NWPS&sec=wildView&wname=Big%20Maria%20Mou
Bureau: BLM
State: CA
Is DOD?: No

NA
SE
8-10 mi
52687
NA

CUSA144151
FED_LAND

Name: Not Reported
Feature: Public Domain Land BLM
URL: Not Reported
Bureau: BLM
State: AZ-CA
Is DOD?: No

RECORDS SEARCHED/DATA CURRENCY TRACKING

Census

Source: U.S. Census Bureau
Telephone: 301-763-4636
2010 U.S. Census data was used to estimate residential population following these EPA guidelines:
"Census data are presented by Census tract. If your circle covers only a portion of the tract, you should develop an estimate for that portion...Determine the population density per square mile (total population of the Census tract divided by the number of square miles in the tract) and apply that density figure to the number of square miles within your circle."

FED_LAND: Federal Lands

Source: USGS
Telephone: 888-275-8747
Federal lands data. Includes data from several Federal land management agencies, including Fish and Wildlife Service, Bureau of Land Management, National Park Service, and Forest Service. Includes National Parks, Forests, Monuments; . Wildlife Sanctuaries, Preserves, Refuges; Federal Wilderness Areas.

AHA Hospitals:

Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes

Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools

Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Colleges - Integrated Postsecondary Education Data

Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on integrated postsecondary education in the United States.

Arenas

Source: Dunhill International
EDR indicates the location of buildings and facilities - arenas - where individuals who are public receptors are likely to be located.

Prisons: Bureau of Prisons Facilities

Source: Federal Bureau of Prisons
Telephone: 202-307-3198
List of facilities operated by the Federal Bureau of Prisons.

Daycare Centers: Licensed Facilities

Source: Department of Social Services
Telephone: 916-657-4041

STREET AND ADDRESS INFORMATION

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HARP Receptor Number	EDR ID	Receptor Category	Receptor Name	Distance from Project (ft)	Elevation, ft	Receptor Location, lat/long		Receptor Location, UTM	
						W	N	UTM-E (m)	UTM-N (m)
** HARP Receptor No. 15217	SRCL20051000408	College	PALO VERDE COLLEGE	18,817	369	-114.65184	33.66073	717729.46	3727013.2
** HARP Receptor No. 15218	SSRDCCA200741231	Daycare	ESCUELA DE LA RAZA UNIDA, INC., CHILD DEV. CTR.	23,893	268	-114.61004	33.61423	721725.4	3721944.9
** HARP Receptor No. 15219	SSRDCCA200753503	Daycare	ESCUELA DE LA RAZA UNIDA, INC. CHILD DEV. CTR.	23,893	268	-114.61004	33.61423	721725.4	3721944.9
** HARP Receptor No. 15220	SSRDCCA200704054	Daycare	COPELAND FAMILY DAY CARE	25,520	271	-114.60452	33.61709	722230.28	3722273.9
** HARP Receptor No. 15221	SSRDCCO200704898	Daycare	FLORES TERESA	26,143	273	-114.60247	33.6206	722411.48	3722667.6
** HARP Receptor No. 15222	SSRDCCA200711601	Daycare	MC CARTHY FAMILY DAY CARE	28,250	273	-114.59563	33.62275	723040.61	3722920.8
** HARP Receptor No. 15223	SSRDCCA200739504	Daycare	RIVERA FAMILY CHILD CARE	28,252	272	-114.59558	33.61624	723062.03	3722198.9
** HARP Receptor No. 15224	SSRDCCA200727230	Daycare	ROPPOLO FAMILY CHILD CARE	28,294	272	-114.59554	33.61452	723070.18	3722008.2
** HARP Receptor No. 15225	SSRDCCA200731832	Daycare	ZAMORA FAMILY CHILD CARE	28,660	270	-114.59425	33.61596	723186.17	3722170.7
** HARP Receptor No. 15226	SSRDCCA200744229	Daycare	COMMUNITY UNITED METHODIST CHURCH PRESCHOOL	28,890	272	-114.5936	33.61409	723251.31	3721964.7
** HARP Receptor No. 15227	SSRDCCA200710875	Daycare	COSTILLA FAMILY CHILD CARE	29,278	272	-114.59248	33.6123	723359.86	3721768.6
** HARP Receptor No. 15228	SSRDCCA200704135	Daycare	MACK FAMILY DAY CARE	29,866	269	-114.59167	33.60492	723454.08	3720951.8
** HARP Receptor No. 15229	SSRDCCA200754912	Daycare	ESCUELA DE LA RAZA-PRIMEROS PASOS CENTER	30,491	263	-114.58825	33.61556	723743.96	3722139.3
** HARP Receptor No. 15230	SSRDCCA200743818	Daycare	ESCUELA DE LA RAZA UNIDA-PRIMEROS PASOS CENTER	30,491	263	-114.58825	33.61556	723743.96	3722139.3
** HARP Receptor No. 15231	SSRDCCA200724500	Daycare	THOMAS FAMILY CHILD CARE	30,918	272	-114.58715	33.61156	723856.38	3721698
** HARP Receptor No. 15232	SSRHO20070150021	Hospital	KENNETH G LUCERO MD	23,729	267	-114.6111	33.61014	721637.51	3721489
** HARP Receptor No. 15233	SSRHO20070159409	Hospital	DARIN D LU MD	27,023	269	-114.60016	33.61029	722652.35	3721529.1
** HARP Receptor No. 15234	SSRHO20070150105	Hospital	BLYTHE FAMILY HEALTH CLINIC	27,039	269	-114.60011	33.61032	722656.91	3721532.5
** HARP Receptor No. 15235	SSRHO20070004245	Hospital	BLYTHE NURSING CARE CENTER	27,063	272	-114.59944	33.6176	722700.35	3722341.4
** HARP Receptor No. 15236	SSRHO20070005246	Hospital	BLYTHE NURSING CARE CENTER	27,063	272	-114.59944	33.6176	722700.35	3722341.4
** HARP Receptor No. 15237	SSRHO20070144362	Hospital	BLYTHE NURSING CARE CENTER	27,063	272	-114.59944	33.6176	722700.35	3722341.4
** HARP Receptor No. 15238	SSRHO20070160940	Hospital	FRANCISCO J TEJEDA MD MEDICAL CLINIC	27,761	270	-114.59772	33.61033	722878.68	3721538.8
** HARP Receptor No. 15239	SSRHO20070158992	Hospital	KEITH MARK GROSS MD INC	27,817	272	-114.59696	33.61768	722930.27	3722355.6
** HARP Receptor No. 15240	SSRHO20070141583	Hospital	LEON PETER Y CHUA MD	27,817	272	-114.59696	33.61768	722930.27	3722355.6
** HARP Receptor No. 15241	SSRHO20070145971	Hospital	CARDIOPUL SERVS ART BLD GAS LABORATORY	27,817	272	-114.59696	33.61768	722930.27	3722355.6
** HARP Receptor No. 15242	SSRHO20070160710	Hospital	SALLY MORGAN NURSE PRACTITIONER	27,985	271	-114.59683	33.61153	722958.18	3721673.8
** HARP Receptor No. 15243	SSRHO20070149183	Hospital	DESERT HOME HEALTH CARE	27,985	271	-114.59683	33.61153	722958.18	3721673.8
** HARP Receptor No. 15244	SSRHO20070139735	Hospital	PALO VERDE HOSP ARTERIAL BLOOD GAS LAB	28,343	272	-114.59548	33.61316	723079.25	3721857.5
** HARP Receptor No. 15245	SSRHO20070006967	Hospital	PALO VERDE HOSPITAL	28,343	272	-114.59548	33.61316	723079.25	3721857.5
** HARP Receptor No. 15246	SSRHO20070132024	Hospital	PALO VERDE HOSPITAL LABORATORY	28,343	272	-114.59548	33.61316	723079.25	3721857.5
** HARP Receptor No. 15247	SSRHO20070149828	Hospital	PATRICK N BAYS DO	28,362	272	-114.59549	33.61236	723080.39	3721768.7
** HARP Receptor No. 15248	SSRHO20070151101	Hospital	LEONEL L RODRIGUEZ MD	28,362	272	-114.59549	33.61236	723080.39	3721768.7

HARP Receptor Number	EDR ID	Receptor Category	Receptor Name	Distance from Project (ft)	Elevation, ft	Receptor Location, lat/long		Receptor Location, UTM	
						W	N	UTM-E (m)	UTM-N (m)
** HARP Receptor No. 15249	SSRHO20070161110	Hospital	ANJANI THAKUR MD INC	28,362	272	-114.59549	33.61236	723080.39	3721768.7
** HARP Receptor No. 15250	SSRHO20070151664	Hospital	HOSSAIN SAHLOLBEI MD	28,362	272	-114.59549	33.61236	723080.39	3721768.7
** HARP Receptor No. 15251	SSRHO20070132023	Hospital	ROGER C SLATER MD INC	28,686	271	-114.59466	33.61038	723162.51	3721550.9
** HARP Receptor No. 15252	SSRHO20070153768	Hospital	RAZAN AMMARI MD	28,686	271	-114.59466	33.61038	723162.51	3721550.9
** HARP Receptor No. 15253	SSRHO20070147205	Hospital	DATE PALM, INC	30,026	272	-114.59022	33.61045	723574.36	3721568.3
** HARP Receptor No. 15254	SSRHO20070147854	Hospital	BLYTHE DESERT DIALYSIS	30,448	272	-114.58882	33.6105	723704.15	3721576.9
** HARP Receptor No. 15255	SSRHO20070008900	Hospital	BMA BLYTHE DESERT DIALYSIS	30,448	272	-114.58882	33.6105	723704.15	3721576.9
** HARP Receptor No. 15256	SSRPU20071010973	School	FELIX J. APPLEBY ELEMENTARY	25,112	271	-114.60585	33.61747	722105.89	3722313.2
** HARP Receptor No. 15257	SSRPU20071010976	School	PALO VERDE HIGH	25,140	272	-114.60577	33.62108	722104.05	3722713.7
** HARP Receptor No. 15258	SSRPU20071010974	School	BLYTHE MIDDLE	25,170	272	-114.60583	33.62367	722091.83	3723000.9
** HARP Receptor No. 15259	SSRPU20071010978	School	MARGARET WHITE ELEMENTARY	27,799	272	-114.59701	33.62008	722919.44	3722621.7
** HARP Receptor No. 15260	SSRPR20051024377	School	ESCUELA DE LA RAZA UNIDA	27,990	270	-114.59685	33.6112	722957.17	3721637.2
** HARP Receptor No. 15261	SSRPU20071010977	School	TWIN PALMS CONTINUATION	29,945	272	-114.59032	33.61197	723561.16	3721736.7
** HARP Receptor No. 15262	SSRPU20071010975	School	RUTH BROWN ELEMENTARY	30,569	269	-114.58816	33.61304	723758.83	3721860
** HARP Receptor No. 15263	n/a	Wilderness	Big Maria Mountains Wilderness	85,716	2198			717519.27	3747623.4
** HARP Receptor No. 15264	n/a	Residence	Nearest Residence	4,055	366			713343.53	3721091.4
** HARP Receptor No. 15265	n/a	Prison	Ironwood State Prison	74,954	453			692462	3715409
** HARP Receptor No. 15266	n/a	Prison	Chuckwalla Valley State Prison	69,750	446			694051	3715625

Appendix 3.10
Phase I Environmental Site Assessment

AECOM Environment

Prepared for:
Stoel Rives LLP on behalf
AltGas Power Holdings (U.S.) Inc.
Vancouver, British Columbia

Prepared by:
AECOM
Camarillo, California
60344680
May 2015

Phase I Environmental Site Assessment
Sonoran Energy Project Site
76 Acres of Undeveloped Land
Blythe, California

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Prepared for:
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Sonoran Energy Project Site
79 Acres of Undeveloped Land
Blythe, California

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Executive Summary

Stoel Rives LLP on behalf of AltaGas Power Holdings (U.S.) Inc. contracted with AECOM to perform a Phase I Environmental Site Assessment (ESA) of the Sonoran Energy Project site located near Blythe, California. This Phase I ESA was performed in general conformance with the scope and limitations of ASTM Standard Practice Designation E 1527-13 for ESAs. Exceptions to, or deletions from, this practice are described in this report.

The subject property consists of approximately 76 acres of mostly undeveloped vacant land that has been previously graded. The northern portion of the subject property (approximately 10 acres) is cordoned off from the rest of the subject property a separate chained-link fence. This area is reportedly the location of a former solid waste dump that was used by the military in the early to mid-1940s. A former laydown yard is located near the northeast portion of the subject property. This laydown yard was reportedly used to temporary store materials associated with the construction of the Blythe Energy Center (BEC), an operational, natural gas-fired power plant that abuts the eastern property boundary. AECOM observed metal scaffolding and a groundwater monitoring well associated with the BEC in this area. The southern two thirds of subject property is graded land that is bordered by a man-made earthen drainage ditch. During the site visit, no visual evidence of underground storage tanks (USTs), aboveground storage tanks (ASTs), potable water wells, dry wells, clarifiers, or septic systems was observed on the subject property.

The subject property is bordered to the north by West Chanslor Way, beyond which is vacant desert. The subject property is bordered to the east by the BEC and its associated retention ponds, beyond which is Buck Boulevard. The subject property is bordered to the south by Hobson Way, beyond which is unplanted, arable land. The subject property is bordered to the west by vacant desert and a California Border Patrol office. Riverside County wastewater treatment ponds are located approximately 600 feet to the west of the subject property. Based on AECOM's site reconnaissance of the surrounding area, no offsite sources of concern were identified.

Historical research indicates that the majority of the subject property was vacant undeveloped land from at least the late 1940s. However, the northern portion of the subject property was used as a solid waste dump during World War II. It is unclear how long the dump was used for disposal. However, based on a review of a 1961 aerial photograph, it does not appear that dumping was occurring at this time. No significant site use appeared to take place between the early 1960s and mid-1990s. In 2001, the subject property was graded concurrent with construction of the adjacent BEC. During this time, a small portion of the eastern portion of the subject property was used as a laydown area and the northern portion of the property was fenced. The subject property appears to have been largely vacant and unused between the early 2000s and the present. No historical offsite sources of concern were identified during this assessment.

In 2001 four shallow soil samples were collected from the northern portion of the subject property to evaluate the former military dump. The soil samples were analyzed for total metals, total petroleum hydrocarbons as diesel-fuel (TPH-D), volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs). Total lead was detected in one of the soil samples collected within the northern portion of the subject property at a concentration of 570 milligram per kilogram (mg/kg), which exceeded the California Human Health Screening Level (CHHSL) for industrial soil of 320 mg/kg.

The subject property was not identified in the site-specific environmental database report. In addition, based on AECOM's regulatory research, none of the surrounding properties appear to present an offsite source of concern to the subject property.

Based on the above-described activities, no historical RECs (HRECs) or controlled recognized environmental conditions (CRECs) were identified in connection with the subject property. However, the following recognized environmental condition (REC) and de minimis condition (DMC) were identified in connection with the subject property:

- Subsurface sampling conducted in the northern portion of the subject property (former military dump) in 2001 identified total lead in soil at a concentration of 570 mg/kg. This concentration exceeds the 2009 CHHSL regarding lead in industrial soil of 320 mg/kg. AECOM considers the presence of lead in the soil at this elevated concentration to be a REC.
- Miscellaneous trash and debris associated with past dumping activities is likely to be present in the former onsite military dump. AECOM considers this trash and debris to be a DMC to the subject property.

1.0 Introduction

1.1 Purpose

This Phase I Environmental Site Assessment (ESA) was performed pursuant to AECOM's written proposal, dated April 17, 2015. This assessment was performed in advance of the potential purchase of the subject property. The purpose of this Phase I ESA is to provide the client with information for use in evaluating recognized environmental conditions (RECs) associated with the subject property. As such, this report is intended to permit the user of this report to satisfy the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations included within the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

A REC is defined by the ASTM standard as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment." The term is not intended to include de minimis conditions (DMCs) that generally do not present a material risk to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate government agencies. This assessment is based on a review of existing conditions, reported pre-existing conditions, and observed operations at the subject property and adjacent properties.

1.2 Scope of Work

The Phase I ESA included a site visit, regulatory research, historical review, and a review of an environmental database analysis of the subject property. In conducting the Phase I ESA, AECOM assessed the subject property for visible signs of possible contamination, researched public records for the subject property and adjacent properties (as applicable), and conducted interviews with persons knowledgeable about the subject property.

This project was performed in general accordance with ASTM Standard Practice Designation E 1527-13 and AECOM's proposal, dated April 17, 2015. Conclusions reached in this report are based upon the assessment performed and are subject limitations set forth in Sections 1.3, 1.4, and 1.5 below.

1.3 Study Limitations

This report describes the results of AECOM's Phase I ESA to identify the presence of contamination-related liabilities materially affecting the subject facility and/or property. In the conduct of this assessment, AECOM assessed the presence of such problems within the limits of the established scope of work as described in our proposal.

As with any due diligence assessment, there is a certain degree of dependence upon oral information provided by facility or site representatives, which is not readily verifiable through visual observations or supported by any available written documentation. AECOM shall not be held responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed by facility or site representatives at the time this assessment was performed. In addition, the findings in this report are subject to certain conditions and assumptions, which are noted in the report. Any party reviewing the findings of the report must carefully review and consider all such conditions and assumptions.

This report and all field data and notes were gathered and/or prepared by AECOM in accordance with the agreed upon scope of work and generally accepted engineering and scientific practice in effect at the time of AECOM's assessment of the subject property. The statements, conclusions, and opinions contained in this report are only intended to give approximations of the environmental conditions at the subject property.

As specified in the ASTM standard (referred to below as “this practice”), it is incumbent that the client and any other parties who review and rely upon this report understand the following inherent conditions surrounding any Phase I ESA:

- Uncertainty Not Eliminated – No ESA can wholly eliminate uncertainty regarding the potential for RECs in connection with a property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs in connection with a property, and this practice recognizes reasonable limits of time and costs. (Section 4.5.1 of the ASTM standard)
- Not Exhaustive – “All appropriate inquiry” does not mean an exhaustive assessment of a clean property. There is a point at which the cost of information obtained outweighs the usefulness of the information and, in fact, may be a material detriment to the orderly completion of transactions. One of the purposes of this practice is to identify a balance between the competing goals of limiting the costs and time demands inherent in performing an ESA and the reduction of uncertainty about unknown conditions resulting from additional information. (Section 4.5.2 of the ASTM Standard)
- Comparison with Subsequent Inquiry – It should not be concluded or assumed that an inquiry was not an “all appropriate inquiry” merely because the inquiry did not identify RECs in connection with a property. ESAs must be evaluated based on the reasonableness of judgments made at the time and under the circumstances in which they were made. Subsequent ESAs should not be considered valid standards to judge the appropriateness of any prior assessment based on hindsight, new information, use of developing technology or analytical techniques, or other factors. (Section 4.5.4 of the ASTM Standard)

A similar set of inherent limitations exist in cases where the Phase I ESA included a screening-level assessment of vapor migration or vapor encroachment; such an assessment is a required part of a Phase I ESA when the ASTM E1527-13 standard is employed. According to the ASTM E2600-10 Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions, the following limitations apply:

- Uncertainty Not Eliminated in Screening - No vapor encroachment screen (VES) can wholly eliminate uncertainty regarding the identifications of vapor encroachment conditions (VECs) in connection with the target property (Section 4.5.1).

- Not Exhaustive - The guide is not meant to be an exhaustive screening. There is a point at which the cost of information obtained outweighs the usefulness of the information and, in fact, may be a material detriment to the orderly completion of real estate transactions. . One of the purposes of this guide is to identify a balance between the competing goals of limiting the costs and time demands inherent in performing a VES and the reduction of uncertainty about unknown conditions resulting from additional information. (Section 4.5.2)
- Comparison with Subsequent Investigations - It should not be concluded or assumed that an investigation was not adequate because the investigation did not identify any VECs in connection with a property. The VES must be evaluated based on the reasonableness of judgments made at the time and under the circumstances in which they were made. Subsequent VESs should not be considered valid bases to judge the appropriateness of any prior screening if based on hindsight, new information, use of developing technology or analytical techniques, or similar factors (Section 4.5.4)

This report was prepared pursuant to an agreement between Stoel Rives LLP on behalf of AltaGas Power Holdings (U.S.) Inc. (Client) and AECOM and is for the exclusive use of the Client. No other party is entitled to rely on the conclusions, observations, specifications, or data contained herein without first obtaining AECOM's written consent and provided any such party signs an AECOM-generated Reliance Letter. A third party's signing of the AECOM Reliance Letter and AECOM's written consent are conditions precedent to any additional use or reliance on this report.

The passage of time may result in changes in technology, economic conditions, site variations, or regulatory provisions, which would render the report inaccurate. Reliance on this report after the date of issuance as an accurate representation of current site conditions shall be at the user's sole risk.

1.4 Site-Related Limiting Conditions

The following site-specific limitations were encountered during the course of this assessment:

- During AECOM's site visit, approximately 10 acres located in the northern portion of the subject property was inaccessible due to the presence of a locked, chain-link fence. As a result, AECOM was unable to closely evaluate this area.

1.5 Data Gaps/Data Failure

AECOM's ESA identified the following data failures/gaps:

- A limitation was encountered in determining the historical use of the subject property. The earliest source of historical information reasonably ascertainable within the time frame of this report in which usage could be determined was an aerial photograph from 1948. At the time of the photograph, the subject property appeared to be vacant land with some land disturbance in the northern portion of the property. Therefore, the ASTM E1527 requirement to determine all obvious uses of the property from the present back to the property's first obvious developed use, or back to 1940, whichever is earlier, could not be achieved. However, based upon the identified land use, it is unlikely that there had been significant prior development; therefore, this limitation does not represent a data failure and as a result is not expected to impact the results of this assessment.

- Per ASTM, interviews with past owners, operators, and occupants of the subject property, who are likely to have material information regarding the potential for contamination at the subject property, shall be conducted to the extent that they can be identified and that the information likely to be obtained is not duplicative of information already obtained from other sources. Taking into account the extent of information on site history and site operations (agricultural use), AECOM believes that even if such past operators, owners, or occupants might be identified and interviewed, they would not likely provide additional information that would materially assist in meeting the purposes of this site assessment.

2.0 Site Description

2.1 Site Location and Parcel Description

The subject property is located in eastern Riverside County, near Blythe, California, approximately nine ½ miles west of the Colorado River. The subject property is situated approximately one mile east of the Blythe Airport. The subject property is situated between West Chanslor Way to the north and Hobson Way to the south. Chanslor Way is also known as Riverside Avenue. The subject property is accessed via the adjacent Blythe Energy Center located at 385 Buck Boulevard.

According to the County of Riverside's Parcel Map No. 14,093, the subject property consists of two contiguous parcels of land that are designated as parcels 36 (25.4 acres) and 37 (53.1 acres). These parcels are identified in the Riverside County Land Information system as parcels 824-101-013 (36) and 824-101-012 (37). The approximate location of the subject property is illustrated on Figure 1 - Site Location Map.

2.2 Site Ownership

The subject property was acquired by Alta Gas in April 2014.

2.3 Site Visit

Ms. Anastasia DeSantis with AECOM's Long Beach, California office visited the subject property on April 22, 2015. The site visit methodology consisted of traversing the subject property and perimeters, and walking portions of the surrounding area. Mr. Mike Ludwin of the Blythe Energy Center (BEC) accompanied Ms. DeSantis during that site visit. Mr. Ludwin indicated that he had been familiar with the subject property since 2012. The following sections summarize the results of the site visit.

2.3.1 Site and Facility Description

The subject property consists of two contiguous parcels of land that currently are vacant, but have been graded for construction. The total acreage of the subject property is approximately 76 acres. A majority of the subject property's perimeter is lined by a chained-link fence and a drainage ditch. The northern 10 acres of the subject property are separated by a locked, chained-link fence and were formerly used by the U.S military as a dump. The northeastern portion of the subject property was formerly used as a laydown area during the construction of the adjacent BEC.

During AECOM's site visit, several debris piles of debris were observed along the northern portion of the subject property behind the chain-linked fence, and appeared to consist of rusted metal, glass, concrete and other unidentified rubbish. This area was reportedly used by the military during World War II for trash disposal. These piles (approximately 20) ranged in size, but each appeared to measure approximately four feet tall by eight feet wide. The debris piles appear to cover an area measuring approximately 550 feet in length and 250 feet in width. Limited soil sampling of this area was conducted in May 2001. The results of this soil sampling are summarized in Section 4.3.

During AECOM's site visit, sparse desert vegetative cover was observed throughout the subject property. A drainage ditch runs along the perimeter of the subject property. A concrete outflow exists on the southern portion of the drainage ditch, reportedly leading to evaporation ponds on the easterly adjacent property. A single utility manhole cover was identified on the eastern portion of the property, owned by Southern California Edison (SCE). However, the subject property is not currently serviced by utilities. Overhead electrical power lines owned and maintained by SCE were observed transecting the southeastern portion of the subject property.

A groundwater monitoring well (MW-4) associated with the BEC is located in the former layout portion of the subject property. This well is part of BEC Regional Water Quality Control Board (RWQCB) required groundwater monitoring program. During AECOM's site visit, no visual evidence of water wells, dry wells, clarifiers, or septic tanks or leach fields was observed on the subject property. In addition, no visual evidence of discolored soil, water, or unusual vegetative conditions or odors was observed. The general layout of the subject property is illustrated on Figure 2 - Site Plan and Representative Site Photographs are provided in Appendix A.

2.3.2 Surrounding Properties

The subject property is bordered to the north by West Chanslor Way, beyond which is vacant land. The subject property is bordered to the east by the BEC and associated retention ponds (385 Buck Boulevard), beyond which is Buck Boulevard. The subject property is bordered to the south by Hobson Way, beyond which is unplanted, arable land, beyond which is the 10 Freeway. The subject property is bordered to the west by vacant land and an office of the California Border Patrol (16870 W. Hobson Way). Riverside County also operates wastewater treatment ponds that are located approximately on the 600 feet to the west of the subject property.

AECOM did not observe gasoline service stations or dry cleaners in the immediate vicinity (i.e., 500 feet) of the subject property. In addition, no sensitive receptors (i.e., day care centers, schools, hospitals, water bodies) are adjacent to the subject property. Based on AECOM's site reconnaissance of the surrounding area, no offsite sources of concern were identified.

2.3.3 Petroleum Products and Hazardous Materials

No evidence of petroleum products or hazardous materials use or storage was observed on the subject property.

2.3.4 Polychlorinated Biphenyls

Polychlorinated biphenyls (PCB)-containing dielectric fluids have been widely used as coolants and lubricants in transformers, capacitors, and other electric equipment due to their insulating and nonflammable properties. No electrical or hydraulic equipment (i.e., transformers, trash compactors, lifts) was observed on the subject property.

2.3.5 Aboveground Storage Tanks

No aboveground storage tanks (ASTs) were observed on the subject property. In addition, no ASTs were listed in the site-specific environmental database report reviewed by AECOM, or otherwise identified during AECOM's review of historical aerial photographs or available online information/reports reviewed as part of this assessment.

2.3.6 Underground Storage Tanks

During AECOM's site visit, visual evidence of underground storage tanks (USTs) (e.g., vent pipes, fill ports) was not observed on the subject property. In addition, no USTs were listed in the site-specific environmental database report, or otherwise identified during AECOM's review of available online information/reports reviewed as part of this assessment.

2.3.7 Solid Waste

During AECOM's site visit, no evidence of current solid waste generation was observed at the subject property. Historically, the northern portion of the subject property was used for the dumping of military refuse, and a small portion of the eastern property was used as a laydown area during construction of the adjacent BEC.

2.3.8 Hazardous Waste

During AECOM's site visit, no evidence of hazardous waste generation was observed at the subject property. In addition, the subject property was not listed as a generator of hazardous waste in the site-specific environmental database report that was obtained as part of this assessment.

2.3.9 Water

Potable water is not provided to the subject property. During AECOM's site visit, no visual evidence of water wells was observed at the subject property.

2.3.10 Wastewater

No evidence of wastewater generation was observed during the site visit. In addition, no visual evidence of septic tanks or leach fields was observed on the subject property.

2.3.11 Stormwater

During AECOM's site visit, a drainage ditch was observed along the perimeter of the subject property. AECOM also observed a concrete outflow leading to evaporation ponds located at the adjacent Blythe Energy Center. Based on AECOM's site visit it appears that depending on the severity of the storm, stormwater would likely infiltrate into the onsite soil or flow to the adjacent evaporation ponds.

2.3.12 Heating and Cooling

Heating and cooling services are not provided to the subject property.

3.0 Environmental Setting

3.1 Topography

Based on a review of the United States Geological Survey topographic maps of the subject property area (Ripley quadrangle) and the Google Earth website, the elevation of the subject property appears to range from approximately from an elevation of 335 to 350 feet above mean sea level. Based on a review of these resources and AECOM's site visit, it appears that the subject property is generally flat with an overall regional downward slope to the southeast. The subject property had been graded and a drainage ditch is located around the perimeter of the property.

3.2 Soil/Geology

According to the site-specific environmental database report, the subject property is primarily underlain with Rositas loamy fine sand. The Rosita soils are described as having high infiltration rates. These soils are further described as loamy fine-grained sands down to a depth of approximately 3 inches below ground surface (bgs) and as fine -grained soils from approximately 3-59 inches bgs. The Rosita soils are classified as 'not hydric' (not supporting wetlands).

According to geologic information provided in the site-specific environmental database report, the bedrock geology of the subject property area is of the Cenozoic Era, Quaternary System, Quaternary Series. In May 2014 AECOM conducted a limited Phase II ESA at a property located to the south of the subject property. In general, soils encountered during the limited Phase II ESA consisted of sand and silty sand to total depth explored of 10 feet bgs. Based on the proximity of this site to the subject property, AECOM anticipates that similar soil conditions are likely to be present at the subject property.

3.3 Groundwater/Hydrology

A groundwater monitoring report for the adjacent BEC provides site specific groundwater data for the subject property. Monitoring well MW-4 is located on the northeastern portion of the subject property within the former laydown yard. Depth to groundwater in 2014 ranged from between 91.82 feet bgs to 93.17 feet bgs in well MW-4. Groundwater flow is reported to be to the southwest.

4.0 Site and Area History

Historical information for the subject property and surrounding sites is based on AECOM's review and analysis of the following historical sources:

- Topographic maps dated 1947, 1952, 1970, and 1975;
- Aerial photographs dated 1948, 1959, 1961, 1970, 1978, 1981, 1990, 1994, 1996, 2005, 2006, 2009, 2010, and 2012.
- Interview with Mr. Mike Ludwin of the Blythe Energy Center and information provided by Mr. Chris Doyle with AltaGas Power Holdings (U.S.) Inc.

According to EDR Sanborn® Fire Insurance map coverage is not available for the area of the subject property.

4.1 Subject Property

According to the historical sources reviewed, the majority of the subject property was vacant land in 1948. This aerial photograph depicts a disturbed area in the northern portion of the subject property that corresponds with the location of a World War II dump site. This area appears to have expended by the 1961 aerial photograph. From this time until 1996, the subject property is depicted as undeveloped desert land with no discernible features with the exception of the land disturbance in the northern portion of the subject property. The site contact indicated that the subject property was graded concurrent with construction of the adjacent BEC in 2001. During this time, a small portion of the eastern property was used as a laydown area for construction at the easterly adjacent property. The site contact reported that it was used to temporarily store materials and stage vehicles. At the time of AECOM's site visit, this area had been returned to vacant land and was not being used for storage of materials or vehicles. The 2005 aerial photograph depicts the subject property in the same state of development as it appeared to be during AECOM's site visit.

4.2 Off-site Properties

West Chanslor Way, Buck Boulevard and Hobson Way are each depicted in aerial photography since at least 1948. Potential refuse dumping activity to the north of the property is depicted as early as 1948. However, a majority of the adjacent property to the north has remained undeveloped to the present day. The easterly adjacent property is depicted as undeveloped from at least 1948 until construction of the BEC in aerial photography from 2005. The BEC is a natural gas-fired power plant. Land to the south of the subject property is depicted as alternating between agricultural row crop and unplanted arable land from 1958 to 2006. Row crops are last depicted in an aerial photograph from 1970. Development on the western adjacent California Border Patrol Property is depicted in the 1948 photograph. The Riverside County wastewater treatment ponds on this property are not depicted until a 2012 aerial photograph. By the 2005, the surrounding properties were generally developed, similarly as they appeared at the time of AECOM's site reconnaissance, with the exception of the wastewater treatment ponds which are located approximately 600 feet to the west of the subject property.

4.3 Previously Prepared Environmental Reports

The below summarized previously prepared environmental report was provided for AECOM's review during the course of this assessment.

Second Semi-Annual and Annual 2014 Monitoring report, Blythe Energy Project, Blythe, California, January 2015. **Prepared by Amec Foster Wheeler Environment and Infrastructure, Inc. (Amec)**

In 2014, Semi-Annual Monitoring was conducted in compliance with Waste Discharge Requirements (WDR) Number R7-2002-012 for the adjacent BEC located at 385 North Buck Boulevard. The BEC operates two evaporation ponds and a leak detection system. Four groundwater wells, six lysimeters, and two observation wells are monitored semi-annually in accordance with the WDR. One of these wells is located on the subject property. The groundwater monitoring wells are gauged and sampled quarterly for chloride, sulfate, selenium, total dissolved solids, and specific conductance. Groundwater from the two evaporation ponds (labeled east and west) is collected quarterly and analyzed for Metals by EPA Method 200.7, total dissolved solids, specific conductance, and pH.

During 2014, depth to groundwater at the monitoring and observation wells ranged from 86.90 feet below ground surface (bgs) to 93.17 feet bgs. Chloride concentrations ranged from 110 mg/L to 330 mg/L. Sulfate concentrations ranged from 270 mg/L to 480 mg/L. Total dissolved solids ranged from 1,100 mg/L to 1,200 mg/L.

Amec concluded that based on the collected data, no unusual/anomalous results or readings were obtained during the First through Fourth Quarter monitoring events.

Phase I Environmental Site Assessment, Blythe II Project Site, February 214. Prepared by AECOM.

In February 2014 AECOM conducted a Phase I ESA of the subject property. AECOM identified the northern portion of the subject property was used as dump during World War II. A previous subsurface assessment identified elevated concentration of lead in soil in this area. AECOM concluded that the presence of lead in the soil at the concentrations identified was a REC.

Phase I Environmental Site Assessment, Blythe Energy II Project, Blythe, California. June 2001. **Prepared by Greystone Environmental Consultants, Inc.**

In 2001, Greystone Environmental Consultants, Inc. (Greystone) performed a Phase I ESA of the subject property. At that time, the adjacent Blythe Energy Project was under construction to the east of the subject property and a portion of the subject property was being used as a laydown yard for construction. The laydown yard was approximately 10 acres in size and heavy earthmoving equipment was observed in this laydown yard onsite.

In addition, small quantities of solid waste were observed on both parcels. This solid waste consisted of plastic, glass, used tires, scrap wood and metal fragments. On the northern side of Parcel Number 824-11-37, recent dumping activities were observed. The materials in these recent dump areas were solid waste consisting of used appliances, tires, scrap wood, and other solid wastes. These dump areas were adjacent to and in the old dump site.

Large solid waste debris piles were observed along the northern side of Parcel Number 824-11-37. This dump area dated to World War II and was used by the military for disposal of their trash. These debris piles extended across Riverside Avenue (identified on Google Earth and Google Maps as Chanslor Way) and into the adjacent parcel to the north. The debris piles on the subject property parcel covered an area approximately 550 feet in length and 250 feet in width. The debris in the dump consisted mostly of rusted metal (e.g., pipe, wire, and tin cans), glass and china fragments, and concrete.

As part of the Greystone report, four grab soil samples were collected in the northern portion of the property in the old World War II dump site. The purpose of the soil samples was to determine if residual soil contamination remained in the dump that could pose an environmental risk to owners of the property. At that time, the soil samples were analyzed for metals, total petroleum hydrocarbons-diesel (TPH-D), volatile organic carbons (VOCs), and semi-volatile organic compounds (SVOCs).

Lead was only detected in one of the four soil samples, in Sample B-1, at a concentration of 570 milligrams per kilogram (mg/kg). Based on the four samples taken at that time, Greystone concluded that lead contamination was isolated at the dump site and widespread contamination was not present at the site. Greystone concluded that no additional sampling or remediation was therefore warranted at the site.

5.0 Database and Records Review

5.1 User Provided Information

On May 7, 2015, Mr. Chris Doyle with AltaGas Power Holdings (U.S.) Inc. provided AECOM with a completed ASTM 1527-13 User Questionnaire which summarized their knowledge of title records, environmental liens, specialized knowledge, and/or real estate value reduction issues associated with the subject property. Mr. Doyle said it was unknown if environmental liens or AULs had been placed on the subject property. Mr. Doyle stated that he did not have specialized knowledge or experience that is material to RECs in connection with the subject property.

5.2 Title Records/Environmental Liens

AECOM contracted with EDR to conduct an environmental lien search of the subject property. No environmental liens or AULs were identified in the environmental lien search report. A copy of the Environmental Lien and AUL search report is provided as Appendix B.

5.3 Database Information

In accordance with the scope of work and ASTM Standard E-1527-13, a search of various governmental databases was conducted by EDR. The site-specific environmental database report was reviewed to evaluate if soil and or groundwater from an on-site and/or off-site sources of concern has the potential impact the subject property. The database abbreviations are provided in the site-specific environmental database report.

The database report includes various reports detailing database information for each of the sites identified/geocoded within the specified radius. Additional sites with recognized environmental risks were identified, but AECOM was not able to map them to specific locations due to insufficient/contradicting address information. These sites were included in the database report as "orphan" sites. Based upon AECOM's review, there does not appear to be significant concerns associated with the orphan sites. A summary of AECOM's review and analysis of the site-specific environmental database report is presented below. A copy of the database report is provided in Appendix C.

Based on AECOM's research, the subject property is not located on or within a 1-mile radius of tribal lands.

5.3.1 Subject Property

The subject property was not identified in the site-specific environmental database report.

5.3.2 Surrounding Sites

According to the environmental database report, there are several sites located within their respective ASTM search distances from the subject property. Based on AECOM's review of these database listings, none of these sites are expected to present a REC to the subject property based on their distance from the subject property, regulatory status (e.g., closed, no violations found), media impacted (e.g., soil only), and/or topographical position from the subject property (e.g., down-gradient or cross-gradient). However, based on their proximity to the subject property, the following two sites are discussed in additional detail below:

- Blythe Lemon Ranch, located at 15550 Hobson Way, is located approximately 500 feet southwest of the subject property. Public Works Yard, located at 711 West 4th Street is located approximately 1,000 feet west and cross-gradient of the subject property. This site is listed on GeoTracker as a closed case for cleanup of gasoline contaminated soils. Because this site is listed as being closed on GeoTracker, it is therefore not considered to be a REC.

- The Blythe Energy Project, located at 15560 West Hobson Way is located adjacent to the subject property. It is listed in GeoTracker as being an open Land Disposal Site, with no additional information listed. Doug Wylie of the RWQCB indicated that this listing is for two retention ponds, permitted under Title 27. Based on the above described information this site is not considered to be a REC.

5.4 Vapor Encroachment Screening

AECOM conducted a Tier 1 VES as part of this assessment. This screening was conducted in general accordance with the ASTM E2600 *Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions* dated June 2010. The objective of the VES was to evaluate the following:

1. A VEC exists, or
2. Is likely to exist, or
3. Cannot be ruled out, or
4. Can be ruled out because it does not exist or is not likely to exist

5.4.1 Subject Property

No source of vapor encroachment (e.g., UST, contaminated soil, groundwater plume, etc.) was identified during the course of this assessment. In addition, no significant concentrations of VOCs or petroleum hydrocarbons were detected in the soil samples collected from the subject property during AECOM's May 2014 Phase II ESA. It is AECOM's opinion that an onsite source of vapor encroachment can be ruled out.

5.4.2 Offsite

To conduct the VES AECOM conducted a detailed review and analysis of the site-specific environmental database report with particular focus on the follow two types of sites:

1. Off-site properties that are impacted by chlorinated volatile organic compounds (VOCs) and/or semi-volatile-organic compounds (SVOCs) and are located within approximately 1,750 feet of the subject property, and

2. Off-site properties that are impacted by petroleum hydrocarbons and are located within approximately 525 feet of the subject property.

The following paragraphs summarize the results of AECOM's VES of the subject property.

A review of the site-specific environmental database report, the online Department of Toxic Substance Control (DTSC) EnviroStor database for California Cleanup Sites involving the DTSC, and the California EPA's State Water Resources Control Board's online GeoTracker database indicates that there are no VOC or petroleum hydrocarbon-impacted sites located with the respective ASTM radius of the subject property. Based on this information, it is AECOM's opinion that a VEC can be ruled out because it does not exist or is not likely to exist.

5.5 Agency File Review

5.5.1 Riverside County

Riverside County Department of Environmental Health, Hazardous Materials Division maintains records pertaining to hazardous materials business plans, hazardous waste, Tiered Permit, USTs, ASTs, and/or California Accidental Release Prevention (Cal ARP). The County of Riverside requires a physical address in order to conduct a Freedom of Information Act (FOIA) request. As a result a FOIA request to Riverside County was not submitted as part of this assessment.

5.5.2 Department of Toxics Substance Control

AECOM searched the DTSC's online EnviroStor database for California Cleanup Sites involving the DTSC. The EnviroStor database consists of federal National Priorities List (NPL) sites, state response sites, voluntary cleanup sites, and school cleanup sites. The subject property was not identified in the EnviroStor database.

5.5.3 Regional Water Control Board

AECOM searched the California EPA's State Water Resources Regional Water Control Board online GeoTracker database. The GeoTracker database regards contaminated property investigations consisting of Leaking Underground Fuel Tank (LUFT), SLIC, Land Disposal, Department of Defense (DOD) (non-UST), Wells, and UST sites at properties throughout California. The subject property was not identified in the GeoTracker database.

5.5.4 Environmental Protection Agency

AECOM searched the US EPA Enforcement and Compliance History Online (ECHO) and Envirofacts Data Warehouse (Envirofacts). The ECHO database consists of US EPA compliance history at a site. Envirofacts is a database search of US EPA databases, including the CERCLIS database, which consists of sites being assessed under the Superfund program (NPL sites), hazardous waste sites, and potential hazardous waste sites. In 2014, the Superfund Program implemented a new information system, the Superfund Enterprise Management System (SEMS). Efforts to migrate data to SEMS and to enhance data quality control are progressing. The Program will continue to rely on the final CERCLIS data set (dated November 12, 2013, which reflects official end of Fiscal Year 2013 Program progress) for public reporting until a complete and accurate SEMS data set is available. The current estimate for refreshing the content on this page is April 2015. The subject property was not identified on either of these databases.

6.0 Findings and Opinions

AECOM performed a Phase I ESA of the subject property in conformance with the scope and limitations of ASTM Practice E 1527-13, which meets the requirements of Title 40, Code of Federal Regulations Part 312 and is intended to constitute *all appropriate inquiry* for purposes of the landowner liability protections. Any exceptions to, or deletions from, this practice are described in Section 1.3 through 1.5 of this report.

6.1 Recognized Environmental Conditions

Based on the above-described activities, one REC was were identified in connection with the subject property as described below:

- Subsurface sampling conducted in the northern portion of the subject property (former military dump) in 2001 identified total lead in soil at a concentration of 570 mg/kg. This concentration exceeds the CHHSL for industrial soil of 320 mg/kg. AECOM considers the presence of lead in the soil at this elevated concentration to be a REC.

6.2 Controlled Recognized Environmental Conditions

Based on the above-described activities, no CRECs were identified during this assessment:

6.3 Historical Recognized Environmental Conditions

Based on the above-described activities, no HRECs were identified in connection with the subject property.

6.4 De Minimis Conditions

Based on the above-described activities, the following DMC was identified in connection with the subject property:

- Miscellaneous trash and debris associated with past dumping activities is likely to be present in the former onsite military dump.

7.0 Conclusions

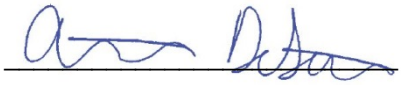
We have performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E 1527-13 of the vacant commercial property located at parcels 824-101-013 and 824-101-012 in Blythe, California. Any exception to, or deletions from, this practice are described in Sections 1.3 through 1.5 of this report. This assessment has revealed evidence of one REC in connection with the property as described below:

- Subsurface sampling conducted in the northern portion of the subject property (former military dump) in 2001 identified total lead in soil at a concentration of 570 mg/kg. This concentration exceeds the 2009 CHHSL regarding lead in industrial soil of 320 mg/kg.

8.0 Quality Control/Quality Assurance

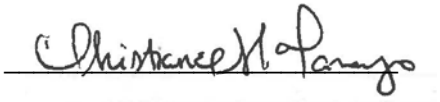
8.1 Site Visit, Research, and Report Preparation

The site visit, research, and report preparation were conducted by Ms. Anastasia DeSantis in AECOM's Long Beach, California office.

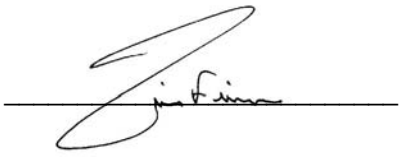
Signature: 

8.2 Quality Control Review

A first level review of this report was conducted by Ms. Christiane Tamayo in AECOM's Long Beach, California office.

Signature: 

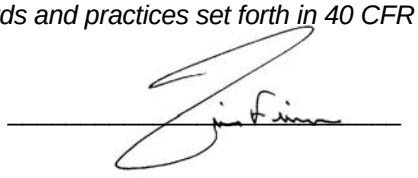
A second level review of this report was conducted by Mr. Jim Fickerson in AECOM's Camarillo, California office.

Signature: 

8.3 Environmental Professional Statement

Mr. Jim Fickerson was the Environmental Professional (EP) for this project. Mr. Fickerson's EP statement is below and his resume is provided in Appendix D.

I declare that, to the best of my professional knowledge and belief, I meet the definition of an EP as defined in §312.10 of 40 Code of Federal Regulations (CFR) and that I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed all the appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Signature:  Date: May 7, 2015

9.0 References

9.1 Persons Interviewed

Ludwin, Mike, Plant Manager, Blythe Energy Center, Site Contact, (760) 600-2103.

Doyle, Chris, Alta Gas Power Holdings (U.S.) Inc., Chris.Doyle@altagas.ca. Mr. Doyle completed the ASTM user questionnaire on May 7, 2015.

9.2 Agencies Contacted

Department of Toxic Substances Control (DTSC). EnviroStor online database search conducted at http://www.envirostor.dtsc.ca.gov/public/

Riverside County Assessor's Office. Parcel information obtained online at http://www.asrclkrec.com/, (951)-955-6200.

State Water Resources Control Board (SWRCB). GeoTracker online database search conducted at http://geotracker.waterboards.ca.gov/

Enforcement & Compliance History Online (ECHO) database search conducted at http://www.epa.gov/echo.

Envirofacts Database http://www.epa.gov/enviro/html/fii/fii_query_java.html

United States Environmental Protection Agency (EPA). CERCLIS online database search conducted at http://cfpub1.epa.gov/supercpad/cursites/srchsites.cfm.

9.3 Documents Reviewed

California Human Health Screening Level for Soil dated January 2005.

EDR Historical Topographic Map Report, prepared for the subject property dated January 27, 2014. Inquiry number 3840587.4. Topographic Maps dated 1947, 1952, 1970, and Report prepared by Environmental Data Resources, 440 Wheelers Farms Road, Milford, Connecticut 06461, 800-353-0050.

EDR Aerial Photo Decade Package prepared for the subject property dated January 30, 2014. Inquiry number 3840587.11. Aerial photographs dated 1948, 1959, 1961, 1970, 1978, 1981, 1990, 1994, 1996, 2005, 2006, 2009, 2010, and 2012. Report prepared by Environmental Data Resources, 440 Wheelers Farms Road, Milford, Connecticut 06461, 800-353-0050.

EDR Lien and AUL Search Report prepared for the subject property dated April 29, 2015. Inquiry number 4276317.5. Report prepared by Environmental Data Resources, 440 Wheelers Farms Road, Milford, Connecticut 06461, 800-352-0050.

EDR Radius Map with GeoCheck®, prepared for prepared for the subject property dated April 27, 2015. Inquiry number 04276317.7r. Report prepared by Environmental Data Resources, 440 Wheelers Farms Road, Milford, Connecticut 06461, 800-352-0050.

EDR Sanborn Map Report, “No Coverage”, prepared for prepared for the subject property dated January 27, 2014. Inquiry number 3840587.3. No Coverage. Report prepared by Environmental Data Resources, 440 Wheelers Farms Road, Milford, Connecticut 06460, 800-352-0050.

Google Earth website, www.google.earth.com.

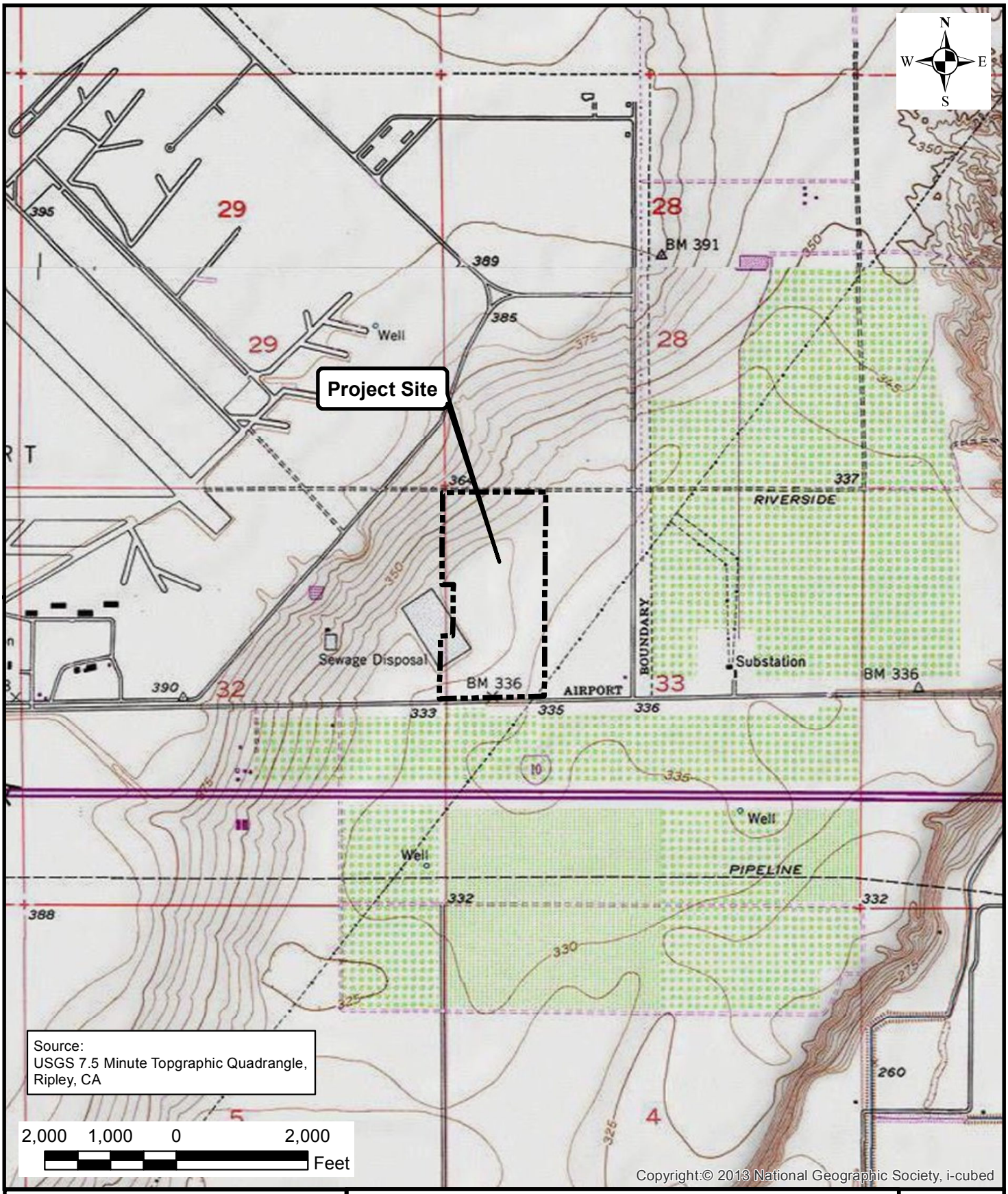
Phase I Environmental Site Assessment prepared for the Blythe Energy II Project dated June 2001. Report prepared by Greystone Environmental Consultants, Inc., 650 University Avenue, Suite 100, Sacramento, California 95825.

Second Semi-Annual and Annual 2014 Monitoring Report dated January 2015. Report prepared by Amec Foster Wheeler Environment and Infrastructure Inc.121 Innovation drive, Suite 200, Irvine, California 92617.

Threshold Limit Concentration (Federal regulated hazardous waste). Source is California Code of Regulations, Title 22, Chapter 11, Article.

United States Environmental Protection Agency Regional Screening Level for Industrial Soil dated November 2011.

Figures



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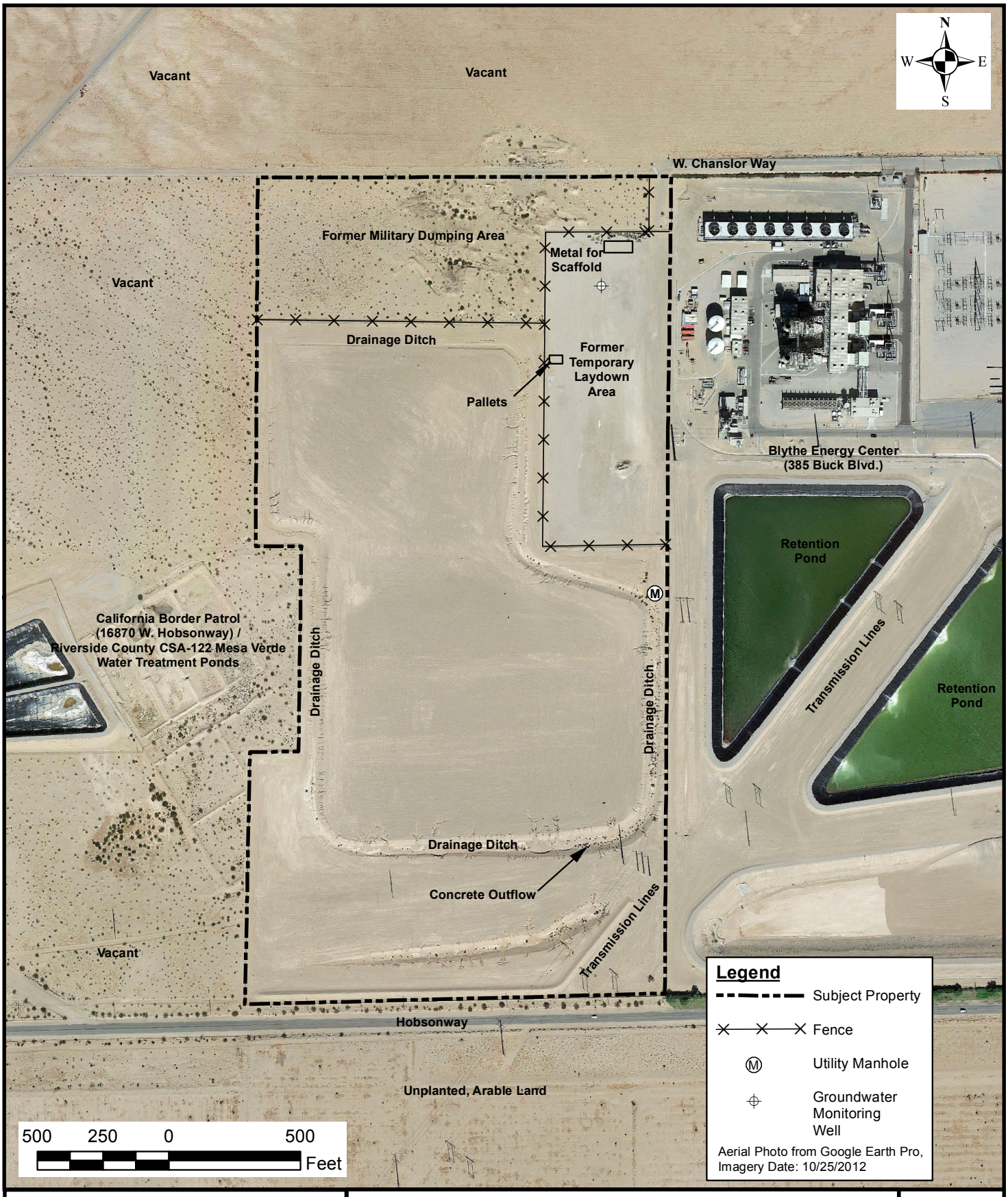
SITE LOCATION MAP

Blythe Energy II Project
W Hobsonway & Buck Blvd.
Blythe, CA 92225

FIGURE NUMBER:
1

DRAWN BY:	DATE:	PROJECT NUMBER:	SHEET NUMBER:
M. Scop	4/24/2015	60344680 - 02	1 of 1

Document Path: J:\Client-Projects\Stoel Rives LLP\60344680_2015 EDD Program\900-CAD\2 - Sonora Energy\sitelocation.mxd



AECOM

AECOM ENVIRONMENT
1220 AVENIDA ACASO
CAMARILLO, CALIFORNIA 93012
PHONE: 805.388.3775
FAX: 805.388.3577
WEB: HTTP://WWW.AECOM.COM

SITE PLAN

Blythe Energy II Project
W Hobsonway & Buck Blvd.
Blythe, CA 92225

FIGURE NUMBER:
2

DRAWN BY:	DATE:	PROJECT NUMBER:	SHEET NUMBER:
M. Scop	4/24/2015	60344680 - 02	1 of 1

Document Path: J:\Client-Projects\Stoel Rives LLP\60344680_2015 EDD Program\900-CAD\2 - Sonora Energy\site plan.mxd

Appendix A

Representative Site Photographs

AECOM Environment

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AltaGas Power Holdings (U.S.) Inc.	Parcels 824-101-013 and 824-101-012, Blythe, CA	60344680

Photo No.	Date:
1	04/22/15

Direction Photo Taken:

West

Description:

View of the Former Layout Area of the subject property and the perimeter fence. Note the scaffold materials stored on the right.

Photo No.	Date:
2	04/22/15

Direction Photo Taken:

Southwest

Description:

View of the subject property. Note Southern California Edison transmission lines in the background.

AECOM Environment

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AltaGas Power Holdings (U.S.) Inc.	Parcels 824-101-013 and 824-101-012, Blythe, CA	60344680

Photo No.	Date:
3	04/22/15

Direction Photo Taken:

North

Description:

View of MW-4 located on the Former Layout Area of the subject property.

Photo No.	Date:
4	04/22/15

Direction Photo Taken:

East

Description:

View of the northern portion in the subject property. Note Blythe Energy Center in the background.

AECOM Environment

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AltaGas Power Holdings (U.S.) Inc.	Parcels 824-101-013 and 824-101-012, Blythe, CA	60344680

Photo No.	Date:
5	04/22/15

Direction Photo Taken:

West

Description:

View of the drainage ditch on the subject property. Note transmission lines in the background.

Photo No.	Date:
6	04/22/15

Direction Photo Taken:

South

Description:

View of the adjacent property to the south, vacant desert land.

AECOM Environment

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AltaGas Power Holdings (U.S.) Inc.	Parcels 824-101-013 and 824-101-012, Blythe, CA	60344680

Photo No.	Date:
7	04/22/15

Direction Photo Taken:

East

Description:

View of the westerly adjacent property (California Border Patrol).

Photo No.	Date:
8	04/22/15

Direction Photo Taken:

North

Description:

View of the former military dump area in the northern portion of the subject property. Note mounds of disturbed dirt and refuse.

AECOM Environment

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AltaGas Power Holdings (U.S.) Inc.	Parcels 824-101-013 and 824-101-012, Blythe, CA	60344680

Photo No.	Date:
9	04/22/15

Direction Photo Taken:

South

Description:

View of the former military dump area in the northern portion of the subject property from West Chanslor Avenue (Riverside Avenue).

Photo No.	Date:
10	04/22/15

Direction Photo Taken:

East

Description:

View of northern portion of the subject property on the right and the adjacent property to the north (vacant desert land).

Appendix B

Environmental Lien and AUL Search Report

Irish
BUCK BLVD
Blythe, CA 92225

Inquiry Number: 4276317.5
April 29, 2015

EDR Environmental Lien and AUL Search

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

EDR Environmental Lien and AUL Search

The EDR Environmental Lien and AUL Search Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description); and
- provide a copy of the deed or cite documents reviewed.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

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EDR Environmental Lien and AUL Search

TARGET PROPERTY INFORMATION

ADDRESS

BUCK BLVD
Irish
Blythe, CA 92225

RESEARCH SOURCE

Source 1:

Riversdie Recorder
Riverside, CA

PROPERTY INFORMATION

Deed 1:

Type of Deed:	deed
Title is vested in:	Altagas Power Holdings Inc
Title received from:	Gila Farm Land LLC
Deed Dated	4/28/2014
Deed Recorded:	4/28/2014
Book:	NA
Page:	na
Volume:	na
Instrument:	na
Docket:	NA
Land Record Comments:	
Miscellaneous Comments:	
Legal Description:	See Exhibit
Legal Current Owner:	Altagas Power Holdings Inc
Parcel # / Property Identifier:	821-120-028
Comments:	See Exhibit

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

AULs: Found ☐ Not Found ☒

Deed Exhibit 1

CHICAGO TITLE COMPANY

DOC # 2014-0152401
04/28/2014 11:17 AM Fees: $31.00
Page 1 of 3 Doc T Tax Paid
Recorded in Official Records
County of Riverside
Larry W. Ward
Assessor, County Clerk & Recorder

WHEN RECORDED, RETURN TO:

Michael W. Christopherson, Esq.
STOEL RIVES LLP
201 South Main Street, Suite 1100
Salt Lake City, Utah 84111

This document was electronically submitted to the County of Riverside for recording
Receipted by: TVERBA

The undersigned Grantor declares that Documentary Transfer Tax shall be shown on a separate Declaration or Statement of Tax Due and not of public record pursuant to California Revenue & Taxation Code 11932-11933.

Assessor's Parcel Number: 821-120-028 TRA: 085-000

GRANT DEED

FOR VALUE RECEIVED, the receipt and sufficiency of which is hereby acknowledged, GILA FARM LAND LLC, a Delaware limited liability company ("Grantor"), hereby grants to ALTAGAS POWER HOLDINGS (U.S.) INC., a Delaware corporation ("Grantee"), all of that certain real property, together with any and all interests, rights and appurtenances thereto, as well as any and all improvements thereon, situated in Riverside County, California, as more particularly described in attached Exhibit A (the "Property").

DATED this 28th day of April, 2014.

GILA FARM LAND LLC, Delaware limited liability company

By: _____
Name: Jacob A. Switzer
Title: Authorized Signer

A/75998383.2

00015606-X49

STATE OF CALIFORNIA)
) ss.
COUNTY OF Los Angeles)

On April 24, 2014, before me, Soon Gyu Guimm, Notary Public, personally appeared Jacob A. Swiller, who proved to me on the basis of satisfactory evidence to be the person~~(s)~~ whose name~~(s)~~ is/~~are~~ subscribed to the within instrument, and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity~~(ies)~~, and that by his/~~her/their~~ signature~~(s)~~ on the instrument the person~~(s)~~, or the entity upon behalf of which the person~~(s)~~ acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Notary Public (Seal)

SOON GYU GUIMM
Commission # 1963667
Notary Public - California
Los Angeles County
My Comm. Expires Jan 11, 2016

Exhibit A

Legal Description of the Property

That certain real property located in Riverside County, California, more particularly described as follows:

PARCEL 33 OF PARCEL MAP 14093, IN THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 105, PAGES 78 THROUGH 87, INCLUSIVE OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

For Reference Purposes Only: APN: 821-120-028

Appendix C

Environmental Database Report

Sonora
BUCK BLVD
Blythe, CA 92225

Inquiry Number: 04276317.7r
April 27, 2015

The EDR Radius Map™ Report

EDR® Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	8
Orphan Summary	110
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

GeoCheck - Not Requested

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

BUCK BLVD
BLYTHE, CA 92225

COORDINATES

Latitude (North):	33.6141000 - 33° 36' 50.76''
Longitude (West):	114.6900000 - 114° 41' 24.00''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	714310.8
UTM Y (Meters):	3721568.8
Elevation:	331 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	33114-E6 RIPLEY, CA
Most Recent Revision:	1975
North Map:	33114-F6 MCCOY WASH, CA
Most Recent Revision:	1970

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20120423
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
BUCK BLVD
BLYTHE, CA 92225

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	BLYTHE LEMON RANCH #	15550 HOBSONWAY	HIST CORTESE, LUST	Higher	489, 0.093, SE
A2	SUNWORLD FACILITY	15550 EAST HOBSONWAY	LUST	Higher	489, 0.093, SE
A3	SUN WORLD	15550 W HOBSONWAY	LUST	Higher	489, 0.093, SE
A4	BLYTHE LEMON RANCH #	15550 HOBSONEWAY	HIST CORTESE	Higher	499, 0.095, SE
B5	BLYTHE RCAG	BLYTHE AFSFO	HIST UST	Higher	577, 0.109, East
B6	BLYTHE AIRPORT DUMP	BLYTHE AIRPORT	CHMIRS, WMUDS/SWAT	Higher	577, 0.109, East
7	FARMERS AERIAL SVC	17500 W HOBSON WAY	ENVIROSTOR, HWP	Higher	2806, 0.531, WSW

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

CERCLIS ---------- Comprehensive Environmental Response, Compensation, and Liability Information System
FEDERAL FACILITY ---------- Federal Facility Site Information listing

Federal CERCLIS NFRAP site List

CERC-NFRAP ---------- CERCLIS No Further Remedial Action Planned

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-CESQG ---------- RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

US ENG CONTROLS ---------- Engineering Controls Sites List
US INST CONTROL ---------- Sites with Institutional Controls

LUCIS ---------- Land Use Control Information System

Federal ERNS list

ERNS ---------- Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE ---------- State Response Sites

State and tribal landfill and/or solid waste disposal site lists

SWF/LF ---------- Solid Waste Information System

State and tribal leaking storage tank lists

SLIC ---------- Statewide SLIC Cases
INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

UST ---------- Active UST Facilities
AST ---------- Aboveground Petroleum Storage Tank Facilities
INDIAN UST ---------- Underground Storage Tanks on Indian Land
FEMA UST ---------- Underground Storage Tank Listing

State and tribal voluntary cleanup sites

INDIAN VCP ---------- Voluntary Cleanup Priority Listing
VCP ---------- Voluntary Cleanup Program Properties

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---------- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

DEBRIS REGION 9 ---------- Torres Martinez Reservation Illegal Dump Site Locations
ODI ---------- Open Dump Inventory
SWRCY ---------- Recycler Database
HAULERS ---------- Registered Waste Tire Haulers Listing
INDIAN ODI ---------- Report on the Status of Open Dumps on Indian Lands

Local Lists of Hazardous waste / Contaminated Sites

US CDL ---------- Clandestine Drug Labs
HIST Cal-Sites ---------- Historical Calsites Database
SCH ---------- School Property Evaluation Program
Toxic Pits ---------- Toxic Pits Cleanup Act Sites
CDL ---------- Clandestine Drug Labs
US HIST CDL ---------- National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

CA FID UST ---------- Facility Inventory Database

SWEEPS UST	SWEEPS UST Listing

Local Land Records

LIENS 2	CERCLA Lien Information
LIENS	Environmental Liens Listing
DEED	Deed Restriction Listing

Records of Emergency Release Reports

HMIRS	Hazardous Materials Information Reporting System
CHMIRS	California Hazardous Material Incident Report System
LDS	Land Disposal Sites Listing
MCS	Military Cleanup Sites Listing
SPILLS 90	SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated
DOT OPS	Incident and Accident Data
DOD	Department of Defense Sites
FUDS	Formerly Used Defense Sites
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
US MINES	Mines Master Index File
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
SSTS	Section 7 Tracking Systems
ICIS	Integrated Compliance Information System
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
RADINFO	Radiation Information Database
FINDS	Facility Index System/Facility Registry System
RAATS	RCRA Administrative Action Tracking System
RMP	Risk Management Plans
CA BOND EXP. PLAN	Bond Expenditure Plan
UIC	UIC Listing
NPDES	NPDES Permits Listing
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
Notify 65	Proposition 65 Records
DRYCLEANERS	Cleaner Facilities
WIP	Well Investigation Program Case List
ENF	Enforcement Action Listing
HAZNET	Facility and Manifest Data
EMI	Emissions Inventory Data
INDIAN RESERV	Indian Reservations
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
LEAD SMELTERS	Lead Smelter Sites
HWT	Registered Hazardous Waste Transporter Database
PROC	Certified Processors Database

Financial Assurance ---------- Financial Assurance Information Listing
EPA WATCH LIST ---------- EPA WATCH LIST
US FIN ASSUR ---------- Financial Assurance Information
WDS ---------- Waste Discharge System
MWMP ---------- Medical Waste Management Program Listing
PCB TRANSFORMER ---------- PCB Transformer Registration Database
COAL ASH EPA ---------- Coal Combustion Residues Surface Impoundments List
US AIRS ---------- Aerometric Information Retrieval System Facility Subsystem
PRP ---------- Potentially Responsible Parties
2020 COR ACTION ---------- 2020 Corrective Action Program List
COAL ASH DOE ---------- Steam-Electric Plant Operation Data

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP ---------- EDR Proprietary Manufactured Gas Plants
EDR US Hist Auto Stat ---------- EDR Exclusive Historic Gas Stations
EDR US Hist Cleaners ---------- EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF ---------- Recovered Government Archive Solid Waste Facilities List
RGA LUST ---------- Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to,

identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 03/11/2015 has revealed that there is 1 ENVIROSTOR site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
FARMERS AERIAL SVC	***17500 W HOBSON WAY***	***WSW 1/2 - 1 (0.531 mi.)***	***7***	***108***
Facility Id: 80001759				
Status: * Inactive				

State and tribal leaking storage tank lists

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 03/13/2015 has revealed that there are 3 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BLYTHE LEMON RANCH #	***15550 HOBSONWAY***	***SE 0 - 1/8 (0.093 mi.)***	***A1***	***8***
Global Id: T0606500876				
Global Id: T0606500841				
Global Id: T0606500846				
Global Id: T0606500815				
Global Id: T0606500802				
**Additional key fields are available in the Map Findings section*				
Global ID: T0606500809				
Global ID: T0606500810				
Global ID: T0606500811				
Global ID: T0606500812				
Global ID: T0606500813				
**Additional key fields are available in the Map Findings section*				
Status: Completed - Case Closed				
Status: 9 - Case Closed				
SUNWORLD FACILITY	15550 EAST HOBSONWAY	SE 0 - 1/8 (0.093 mi.)	A2	103
Global Id: T0606500781				
Global Id: T0606500868				
Global ID: T0606500781				
Status: Completed - Case Closed				
Status: 9 - Case Closed				
SUN WORLD	15550 W HOBSONWAY	SE 0 - 1/8 (0.093 mi.)	A3	105
Facility Status: 0				
Facility Id: 91952				

EXECUTIVE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: The Waste Management Unit Database System is used for program tracking and inventory of waste management units. The source is the State Water Resources Control Board.

A review of the WMUDS/SWAT list, as provided by EDR, and dated 04/01/2000 has revealed that there is 1 WMUDS/SWAT site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BLYTHE AIRPORT DUMP	***BLYTHE AIRPORT***	***E 0 - 1/8 (0.109 mi.)***	***B6***	***106***

Local Lists of Registered Storage Tanks

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there is 1 HIST UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BLYTHE RCAG Facility Id: 00000060256	BLYTHE AFSFO	E 0 - 1/8 (0.109 mi.)	B5	105

Other Ascertainable Records

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there are 2 HIST CORTESE sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BLYTHE LEMON RANCH # Reg Id: 7T2225130 Reg Id: 7T2225087 Reg Id: 7T2225043 Reg Id: 7T2225050 Reg Id: 7T2225069 **Additional key fields are available in the Map Findings section*	***15550 HOBSONWAY***	***SE 0 - 1/8 (0.093 mi.)***	***A1***	***8***
BLYTHE LEMON RANCH # Reg Id: 7T2225102	15550 HOBSONEWAY	SE 0 - 1/8 (0.095 mi.)	A4	105

EXECUTIVE SUMMARY

HWP: Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

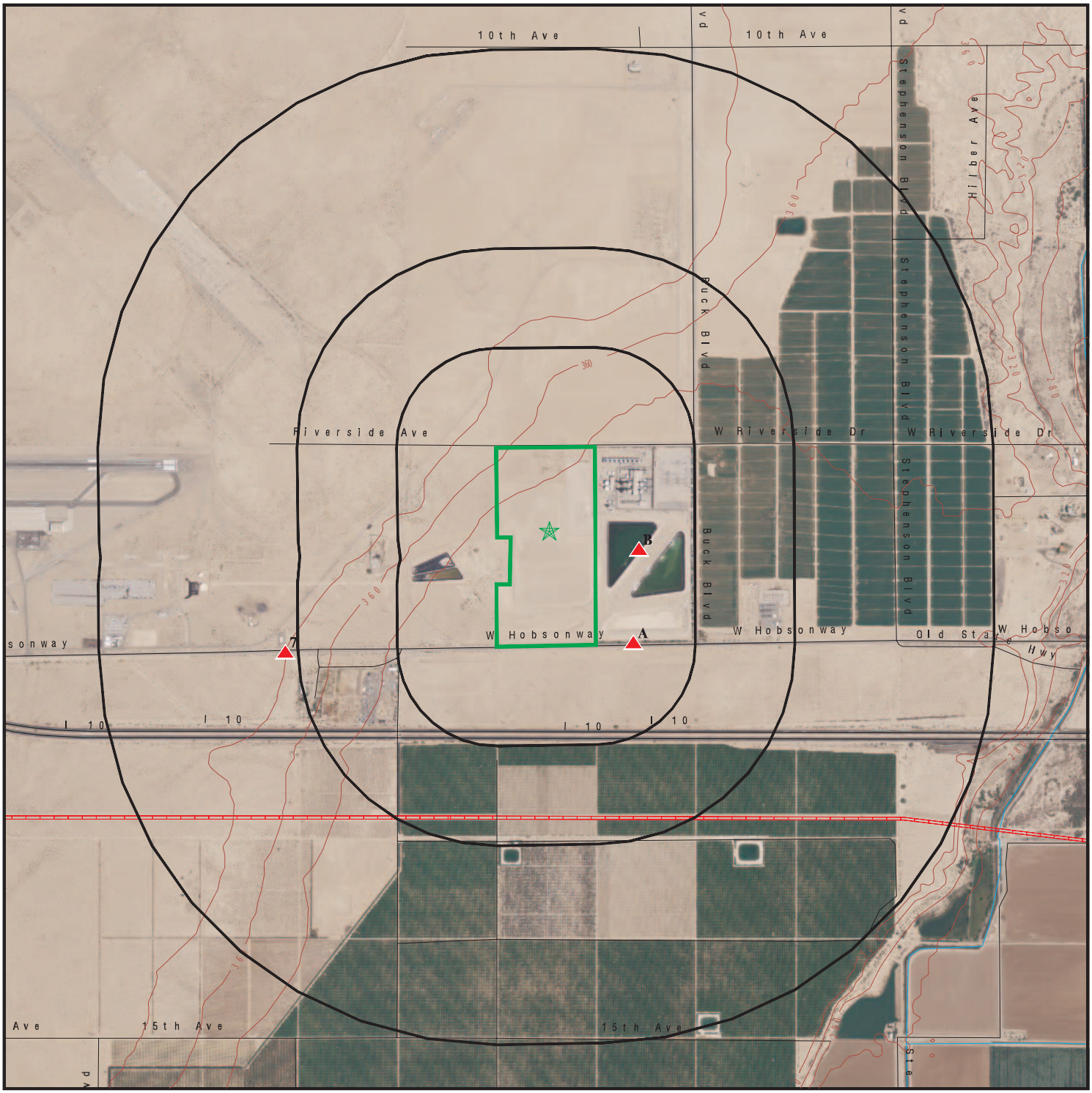
A review of the HWP list, as provided by EDR, and dated 02/23/2015 has revealed that there is 1 HWP site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
FARMERS AERIAL SVC	***17500 W HOBSON WAY***	***WSW 1/2 - 1 (0.531 mi.)***	***7***	***108***
EPA Id: CAD980889216				
Cleanup Status: UNKNOWN				

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 04276317.7R



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Oil & Gas pipelines from USGS

100-year flood zone

500-year flood zone

Areas of Concern

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Sonora	CLIENT:	AECOM
ADDRESS:	BUCK BLVD Blythe CA 92225	CONTACT:	Sarah Vogel
		INQUIRY #:	04276317.7r
LAT/LONG:	33.6141 / 114.69	DATE:	April 27, 2015 2:21 pm

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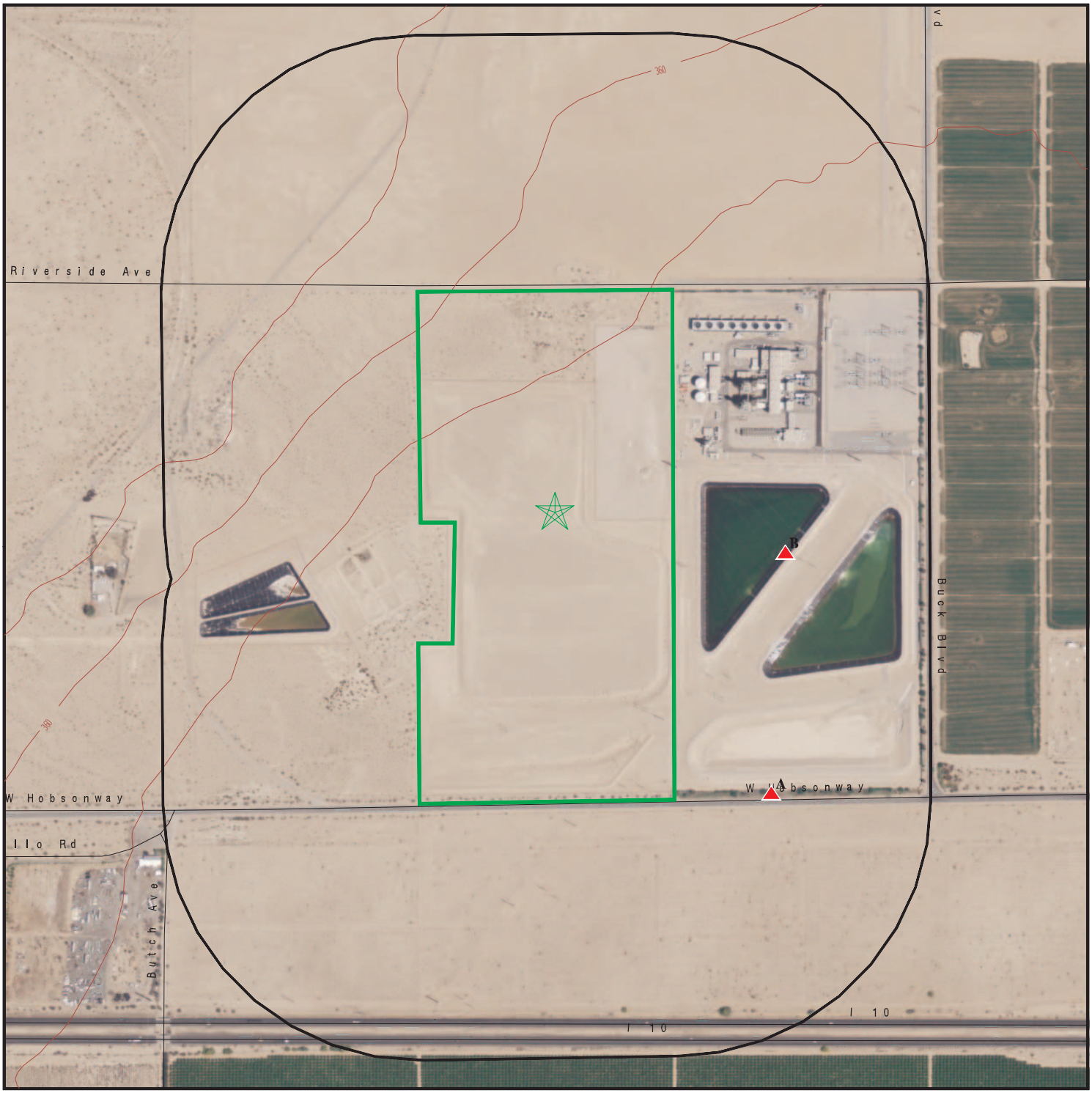
DETAIL MAP - 04276317.7R



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/8 1/4 1/2 Miles

- Indian Reservations BIA
- Oil & Gas pipelines from USGS
- 100-year flood zone
- 500-year flood zone
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Sonora	CLIENT: AECOM
ADDRESS: BUCK BLVD Blythe CA 92225	CONTACT: Sarah Vogel INQUIRY #: 04276317.7r
LAT/LONG: 33.6141 / 114.69	DATE: April 27, 2015 2:23 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
CERCLIS	0.500		0	0	0	NR	NR	0
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site List								
CERC-NFRAP	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
LUCIS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	1	NR	1
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500		3	0	0	NR	NR	3

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SLIC	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
FEMA UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
WMUDS/SWAT	0.500		1	0	0	NR	NR	1
Local Lists of Hazardous waste / Contaminated Sites								
US CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US HIST CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
CA FID UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		1	0	NR	NR	NR	1
SWEEPS UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
LIENS	TP		NR	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
MCS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
DOD	1.000		0	0	0	0	NR	0
FUDS	1.000		0	0	0	0	NR	0
CONSENT	1.000		0	0	0	0	NR	0
ROD	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
Cortese	0.500		0	0	0	NR	NR	0
HIST CORTESE	0.500		2	0	0	NR	NR	2
CUPA Listings	0.250		0	0	NR	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
HAZNET	TP		NR	NR	NR	NR	NR	0
EMI	TP		NR	NR	NR	NR	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
HWP	1.000		0	0	0	1	NR	1
HWT	0.250		0	0	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR US Hist Auto Stat	0.250		0	0	NR	NR	NR	0
EDR US Hist Cleaners	0.250		0	0	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	7	0	0	2	0	9

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1
SE
< 1/8
0.093 mi.
489 ft.

BLYTHE LEMON RANCH #69
15550 HOBSONWAY
BLYTHE, CA 92225

Site 1 of 4 in cluster A

HIST CORTESE **S103891543**
LUST **N/A**

Relative:
Higher

Actual:
338 ft.

HIST CORTESE:

Region:	CORTESE
Facility County Code:	33
Reg By:	LTNKA
Reg Id:	7T2225130
Region:	CORTESE
Facility County Code:	33
Reg By:	LTNKA
Reg Id:	7T2225087
Region:	CORTESE
Facility County Code:	33
Reg By:	LTNKA
Reg Id:	7T2225043
Region:	CORTESE
Facility County Code:	33
Reg By:	LTNKA
Reg Id:	7T2225050
Region:	CORTESE
Facility County Code:	33
Reg By:	LTNKA
Reg Id:	7T2225069
Region:	CORTESE
Facility County Code:	33
Reg By:	LTNKA
Reg Id:	7T2225066
Region:	CORTESE
Facility County Code:	33
Reg By:	LTNKA
Reg Id:	7T2225065
Region:	CORTESE
Facility County Code:	33
Reg By:	LTNKA
Reg Id:	7T2225067
Region:	CORTESE
Facility County Code:	33
Reg By:	LTNKA
Reg Id:	7T2225068
Region:	CORTESE
Facility County Code:	33
Reg By:	LTNKA
Reg Id:	7T2225063
Region:	CORTESE
Facility County Code:	33

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Reg By: LTNKA
Reg Id: 7T2225064

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225070

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225071

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225072

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225073

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225074

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225075

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225076

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225077

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225078

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225079

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225080

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225081

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225082

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225083

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225084

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225085

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225086

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225088

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225089

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225090

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225091

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225092

Region: CORTESE
Facility County Code: 33

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Reg By: LTNKA
Reg Id: 7T2225093

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225094

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225095

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225096

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225097

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225098

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225099

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225100

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225101

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225103

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225104

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225105

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225106

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225107

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225108

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225109

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225110

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225111

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225112

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225113

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225114

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225115

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225116

Region: CORTESE
Facility County Code: 33

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Reg By: LTNKA
Reg Id: 7T2225117

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225118

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225119

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225120

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225121

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225122

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225123

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225124

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225125

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225126

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225127

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225128

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225129

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225131

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225132

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225133

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225134

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225135

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225136

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225137

Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225138

LUST:
Region: STATE
Global Id: T0606500876
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 08/13/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225138

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500876
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500876
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500876
Status: Completed - Case Closed
Status Date: 08/13/1996

Regulatory Activities:
Global Id: T0606500876
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500876
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500876
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500841
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 09/18/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225103
LOC Case Number: Not reported
File Location: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500841
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500841
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500841
Status: Open - Site Assessment
Status Date: 08/30/1993

Global Id: T0606500841
Status: Completed - Case Closed
Status Date: 09/18/1996

Regulatory Activities:
Global Id: T0606500841
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500841
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500841
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500846
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 08/26/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225108

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500846
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500846
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500846
Status: Completed - Case Closed
Status Date: 08/26/1996

Regulatory Activities:
Global Id: T0606500846
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500846
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500846
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500815
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 05/03/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225077
LOC Case Number: Not reported
File Location: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500815
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500815
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500815
Status: Completed - Case Closed
Status Date: 05/03/1996

Regulatory Activities:
Global Id: T0606500815
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500815
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500815
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500802
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 05/14/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225064
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500802
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500802
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500802
Status: Completed - Case Closed
Status Date: 05/14/1996

Regulatory Activities:
Global Id: T0606500802
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500802
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500802
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500823
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 05/14/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225085
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500823
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500823
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500823
Status:	Completed - Case Closed
Status Date:	05/14/1996

Regulatory Activities:

Global Id:	T0606500823
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500823
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500823
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500850
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	05/30/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225112
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500850
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500850
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500850
Status:	Completed - Case Closed
Status Date:	05/30/1996

Regulatory Activities:

Global Id:	T0606500850
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500850
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500850
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500827
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	05/30/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225089
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500827
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500827
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500827
Status:	Completed - Case Closed
Status Date:	05/30/1996

Regulatory Activities:

Global Id:	T0606500827
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500827
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500827
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500859
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	09/26/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225121
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500859
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500859
Status:	Open - Case Begin Date
Status Date:	07/08/1991
Global Id:	T0606500859
Status:	Open - Site Assessment
Status Date:	08/30/1993
Global Id:	T0606500859
Status:	Completed - Case Closed
Status Date:	09/26/1996

Regulatory Activities:

Global Id:	T0606500859
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery
Global Id:	T0606500859
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped
Global Id:	T0606500859
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500845
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	08/26/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225107
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500845
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500845
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500845
Status: Completed - Case Closed
Status Date: 08/26/1996

Regulatory Activities:
Global Id: T0606500845
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500845
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500845
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500807
Latitude: 33.6096253
Longitude: -114.697655
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 04/26/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225069
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500807
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500807
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500807
Status:	Completed - Case Closed
Status Date:	04/26/1996

Regulatory Activities:

Global Id:	T0606500807
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500807
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500807
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500814
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	08/26/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225076
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500814
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500814
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500814
Status:	Completed - Case Closed
Status Date:	08/26/1996

Regulatory Activities:

Global Id:	T0606500814
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500814
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500814
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500819
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	01/23/1997
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225081
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Under Investigation
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500819
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500819
Status:	Completed - Case Closed
Status Date:	01/23/1997

Global Id:	T0606500819
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Regulatory Activities:

Global Id:	T0606500819
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500819
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500819
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500808
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	07/22/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225070
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500808
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500808
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500808
Status:	Completed - Case Closed
Status Date:	07/22/1996

Regulatory Activities:

Global Id:	T0606500808
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500808
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500808
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500865
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	01/23/1997
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225127
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500865
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500865
Status:	Completed - Case Closed
Status Date:	01/23/1997
Global Id:	T0606500865
Status:	Open - Case Begin Date
Status Date:	07/08/1991
Global Id:	T0606500865
Status:	Open - Site Assessment
Status Date:	07/29/1992

Regulatory Activities:

Global Id:	T0606500865
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery
Global Id:	T0606500865
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped
Global Id:	T0606500865
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500826
Latitude:	33.6096253
Longitude:	-114.697655
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	08/26/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225088
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500826
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500826
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500826
Status: Completed - Case Closed
Status Date: 08/26/1996

Regulatory Activities:
Global Id: T0606500826
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500826
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500826
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500843
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 08/13/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225105
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500843
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500843
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500843
Status:	Completed - Case Closed
Status Date:	08/13/1996

Regulatory Activities:

Global Id:	T0606500843
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500843
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500843
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500842
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	09/18/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225104
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500842
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500842
Status:	Open - Case Begin Date
Status Date:	07/08/1991
Global Id:	T0606500842
Status:	Open - Site Assessment
Status Date:	08/30/1993
Global Id:	T0606500842
Status:	Completed - Case Closed
Status Date:	09/18/1996

Regulatory Activities:

Global Id:	T0606500842
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery
Global Id:	T0606500842
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped
Global Id:	T0606500842
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500824
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	01/23/1997
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225086
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500824
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500824
Status: Completed - Case Closed
Status Date: 01/23/1997

Global Id: T0606500824
Status: Open - Case Begin Date
Status Date: 07/01/1991

Global Id: T0606500824
Status: Open - Site Assessment
Status Date: 07/01/1991

Regulatory Activities:
Global Id: T0606500824
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500824
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500824
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500869
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 08/13/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225131
LOC Case Number: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500869
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500869
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500869
Status: Completed - Case Closed
Status Date: 08/13/1996

Regulatory Activities:
Global Id: T0606500869
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500869
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500869
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500857
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 05/14/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225119
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500857
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500857
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500857
Status: Completed - Case Closed
Status Date: 05/14/1996

Regulatory Activities:
Global Id: T0606500857
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500857
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500857
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500849
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 08/13/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225111
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500849
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500849
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500849
Status:	Completed - Case Closed
Status Date:	08/13/1996

Regulatory Activities:

Global Id:	T0606500849
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500849
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500849
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500812
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	07/22/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225074
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500812
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500812
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500812
Status:	Completed - Case Closed
Status Date:	07/22/1996

Regulatory Activities:

Global Id:	T0606500812
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500812
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500812
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500864
Latitude:	33.6096253
Longitude:	-114.697655
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	09/18/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225126
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500864
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500864
Status:	Open - Case Begin Date
Status Date:	07/08/1991
Global Id:	T0606500864
Status:	Open - Site Assessment
Status Date:	07/01/1992
Global Id:	T0606500864
Status:	Completed - Case Closed
Status Date:	09/18/1996

Regulatory Activities:

Global Id:	T0606500864
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery
Global Id:	T0606500864
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped
Global Id:	T0606500864
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500806
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	08/09/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225068
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500806
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500806
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500806
Status: Completed - Case Closed
Status Date: 08/09/1996

Regulatory Activities:
Global Id: T0606500806
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500806
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500806
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500829
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 07/02/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225091
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500829
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500829
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500829
Status:	Completed - Case Closed
Status Date:	07/02/1996

Regulatory Activities:

Global Id:	T0606500829
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500829
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500829
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500832
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	01/23/1997
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225094
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500832
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500832
Status:	Completed - Case Closed
Status Date:	01/23/1997
Global Id:	T0606500832
Status:	Open - Case Begin Date
Status Date:	07/08/1991
Global Id:	T0606500832
Status:	Open - Site Assessment
Status Date:	07/01/1992

Regulatory Activities:

Global Id:	T0606500832
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery
Global Id:	T0606500832
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped
Global Id:	T0606500832
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500866
Latitude:	33.6096253
Longitude:	-114.697655
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	09/26/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225128
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500866
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500866
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500866
Status: Open - Site Assessment
Status Date: 08/27/1993

Global Id: T0606500866
Status: Completed - Case Closed
Status Date: 09/26/1996

Regulatory Activities:
Global Id: T0606500866
Action Type: Other
Date: 10/09/1991
Action: Leak Discovery

Global Id: T0606500866
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500866
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500805
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 09/18/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225067
LOC Case Number: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500805
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500805
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500805
Status: Open - Site Assessment
Status Date: 07/01/1992

Global Id: T0606500805
Status: Completed - Case Closed
Status Date: 09/18/1996

Regulatory Activities:
Global Id: T0606500805
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500805
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500805
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500840
Latitude: 33.6096253
Longitude: -114.697655
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 07/02/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

RB Case Number: 7T2225102
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500840
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500840
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500840
Status: Completed - Case Closed
Status Date: 07/02/1996

Regulatory Activities:
Global Id: T0606500840
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500840
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500840
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500874
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 08/13/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225136
LOC Case Number: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500874
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500874
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500874
Status: Completed - Case Closed
Status Date: 08/13/1996

Regulatory Activities:
Global Id: T0606500874
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500874
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500874
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500804
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 04/25/1997
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225066
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500804
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500804
Status: Completed - Case Closed
Status Date: 04/25/1997

Global Id: T0606500804
Status: Open - Case Begin Date
Status Date: 07/08/1991

Regulatory Activities:
Global Id: T0606500804
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500804
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500804
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500871
Latitude: 33.6096253
Longitude: -114.697655
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 08/13/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225133
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500871
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500871
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500871
Status:	Completed - Case Closed
Status Date:	08/13/1996

Regulatory Activities:

Global Id:	T0606500871
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500871
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500871
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500862
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	07/22/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225124
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500862
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500862
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500862
Status:	Completed - Case Closed
Status Date:	07/22/1996

Regulatory Activities:

Global Id:	T0606500862
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500862
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500862
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500873
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	08/13/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225135
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500873
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500873
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500873
Status:	Completed - Case Closed
Status Date:	08/13/1996

Regulatory Activities:

Global Id:	T0606500873
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500873
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500873
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500852
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	10/11/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225114
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500852
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500852
Status:	Open - Case Begin Date
Status Date:	07/08/1991
Global Id:	T0606500852
Status:	Open - Site Assessment
Status Date:	07/01/1993
Global Id:	T0606500852
Status:	Completed - Case Closed
Status Date:	10/11/1996

Regulatory Activities:

Global Id:	T0606500852
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery
Global Id:	T0606500852
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped
Global Id:	T0606500852
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500788
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	04/30/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225050
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500788
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500788
Status: Open - Case Begin Date
Status Date: 08/01/1986

Global Id: T0606500788
Status: Open - Remediation
Status Date: 12/13/1993

Global Id: T0606500788
Status: Open - Site Assessment
Status Date: 08/01/1986

Global Id: T0606500788
Status: Completed - Case Closed
Status Date: 04/30/1996

Global Id: T0606500788
Status: Open - Site Assessment
Status Date: 01/09/1989

Global Id: T0606500788
Status: Open - Site Assessment
Status Date: 05/08/1989

Global Id: T0606500788
Status: Open - Site Assessment
Status Date: 02/18/1991

Regulatory Activities:
Global Id: T0606500788
Action Type: Other
Date: 08/01/1986
Action: Leak Reported

Region: STATE
Global Id: T0606500820
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Status Date:	09/26/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225082
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500820
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500820
Status:	Open - Case Begin Date
Status Date:	07/08/1991
Global Id:	T0606500820
Status:	Open - Site Assessment
Status Date:	08/26/1993
Global Id:	T0606500820
Status:	Completed - Case Closed
Status Date:	09/26/1996

Regulatory Activities:

Global Id:	T0606500820
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery
Global Id:	T0606500820
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped
Global Id:	T0606500820
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500863
Latitude:	33.6096253
Longitude:	-114.697655

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	08/13/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225125
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500863
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500863
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500863
Status:	Completed - Case Closed
Status Date:	08/13/1996

Regulatory Activities:

Global Id:	T0606500863
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500863
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500863
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500810
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Status Date:	08/13/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225072
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500810
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500810
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500810
Status:	Completed - Case Closed
Status Date:	08/13/1996

Regulatory Activities:

Global Id:	T0606500810
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500810
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500810
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500853
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	08/26/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225115
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500853
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500853
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500853
Status:	Completed - Case Closed
Status Date:	08/26/1996

Regulatory Activities:

Global Id:	T0606500853
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500853
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500853
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500851
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	05/30/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

RB Case Number: 7T2225113
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500851
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500851
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500851
Status: Completed - Case Closed
Status Date: 05/30/1996

Regulatory Activities:
Global Id: T0606500851
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500851
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500851
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500870
Latitude: 33.6096253
Longitude: -114.697655
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 01/23/1997
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225132
LOC Case Number: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

File Location: Not reported
Potential Media Affect: Under Investigation
Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500870
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500870
Status: Completed - Case Closed
Status Date: 01/23/1997

Global Id: T0606500870
Status: Open - Case Begin Date
Status Date: 07/08/1991

Regulatory Activities:
Global Id: T0606500870
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500870
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500870
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500833
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 08/13/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225095
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500833
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500833
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500833
Status: Completed - Case Closed
Status Date: 08/13/1996

Regulatory Activities:
Global Id: T0606500833
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500833
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500833
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500809
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 07/22/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225071
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500809
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500809
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500809
Status:	Completed - Case Closed
Status Date:	07/22/1996

Regulatory Activities:

Global Id:	T0606500809
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500809
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500809
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500816
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	05/03/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225078
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500816
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500816
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500816
Status:	Completed - Case Closed
Status Date:	05/03/1996

Regulatory Activities:

Global Id:	T0606500816
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500816
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500816
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500861
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	08/13/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225123
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500861
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500861
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500861
Status:	Completed - Case Closed
Status Date:	08/13/1996

Regulatory Activities:

Global Id:	T0606500861
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500861
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500861
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500848
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	08/13/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225110
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500848
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500848
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500848
Status:	Completed - Case Closed
Status Date:	08/13/1996

Regulatory Activities:

Global Id:	T0606500848
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500848
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500848
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500818
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	08/13/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225080
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500818
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500818
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500818
Status:	Completed - Case Closed
Status Date:	08/13/1996

Regulatory Activities:

Global Id:	T0606500818
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500818
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500818
Action Type:	Other
Date:	09/20/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500822
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	08/13/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225084
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500822
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500822
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500822
Status:	Completed - Case Closed
Status Date:	08/13/1996

Regulatory Activities:

Global Id:	T0606500822
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500822
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500822
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500821
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	05/14/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225083
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500821
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500821
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500821
Status:	Completed - Case Closed
Status Date:	05/14/1996

Regulatory Activities:

Global Id:	T0606500821
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500821
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500821
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500825
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	01/23/1997
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225087
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500825
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500825
Status:	Completed - Case Closed
Status Date:	01/23/1997
Global Id:	T0606500825
Status:	Open - Case Begin Date
Status Date:	07/08/1991
Global Id:	T0606500825
Status:	Open - Site Assessment
Status Date:	07/01/1992

Regulatory Activities:

Global Id:	T0606500825
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery
Global Id:	T0606500825
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped
Global Id:	T0606500825
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500803
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	04/25/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225065
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500803
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500803
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500803
Status: Completed - Case Closed
Status Date: 04/25/1996

Regulatory Activities:
Global Id: T0606500803
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500803
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500803
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500858
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 08/26/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225120
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500858
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500858
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500858
Status:	Completed - Case Closed
Status Date:	08/26/1996

Regulatory Activities:

Global Id:	T0606500858
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500858
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500858
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500811
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	08/13/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225073
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500811
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500811
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500811
Status:	Completed - Case Closed
Status Date:	08/13/1996

Regulatory Activities:

Global Id:	T0606500811
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500811
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500811
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500872
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	09/26/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225134
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500872
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500872
Status:	Open - Case Begin Date
Status Date:	07/08/1991
Global Id:	T0606500872
Status:	Open - Site Assessment
Status Date:	05/01/1993
Global Id:	T0606500872
Status:	Completed - Case Closed
Status Date:	09/26/1996

Regulatory Activities:

Global Id:	T0606500872
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery
Global Id:	T0606500872
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped
Global Id:	T0606500872
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500834
Latitude:	33.6096253
Longitude:	-114.697655
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	07/22/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225096
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500834
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500834
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500834
Status: Completed - Case Closed
Status Date: 07/22/1996

Regulatory Activities:
Global Id: T0606500834
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500834
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500834
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500856
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 05/30/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225118
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500856
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500856
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500856
Status:	Completed - Case Closed
Status Date:	05/30/1996

Regulatory Activities:

Global Id:	T0606500856
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500856
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500856
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500867
Latitude:	33.6096253
Longitude:	-114.697655
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	05/23/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225129
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500867
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500867
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500867
Status:	Completed - Case Closed
Status Date:	05/23/1996

Regulatory Activities:

Global Id:	T0606500867
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500867
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500867
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500828
Latitude:	33.6096253
Longitude:	-114.697655
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	01/23/1997
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225090
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500828
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500828
Status:	Completed - Case Closed
Status Date:	01/23/1997
Global Id:	T0606500828
Status:	Open - Case Begin Date
Status Date:	07/08/1991
Global Id:	T0606500828
Status:	Open - Site Assessment
Status Date:	07/01/1992

Regulatory Activities:

Global Id:	T0606500828
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery
Global Id:	T0606500828
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped
Global Id:	T0606500828
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500839
Latitude:	33.6096253
Longitude:	-114.697655
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	09/26/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225101
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500839
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500839
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500839
Status: Open - Site Assessment
Status Date: 08/25/1993

Global Id: T0606500839
Status: Completed - Case Closed
Status Date: 09/26/1996

Regulatory Activities:
Global Id: T0606500839
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500839
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500839
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500844
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 07/02/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225106
LOC Case Number: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500844
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500844
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500844
Status: Completed - Case Closed
Status Date: 07/02/1996

Regulatory Activities:
Global Id: T0606500844
Action Type: Other
Date: 10/09/1991
Action: Leak Discovery

Global Id: T0606500844
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500844
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500838
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 08/13/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225100
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500838
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500838
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500838
Status: Completed - Case Closed
Status Date: 08/13/1996

Regulatory Activities:
Global Id: T0606500838
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500838
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500838
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500847
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 07/02/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225109
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500847
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500847
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500847
Status:	Completed - Case Closed
Status Date:	07/02/1996

Regulatory Activities:

Global Id:	T0606500847
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500847
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500847
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500860
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	09/26/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225122
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500860
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500860
Status:	Open - Case Begin Date
Status Date:	07/08/1991
Global Id:	T0606500860
Status:	Open - Site Assessment
Status Date:	08/30/1993
Global Id:	T0606500860
Status:	Completed - Case Closed
Status Date:	09/26/1996

Regulatory Activities:

Global Id:	T0606500860
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery
Global Id:	T0606500860
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped
Global Id:	T0606500860
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500813
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	08/26/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225075
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500813
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500813
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500813
Status: Completed - Case Closed
Status Date: 08/26/1996

Regulatory Activities:
Global Id: T0606500813
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500813
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500813
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500801
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 05/14/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225063
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500801
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500801
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500801
Status:	Completed - Case Closed
Status Date:	05/14/1996

Regulatory Activities:

Global Id:	T0606500801
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500801
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500801
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500836
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	07/02/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225098
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500836
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500836
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500836
Status:	Completed - Case Closed
Status Date:	07/02/1996

Regulatory Activities:

Global Id:	T0606500836
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500836
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500836
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500817
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	05/03/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225079
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500817
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500817
Status:	Open - Case Begin Date
Status Date:	07/08/1991

Global Id:	T0606500817
Status:	Completed - Case Closed
Status Date:	05/03/1996

Regulatory Activities:

Global Id:	T0606500817
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery

Global Id:	T0606500817
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

Global Id:	T0606500817
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500854
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	01/23/1997
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225116
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500854
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500854
Status:	Completed - Case Closed
Status Date:	01/23/1997
Global Id:	T0606500854
Status:	Open - Case Begin Date
Status Date:	07/08/1991
Global Id:	T0606500854
Status:	Open - Site Assessment
Status Date:	07/01/1992

Regulatory Activities:

Global Id:	T0606500854
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery
Global Id:	T0606500854
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped
Global Id:	T0606500854
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500830
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	09/18/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225092
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500830
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500830
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500830
Status: Open - Site Assessment
Status Date: 07/01/1992

Global Id: T0606500830
Status: Completed - Case Closed
Status Date: 09/18/1996

Regulatory Activities:
Global Id: T0606500830
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500830
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500830
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500835
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 10/11/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225097
LOC Case Number: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

File Location: Not reported
Potential Media Affect: Under Investigation
Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500835
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500835
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500835
Status: Completed - Case Closed
Status Date: 10/11/1996

Regulatory Activities:
Global Id: T0606500835
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500835
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500835
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500875
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 08/13/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225137
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500875
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500875
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500875
Status: Completed - Case Closed
Status Date: 08/13/1996

Regulatory Activities:
Global Id: T0606500875
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500875
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500875
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500855
Latitude: 33.6096253
Longitude: -114.697655
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 01/23/1997
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225117
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500855
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500855
Status:	Completed - Case Closed
Status Date:	01/23/1997
Global Id:	T0606500855
Status:	Open - Case Begin Date
Status Date:	08/06/1991
Global Id:	T0606500855
Status:	Open - Site Assessment
Status Date:	07/01/1992

Regulatory Activities:

Global Id:	T0606500855
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery
Global Id:	T0606500855
Action Type:	Other
Date:	07/08/1995
Action:	Leak Stopped
Global Id:	T0606500855
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

Region:	STATE
Global Id:	T0606500831
Latitude:	33.611111
Longitude:	-114.694174
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	07/22/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225093
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500831
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500831
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500831
Status: Completed - Case Closed
Status Date: 07/22/1996

Regulatory Activities:
Global Id: T0606500831
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500831
Action Type: Other
Date: 07/08/1991
Action: Leak Stopped

Global Id: T0606500831
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500837
Latitude: 33.6096253
Longitude: -114.697655
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 10/11/1996
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225099
LOC Case Number: Not reported
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500837
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500837
Status:	Open - Case Begin Date
Status Date:	07/08/1991
Global Id:	T0606500837
Status:	Open - Site Assessment
Status Date:	08/25/1993
Global Id:	T0606500837
Status:	Completed - Case Closed
Status Date:	10/11/1996

Regulatory Activities:

Global Id:	T0606500837
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery
Global Id:	T0606500837
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped
Global Id:	T0606500837
Action Type:	Other
Date:	10/09/1991
Action:	Leak Reported

LUST REG 7:

Region:	7
Status:	9 - Case Closed
Case Num:	7T2225071
Substance:	Gasoline - Automotive
ID:	462
Global ID:	T0606500809
Lead Agency:	Regional Board
Case Worker:	RT
Region:	7
Status:	9 - Case Closed
Case Num:	7T2225072

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Substance: Gasoline - Automotive
ID: 463
Global ID: T0606500810
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225073
Substance: Gasoline - Automotive
ID: 464
Global ID: T0606500811
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225074
Substance: Gasoline - Automotive
ID: 465
Global ID: T0606500812
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225075
Substance: Gasoline - Automotive
ID: 466
Global ID: T0606500813
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225076
Substance: Gasoline - Automotive
ID: 467
Global ID: T0606500814
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225077
Substance: Gasoline - Automotive
ID: 468
Global ID: T0606500815
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225078
Substance: Gasoline - Automotive
ID: 469
Global ID: T0606500816

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225079
Substance: Gasoline - Automotive
ID: 470
Global ID: T0606500817
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225080
Substance: Gasoline - Automotive
ID: 471
Global ID: T0606500818
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225063
Substance: Gasoline - Automotive
ID: 472
Global ID: T0606500801
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225081
Substance: Gasoline - Automotive
ID: 473
Global ID: T0606500819
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225082
Substance: Gasoline - Automotive
ID: 474
Global ID: T0606500820
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225083
Substance: Gasoline - Automotive
ID: 475
Global ID: T0606500821
Lead Agency: Regional Board
Case Worker: RT

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225084
Substance: Gasoline - Automotive
ID: 476
Global ID: T0606500822
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225085
Substance: Gasoline - Automotive
ID: 477
Global ID: T0606500823
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225086
Substance: Gasoline - Automotive
ID: 478
Global ID: T0606500824
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225087
Substance: Gasoline - Automotive
ID: 479
Global ID: T0606500825
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225088
Substance: Gasoline - Automotive
ID: 480
Global ID: T0606500826
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225089
Substance: Gasoline - Automotive
ID: 481
Global ID: T0606500827
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225090

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Substance: Gasoline - Automotive
ID: 482
Global ID: T0606500828
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225064
Substance: Gasoline - Automotive
ID: 483
Global ID: T0606500802
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225091
Substance: Gasoline - Automotive
ID: 484
Global ID: T0606500829
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225092
Substance: Gasoline - Automotive
ID: 485
Global ID: T0606500830
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225093
Substance: Gasoline - Automotive
ID: 486
Global ID: T0606500831
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225094
Substance: Gasoline - Automotive
ID: 487
Global ID: T0606500832
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225095
Substance: Gasoline - Automotive
ID: 488
Global ID: T0606500833

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225096
Substance: Gasoline - Automotive
ID: 489
Global ID: T0606500834
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225097
Substance: Gasoline - Automotive
ID: 490
Global ID: T0606500835
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225099
Substance: Gasoline - Automotive
ID: 491
Global ID: T0606500837
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225100
Substance: Gasoline - Automotive
ID: 492
Global ID: T0606500838
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225065
Substance: Gasoline - Automotive
ID: 493
Global ID: T0606500803
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225101
Substance: Gasoline - Automotive
ID: 494
Global ID: T0606500839
Lead Agency: Regional Board
Case Worker: RT

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225102
Substance: Gasoline - Automotive
ID: 495
Global ID: T0606500840
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225103
Substance: Gasoline - Automotive
ID: 496
Global ID: T0606500841
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225104
Substance: Gasoline - Automotive
ID: 497
Global ID: T0606500842
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225105
Substance: Gasoline - Automotive
ID: 498
Global ID: T0606500843
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225106
Substance: Gasoline - Automotive
ID: 499
Global ID: T0606500844
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225107
Substance: Gasoline - Automotive
ID: 500
Global ID: T0606500845
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225108

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Substance: Gasoline - Automotive
ID: 501
Global ID: T0606500846
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225109
Substance: Gasoline - Automotive
ID: 502
Global ID: T0606500847
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225110
Substance: Gasoline - Automotive
ID: 503
Global ID: T0606500848
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225066
Substance: Gasoline - Automotive
ID: 504
Global ID: T0606500804
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225111
Substance: Gasoline - Automotive
ID: 505
Global ID: T0606500849
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225112
Substance: Gasoline - Automotive
ID: 506
Global ID: T0606500850
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225113
Substance: Gasoline - Automotive
ID: 507
Global ID: T0606500851

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225114
Substance: Gasoline - Automotive
ID: 508
Global ID: T0606500852
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225115
Substance: Gasoline - Automotive
ID: 509
Global ID: T0606500853
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225116
Substance: Gasoline - Automotive
ID: 510
Global ID: T0606500854
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225117
Substance: Gasoline - Automotive
ID: 511
Global ID: T0606500855
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225118
Substance: Gasoline - Automotive
ID: 512
Global ID: T0606500856
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225119
Substance: Gasoline - Automotive
ID: 513
Global ID: T0606500857
Lead Agency: Regional Board
Case Worker: RT

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225120
Substance: Gasoline - Automotive
ID: 514
Global ID: T0606500858
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225067
Substance: Gasoline - Automotive
ID: 515
Global ID: T0606500805
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225121
Substance: Gasoline - Automotive
ID: 516
Global ID: T0606500859
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225122
Substance: Gasoline - Automotive
ID: 517
Global ID: T0606500860
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225124
Substance: Gasoline - Automotive
ID: 519
Global ID: T0606500862
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225125
Substance: Gasoline - Automotive
ID: 520
Global ID: T0606500863
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225126

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Substance: Gasoline - Automotive
ID: 521
Global ID: T0606500864
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225127
Substance: Gasoline - Automotive
ID: 522
Global ID: T0606500865
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225128
Substance: Gasoline - Automotive
ID: 523
Global ID: T0606500866
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225129
Substance: Gasoline - Automotive
ID: 524
Global ID: T0606500867
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225130
Substance: Gasoline - Automotive
ID: 525
Global ID: T0606500868
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225068
Substance: Gasoline - Automotive
ID: 526
Global ID: T0606500806
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225131
Substance: Gasoline - Automotive
ID: 527
Global ID: T0606500869

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225132
Substance: Gasoline - Automotive
ID: 528
Global ID: T0606500870
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225133
Substance: Gasoline - Automotive
ID: 529
Global ID: T0606500871
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225134
Substance: Gasoline - Automotive
ID: 530
Global ID: T0606500872
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225135
Substance: Gasoline - Automotive
ID: 531
Global ID: T0606500873
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225136
Substance: Gasoline - Automotive
ID: 532
Global ID: T0606500874
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225137
Substance: Gasoline - Automotive
ID: 533
Global ID: T0606500875
Lead Agency: Regional Board
Case Worker: RT

BLYTHE LEMON RANCH #69 (Continued) **S103891543**

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225138
Substance: Gasoline - Automotive
ID: 534
Global ID: T0606500876
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225069
Substance: Gasoline - Automotive
ID: 535
Global ID: T0606500807
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225070
Substance: Gasoline - Automotive
ID: 536
Global ID: T0606500808
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225098
Substance: Gasoline - Automotive
ID: 537
Global ID: T0606500836
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225050
Substance: Gasoline - Automotive
ID: 1176
Global ID: T0606500788
Lead Agency: Regional Board
Case Worker: RT

Region: 7
Status: 9 - Case Closed
Case Num: 7T2225123
Substance: Gasoline - Automotive
ID: 518
Global ID: T0606500861
Lead Agency: Regional Board
Case Worker: RT

A2
SE
< 1/8
0.093 mi.
489 ft.

SUNWORLD FACILITY
15550 EAST HOBSONWAY
BLYTHE, CA 92225

Site 2 of 4 in cluster A

LUST **S106152993**
N/A

Relative:
Higher

Actual:
338 ft.

LUST:

Region:	STATE
Global Id:	T0606500781
Latitude:	33.6105968
Longitude:	-114.5851354
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	03/19/1996
Lead Agency:	COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker:	Not reported
Local Agency:	RIVERSIDE COUNTY LOP
RB Case Number:	7T2225043
LOC Case Number:	Not reported
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0606500781
Contact Type:	Local Agency Caseworker
Contact Name:	Riverside County LOP Closed Cases
Organization Name:	RIVERSIDE COUNTY LOP
Address:	3880 LEMON ST SUITE 200
City:	RIVERSIDE
Email:	Not reported
Phone Number:	9519558980

Status History:

Global Id:	T0606500781
Status:	Open - Case Begin Date
Status Date:	07/08/1991
Global Id:	T0606500781
Status:	Completed - Case Closed
Status Date:	03/19/1996
Global Id:	T0606500781
Status:	Open - Site Assessment
Status Date:	08/25/1993

Regulatory Activities:

Global Id:	T0606500781
Action Type:	Other
Date:	08/06/1991
Action:	Leak Discovery
Global Id:	T0606500781
Action Type:	Other
Date:	07/08/1991
Action:	Leak Stopped

SUNWORLD FACILITY (Continued) **S106152993**

Global Id: T0606500781
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

Region: STATE
Global Id: T0606500868
Latitude: 33.611111
Longitude: -114.694174
Case Type: LUST Cleanup Site
Status: Completed - Case Closed
Status Date: 01/23/1997
Lead Agency: COLORADO RIVER BASIN RWQCB (REGION 7)
Case Worker: Not reported
Local Agency: RIVERSIDE COUNTY LOP
RB Case Number: 7T2225130
LOC Case Number: 91952
File Location: Not reported
Potential Media Affect: Soil
Potential Contaminants of Concern: Gasoline
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

Contact:
Global Id: T0606500868
Contact Type: Local Agency Caseworker
Contact Name: Riverside County LOP Closed Cases
Organization Name: RIVERSIDE COUNTY LOP
Address: 3880 LEMON ST SUITE 200
City: RIVERSIDE
Email: Not reported
Phone Number: 9519558980

Status History:
Global Id: T0606500868
Status: Completed - Case Closed
Status Date: 01/23/1997

Global Id: T0606500868
Status: Open - Case Begin Date
Status Date: 07/08/1991

Global Id: T0606500868
Status: Open - Site Assessment
Status Date: 07/01/1992

Regulatory Activities:
Global Id: T0606500868
Action Type: Other
Date: 08/06/1991
Action: Leak Discovery

Global Id: T0606500868
Action Type: Other
Date: 07/08/1991

SUNWORLD FACILITY (Continued) **S106152993**

Action: Leak Stopped

Global Id: T0606500868
Action Type: Other
Date: 10/09/1991
Action: Leak Reported

LUST REG 7:
Region: 7
Status: 9 - Case Closed
Case Num: 7T2225043
Substance: Gasoline - Automotive
ID: 1177
Global ID: T0606500781
Lead Agency: Regional Board
Case Worker: RT

A3 **SUN WORLD** **LUST** **S104970796**
SE **15550 W HOBSONWAY** **N/A**
< 1/8 **BLYTHE, CA**
0.093 mi.
489 ft. **Site 3 of 4 in cluster A**

Relative:
Higher

Actual:
338 ft.

RIVERSIDE CO. LUST:
Region: RIVERSIDE
Facility ID: 91952
Employee: Hoy
Site Closed: Referred to Water Board
Case Type: Soil only
Facility Status: 0

A4 **BLYTHE LEMON RANCH #41** **HIST CORTESE** **S105022809**
SE **15550 HOBSONEWAY** **N/A**
< 1/8 **BLYTHE, CA 92225**
0.095 mi.
499 ft. **Site 4 of 4 in cluster A**

Relative:
Higher

Actual:
338 ft.

HIST CORTESE:
Region: CORTESE
Facility County Code: 33
Reg By: LTNKA
Reg Id: 7T2225102

B5 **BLYTHE RCAG** **HIST UST** **U001573612**
East **BLYTHE AFSFO** **N/A**
< 1/8 **BLYTHE, CA 92225**
0.109 mi.
577 ft. **Site 1 of 2 in cluster B**

Relative:
Higher

Actual:
338 ft.

HIST UST:
Region: STATE
Facility ID: 00000060256
Facility Type: Other

BLYTHE RCAG (Continued) **U001573612**

Other Type:	AIRCRAFT AIR/GRD COU
Contact Name:	TED MILLS
Telephone:	7143516709
Owner Name:	FEDERAL AVIATION ADMINISTRATIO
Owner Address:	6961 FLIGHT RD.
Owner City,St,Zip:	RIVERSIDE, CA 92504
Total Tanks:	0001
Tank Num:	001
Container Num:	25
Year Installed:	1975
Tank Capacity:	00000510
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	12
Leak Detection:	Visual, Stock Inventor

B6 **BLYTHE AIRPORT DUMP** **CHMIRS S103320645**
East **BLYTHE AIRPORT** **WMUDS/SWAT N/A**
< 1/8 **BLYTHE, CA 92225**
0.109 mi.
577 ft. **Site 2 of 2 in cluster B**

Relative:
Higher

Actual:
338 ft.

CHMIRS:

OES Incident Number:	01-4565	
OES notification:	08/10/2001	
OES Date:	Not reported	
OES Time:	Not reported	
Incident Date:	Not reported	
Date Completed:	**Not reported**	
Property Use:	Not reported	
Agency Id Number:	Not reported	
Agency Incident Number:	Not reported	
Time Notified:	Not reported	
Time Completed:	Not reported	
Surrounding Area:	Not reported	
Estimated Temperature:	Not reported	
Property Management:	Not reported	
More Than Two Substances Involved?:		Not reported
Resp Agncy Personel # Of Decontaminated:		Not reported
Responding Agency Personel # Of Injuries:		Not reported
Responding Agency Personel # Of Fatalities:		Not reported
Others Number Of Decontaminated:		Not reported
Others Number Of Injuries:		Not reported
Others Number Of Fatalities:		Not reported
Vehicle Make/year:	Not reported	
Vehicle License Number:	Not reported	
Vehicle State:	Not reported	
Vehicle Id Number:	Not reported	
CA DOT PUC/ICC Number:	Not reported	
Company Name:	Not reported	
Reporting Officer Name/ID:	Not reported	
Report Date:	Not reported	
Facility Telephone:	Not reported	
Waterway Involved:	No	
Waterway:	Not reported	
Spill Site:	Not reported	
Cleanup By:	Reporting Party	

BLYTHE AIRPORT DUMP (Continued) **S103320645**

Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2001
Agency:	So Cal Edison
Incident Date:	8/10/200112:00:00 AM
Admin Agency:	Riverside County Environmental Health
Amount:	Not reported
Contained:	Yes
Site Type:	Airport
E Date:	Not reported
Substance:	Mineral oil with PCB
Gallons:	2
Unknown:	0.000000
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported
Description:	Wind storm Knocked down transformer. Mineral oil was spilt. NOTE: PCB content of 200 Parts per million

WMUDS/SWAT:

Edit Date:	Not reported
Complexity:	Not reported
Primary Waste:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Base Meridian:	SB
NPID:	Not reported
Tonnage:	0
Regional Board ID:	Not reported
Municipal Solid Waste:	False
Superorder:	False
Open To Public:	False
Waste List:	False
Agency Type:	Not reported
Agency Name:	AIRPORTS DEPT.
Agency Department:	Not reported
Agency Address:	Not reported
Agency City,St,Zip:	Not reported
Agency Contact:	Not reported
Agency Telephone:	7147872494

BLYTHE AIRPORT DUMP (Continued) **S103320645**

Land Owner Name:	RIVERSIDE COUNTY
Land Owner Address:	PO BOX 1090
Land Owner City,St,Zip:	RIVERSIDE, CA 92501
Land Owner Contact:	Not reported
Land Owner Phone:	7147872669
Region:	7
Facility Type:	Not reported
Facility Description:	Not reported
Facility Telephone:	Not reported
SWAT Facility Name:	BLYTHE AIRPORT DUMP
Primary SIC:	Not reported
Secondary SIC:	Not reported
Comments:	Not reported
Last Facility Editors:	Not reported
Waste Discharge System:	False
Solid Waste Assessment Test Program:	True
Toxic Pits Cleanup Act Program:	False
Resource Conservation Recovery Act:	False
Department of Defence:	False
Solid Waste Assessment Test Program:	AIRPORTS DEPT.
Threat to Water Quality:	Not reported
Sub Chapter 15:	False
Regional Board Project Officer:	AA
Number of WMUDS at Facility:	1
Section Range:	06S22E32
RCRA Facility:	Not reported
Waste Discharge Requirements:	Not reported
Self-Monitoring Rept. Frequency:	Not reported
Waste Discharge System ID:	7B330118011
Solid Waste Information ID:	33-AA-0064

7
WSW
1/2-1
0.531 mi.
2806 ft.

FARMERS AERIAL SVC **ENVIROSTOR** **S109548312**
17500 W HOBSON WAY **HWP** **N/A**
BLYTHE, CA 92225

Relative:
Higher

Actual:
381 ft.

ENVIROSTOR:

Facility ID:	80001759
Status:	* Inactive
Status Date:	01/01/2008
Site Code:	Not reported
Site Type:	Corrective Action
Site Type Detailed:	Corrective Action
Acres:	0
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	* Unknown
Division Branch:	Cleanup Cypress
Assembly:	56
Senate:	Not reported
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not reported
Latitude:	33.60976

FARMERS AERIAL SVC (Continued) **S109548312**

Longitude: -114.7015
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: CAD980889216
Alias Type: EPA Identification Number
Alias Name: 110002675436
Alias Type: EPA (FRS #)
Alias Name: 80001759
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Interim Measures Questionnaire
Completed Date: 07/29/1992
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 05/31/1989
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 08/31/1989
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

HWP:
EPA Id: CAD980889216
Cleanup Status: UNKNOWN
Latitude: 33.60976
Longitude: -114.7015
Facility Type: Historical - Non-Operating
Facility Size: Not reported
Team: Not reported
Supervisor: Not reported
Site Code: Not reported
Assembly District: 56
Senate District: 28
Public Information Officer: Not reported

Count: 0 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/16/2014
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: EPA
Telephone: N/A
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 12/16/2014
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: EPA
Telephone: N/A
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/16/2014
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: EPA
Telephone: N/A
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

Federal CERCLIS list

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 04/02/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Quarterly

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 07/21/2014
Date Data Arrived at EDR: 10/07/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Varies

Federal CERCLIS NFRAP site List

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 11/11/2013
Date Made Active in Reports: 02/13/2014
Number of Days to Update: 94

Source: EPA
Telephone: 703-412-9810
Last EDR Contact: 04/02/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

Federal institutional controls / engineering controls registries

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 09/18/2014
Date Data Arrived at EDR: 09/19/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/26/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 09/18/2014
Date Data Arrived at EDR: 09/19/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/26/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: Varies

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 12/03/2014
Date Data Arrived at EDR: 12/12/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 48

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/16/2015
Next Scheduled EDR Contact: 06/01/2015
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/29/2014
Date Data Arrived at EDR: 09/30/2014
Date Made Active in Reports: 11/06/2014
Number of Days to Update: 37

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Annually

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/12/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 6

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/12/2015
Next Scheduled EDR Contact: 05/18/2015
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/12/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 6

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/12/2015
Next Scheduled EDR Contact: 05/18/2015
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 02/16/2015
Date Data Arrived at EDR: 02/17/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 14

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/17/2015
Next Scheduled EDR Contact: 06/01/2015
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST: Geotracker's Leaking Underground Fuel Tank Report

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. For more information on a particular leaking underground storage tank sites, please contact the appropriate regulatory agency.

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 6

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

SLIC: Statewide SLIC Cases

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 6

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 01/08/2015
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 02/09/2015
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/08/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Quarterly

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 01/28/2015
Date Data Arrived at EDR: 01/30/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 42

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/10/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 31

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 01/30/2015
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 32

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 05/01/2013
Date Made Active in Reports: 11/01/2013
Number of Days to Update: 184

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/30/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 09/30/2014
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 10

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Semi-Annually

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 02/03/2015
Date Data Arrived at EDR: 02/12/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 29

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Quarterly

State and tribal registered storage tank lists

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/26/2015
Number of Days to Update: 8

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 08/01/2009
Date Data Arrived at EDR: 09/10/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 21

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 07/13/2015
Next Scheduled EDR Contact: 04/13/2015
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 02/01/2013
Date Data Arrived at EDR: 05/01/2013
Date Made Active in Reports: 01/27/2014
Number of Days to Update: 271

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/30/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 09/30/2014
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 10

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 01/30/2015
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 36

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 28

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Semi-Annually

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/23/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 65

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 01/29/2015
Date Data Arrived at EDR: 01/30/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 42

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 02/03/2015
Date Data Arrived at EDR: 02/12/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 29

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Quarterly

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 12/14/2014
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/13/2015
Number of Days to Update: 28

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Quarterly

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/13/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 09/29/2014
Date Data Arrived at EDR: 10/01/2014
Date Made Active in Reports: 11/06/2014
Number of Days to Update: 36
Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 04/02/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27
Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/12/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 6
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/12/2015
Next Scheduled EDR Contact: 05/18/2015
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/22/2014
Date Data Arrived at EDR: 12/22/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 38
Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/24/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39
Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137
Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 04/23/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 03/16/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/26/2015
Number of Days to Update: 8
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 04/04/2015
Date Data Arrived at EDR: 04/07/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 6
Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 02/16/2015
Next Scheduled EDR Contact: 06/01/2015
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52
Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 02/02/2015
Next Scheduled EDR Contact: 05/18/2015
Data Release Frequency: Varies

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30
Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 02/09/2015
Next Scheduled EDR Contact: 05/25/2015
Data Release Frequency: No Update Planned

Local Lists of Hazardous waste / Contaminated Sites

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/25/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 15
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/03/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: Quarterly

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21
Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/12/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 6
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/12/2015
Next Scheduled EDR Contact: 05/18/2015
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27
Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 8
Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 04/13/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Varies

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/25/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 15

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 03/03/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: No Update Planned

Local Lists of Registered Storage Tanks

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/23/2009
Date Data Arrived at EDR: 09/23/2009
Date Made Active in Reports: 10/01/2009
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 02/26/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 01/30/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Varies

LIENS: Environmental Liens Listing

A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/13/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 11

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 03/09/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Varies

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 03/09/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 8

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 03/10/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/29/2014
Date Data Arrived at EDR: 12/30/2014
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 69

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Annually

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 01/21/2015
Date Data Arrived at EDR: 01/28/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 29

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 01/28/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing

The Land Disposal program regulates of waste discharge to land for treatment, storage and disposal in waste management units.

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 6

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing

The State Water Resources Control Board and nine Regional Water Quality Control Boards partner with the Department of Defense (DoD) through the Defense and State Memorandum of Agreement (DSMOA) to oversee the investigation and remediation of water quality issues at military facilities.

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 6

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/09/2014
Date Data Arrived at EDR: 12/29/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 02/03/2015
Next Scheduled EDR Contact: 05/18/2015
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 04/14/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 06/06/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 09/18/2014
Number of Days to Update: 8

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 03/13/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 24

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/10/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/27/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 12/30/2014
Date Data Arrived at EDR: 12/31/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 29

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 03/06/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: Semi-Annually

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/31/2013
Date Made Active in Reports: 09/13/2013
Number of Days to Update: 44

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 01/29/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/27/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/10/2015
Next Scheduled EDR Contact: 08/10/2015
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 01/23/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 31

Source: Environmental Protection Agency
Telephone: 202-564-5088
Last EDR Contact: 04/09/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 33

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/17/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 12/29/2014
Date Data Arrived at EDR: 01/08/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 21

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 03/09/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Quarterly

RADINFO: Radiation Information Database

The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 02/27/2015
Date Data Arrived at EDR: 02/27/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 26

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 04/09/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 01/18/2015
Date Data Arrived at EDR: 02/27/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 26

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 03/09/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 02/01/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 02/26/2013
Date Made Active in Reports: 04/19/2013
Number of Days to Update: 52

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/24/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Biennially

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 03/12/2015
Date Data Arrived at EDR: 03/13/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 11

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 03/13/2015
Next Scheduled EDR Contact: 06/01/2015
Data Release Frequency: Quarterly

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 11/19/2014
Date Data Arrived at EDR: 12/15/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 45
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 03/20/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Varies

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/31/2015
Date Made Active in Reports: 04/10/2015
Number of Days to Update: 10
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 03/31/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List
The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 10/21/1993
Date Data Arrived at EDR: 11/01/1993
Date Made Active in Reports: 11/19/1993
Number of Days to Update: 18
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: No Update Planned

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 02/18/2015
Date Data Arrived at EDR: 02/20/2015
Date Made Active in Reports: 03/12/2015
Number of Days to Update: 20
Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 03/09/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Annually

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 01/26/2015
Date Data Arrived at EDR: 01/28/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 29

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 10/15/2014
Date Made Active in Reports: 11/19/2014
Number of Days to Update: 35

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 04/17/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Annually

EMI: Emissions Inventory Data

Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2012
Date Data Arrived at EDR: 03/25/2014
Date Made Active in Reports: 04/28/2014
Number of Days to Update: 34

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 03/27/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Varies

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 12/08/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 34

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 04/14/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Semi-Annually

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 03/07/2011
Date Data Arrived at EDR: 03/09/2011
Date Made Active in Reports: 05/02/2011
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/18/2015
Next Scheduled EDR Contact: 06/01/2015
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 04/14/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: N/A

WDS: Waste Discharge System

Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Quarterly

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 02/13/2015
Next Scheduled EDR Contact: 05/25/2015
Data Release Frequency: Quarterly

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 11/25/2014
Date Data Arrived at EDR: 11/26/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 04/10/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 02/02/2015
Date Data Arrived at EDR: 02/06/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 25

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Varies

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/13/2015
Next Scheduled EDR Contact: 05/25/2015
Data Release Frequency: Varies

PROC: Certified Processors Database

A listing of certified processors.

Date of Government Version: 03/16/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 6

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 02/17/2015
Date Data Arrived at EDR: 02/20/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 11

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/16/2015
Next Scheduled EDR Contact: 06/01/2015
Data Release Frequency: Varies

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 02/09/2015
Next Scheduled EDR Contact: 05/25/2015
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 01/16/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 8

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 03/10/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Varies

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 04/15/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Varies

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 04/13/2015
Date Data Arrived at EDR: 04/15/2015
Date Made Active in Reports: 04/23/2015
Number of Days to Update: 8

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 04/15/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Quarterly

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 02/23/2015
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 7

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/24/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Quarterly

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/16/2014
Date Data Arrived at EDR: 10/31/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 17

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/16/2014
Date Data Arrived at EDR: 10/31/2014
Date Made Active in Reports: 11/17/2014
Number of Days to Update: 17

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Annually

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/09/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/25/2015
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 02/16/2015
Next Scheduled EDR Contact: 06/01/2015
Data Release Frequency: Quarterly

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/13/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 01/30/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A
Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR US Hist Auto Stat: EDR Exclusive Historic Gas Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A
Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR US Hist Cleaners: EDR Exclusive Historic Dry Cleaners
EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A
Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/21/2015
Date Data Arrived at EDR: 01/28/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 29

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 01/21/2015
Date Data Arrived at EDR: 01/28/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 29

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List

Cupa Facility List

Date of Government Version: 03/09/2015
Date Data Arrived at EDR: 03/24/2015
Date Made Active in Reports: 03/31/2015
Number of Days to Update: 7

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Varies

BUTTE COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA Facility Listing
Cupa facility list.

Date of Government Version: 11/20/2014
Date Data Arrived at EDR: 11/24/2014
Date Made Active in Reports: 01/07/2015
Number of Days to Update: 44

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 04/14/2015
Next Scheduled EDR Contact: 04/27/2015
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 03/03/2015
Date Data Arrived at EDR: 03/05/2015
Date Made Active in Reports: 03/10/2015
Number of Days to Update: 5

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 06/11/2014
Date Data Arrived at EDR: 06/13/2014
Date Made Active in Reports: 07/07/2014
Number of Days to Update: 24

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 02/09/2015
Next Scheduled EDR Contact: 05/25/2015
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 02/23/2015
Date Data Arrived at EDR: 02/25/2015
Date Made Active in Reports: 03/04/2015
Number of Days to Update: 7

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 02/02/2015
Next Scheduled EDR Contact: 05/18/2015
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 02/23/2015
Date Data Arrived at EDR: 02/25/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 6

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 02/16/2015
Next Scheduled EDR Contact: 05/18/2015
Data Release Frequency: Varies

EL DORADO COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA Facility List
CUPA facility list.

Date of Government Version: 02/24/2015
Date Data Arrived at EDR: 02/25/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 6

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 02/02/2015
Next Scheduled EDR Contact: 05/18/2015
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 03/31/2015
Date Data Arrived at EDR: 04/15/2015
Date Made Active in Reports: 04/23/2015
Number of Days to Update: 8

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 04/06/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Semi-Annually

HUMBOLDT COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/13/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 11

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 02/10/2015
Date Data Arrived at EDR: 02/12/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 19

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 02/09/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 09/10/2013
Date Data Arrived at EDR: 09/11/2013
Date Made Active in Reports: 10/14/2013
Number of Days to Update: 33

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 07/22/2014
Date Data Arrived at EDR: 11/12/2014
Date Made Active in Reports: 12/19/2014
Number of Days to Update: 37

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 05/25/2015
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/16/2015
Date Made Active in Reports: 04/23/2015
Number of Days to Update: 7

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 04/10/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/20/2015
Date Data Arrived at EDR: 01/21/2015
Date Made Active in Reports: 02/05/2015
Number of Days to Update: 15

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 04/16/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 11/24/2014
Date Data Arrived at EDR: 01/30/2015
Date Made Active in Reports: 03/04/2015
Number of Days to Update: 33

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 04/13/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/19/2015
Date Data Arrived at EDR: 01/20/2015
Date Made Active in Reports: 02/05/2015
Number of Days to Update: 16

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 04/20/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Varies

City of Los Angeles Landfills

Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 03/05/2009
Date Data Arrived at EDR: 03/10/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 29

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 04/15/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Varies

Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/15/2015
Date Data Arrived at EDR: 01/29/2015
Date Made Active in Reports: 03/10/2015
Number of Days to Update: 40

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 04/16/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 03/30/2015
Date Data Arrived at EDR: 04/02/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 11

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 03/06/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 01/29/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 13

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Annually

City of Torrance Underground Storage Tank

Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/08/2015
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/27/2015
Number of Days to Update: 12

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 04/13/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List

A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 03/20/2015
Date Data Arrived at EDR: 03/24/2015
Date Made Active in Reports: 03/31/2015
Number of Days to Update: 7

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 10/08/2014
Date Data Arrived at EDR: 10/22/2014
Date Made Active in Reports: 12/15/2014
Number of Days to Update: 54

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 04/15/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 02/23/2015
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 7

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List
CUPA Facility List

Date of Government Version: 02/27/2015
Date Data Arrived at EDR: 03/06/2015
Date Made Active in Reports: 03/10/2015
Number of Days to Update: 4

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 02/26/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 03/19/2015
Date Data Arrived at EDR: 03/20/2015
Date Made Active in Reports: 03/31/2015
Number of Days to Update: 11

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 12/05/2011
Date Data Arrived at EDR: 12/06/2011
Date Made Active in Reports: 02/07/2012
Number of Days to Update: 63

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/26/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 01/15/2008
Date Data Arrived at EDR: 01/16/2008
Date Made Active in Reports: 02/08/2008
Number of Days to Update: 23

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/26/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 02/12/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 18

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 02/06/2015
Next Scheduled EDR Contact: 05/18/2015
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 02/01/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 18

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/09/2015
Next Scheduled EDR Contact: 05/25/2015
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 02/03/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 18

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/09/2015
Next Scheduled EDR Contact: 05/25/2015
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 02/01/2015
Date Data Arrived at EDR: 02/13/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 13

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/09/2015
Next Scheduled EDR Contact: 05/25/2015
Data Release Frequency: Quarterly

PLACER COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 03/10/2015
Date Data Arrived at EDR: 03/12/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 6
Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 03/09/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Semi-Annually

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 01/28/2015
Date Data Arrived at EDR: 01/29/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 33
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 01/28/2015
Date Data Arrived at EDR: 01/29/2015
Date Made Active in Reports: 02/26/2015
Number of Days to Update: 28
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 02/02/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 04/16/2015
Number of Days to Update: 8
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 02/02/2015
Date Data Arrived at EDR: 04/08/2015
Date Made Active in Reports: 04/16/2015
Number of Days to Update: 8
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/08/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Quarterly

SAN BERNARDINO COUNTY:

Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 03/02/2015
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/10/2015
Number of Days to Update: 7

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 02/09/2015
Next Scheduled EDR Contact: 05/25/2015
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 09/23/2013
Date Data Arrived at EDR: 09/24/2013
Date Made Active in Reports: 10/17/2013
Number of Days to Update: 23

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 03/10/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Quarterly

Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2014
Date Data Arrived at EDR: 11/21/2014
Date Made Active in Reports: 12/29/2014
Number of Days to Update: 38

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Varies

Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 03/09/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 02/09/2015
Next Scheduled EDR Contact: 05/25/2015
Data Release Frequency: Quarterly

Underground Storage Tank Information

Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/29/2010
Date Data Arrived at EDR: 03/10/2011
Date Made Active in Reports: 03/15/2011
Number of Days to Update: 5

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 02/09/2015
Next Scheduled EDR Contact: 05/25/2015
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 03/24/2015
Date Data Arrived at EDR: 03/25/2015
Date Made Active in Reports: 03/31/2015
Number of Days to Update: 6
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 02/23/2015
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 7
Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 04/13/2015
Date Data Arrived at EDR: 04/15/2015
Date Made Active in Reports: 04/23/2015
Number of Days to Update: 8
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/16/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/16/2015
Date Data Arrived at EDR: 03/17/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 7
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/13/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28
Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 02/23/2015
Date Data Arrived at EDR: 02/25/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 6

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 02/26/2015
Next Scheduled EDR Contact: 06/15/2015
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 02/23/2015
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 03/04/2015
Number of Days to Update: 8

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 05/25/2015
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List
CUPA facility listing.

Date of Government Version: 11/24/2014
Date Data Arrived at EDR: 11/25/2014
Date Made Active in Reports: 12/31/2014
Number of Days to Update: 36

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 03/11/2015
Date Data Arrived at EDR: 03/13/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 11

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/19/2015
Date Made Active in Reports: 03/24/2015
Number of Days to Update: 5
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/13/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 03/13/2015
Date Data Arrived at EDR: 03/20/2015
Date Made Active in Reports: 03/31/2015
Number of Days to Update: 11
Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/13/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 03/31/2015
Date Data Arrived at EDR: 04/02/2015
Date Made Active in Reports: 04/10/2015
Number of Days to Update: 8
Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 04/01/2015
Date Data Arrived at EDR: 04/02/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 11
Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 03/30/2015
Next Scheduled EDR Contact: 07/13/2015
Data Release Frequency: Quarterly

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 03/09/2015
Date Data Arrived at EDR: 03/10/2015
Date Made Active in Reports: 03/18/2015
Number of Days to Update: 8
Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 03/09/2015
Next Scheduled EDR Contact: 06/22/2015
Data Release Frequency: Semi-Annually

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/30/2015
Date Data Arrived at EDR: 02/03/2015
Date Made Active in Reports: 02/27/2015
Number of Days to Update: 24
Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Varies

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks

The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 01/27/2015
Date Data Arrived at EDR: 02/19/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 12

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/16/2015
Next Scheduled EDR Contact: 06/01/2015
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites

Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/02/2015
Next Scheduled EDR Contact: 07/20/2015
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites

Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/16/2015
Next Scheduled EDR Contact: 06/01/2015
Data Release Frequency: Quarterly

Medical Waste Program List

To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 12/29/2014
Date Data Arrived at EDR: 01/30/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 32

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/26/2015
Next Scheduled EDR Contact: 05/11/2015
Data Release Frequency: Quarterly

Underground Tank Closed Sites List

Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 02/27/2015
Date Data Arrived at EDR: 03/18/2015
Date Made Active in Reports: 03/26/2015
Number of Days to Update: 8

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/18/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report

Underground storage tank sites located in Yolo county.

Date of Government Version: 03/26/2015
Date Data Arrived at EDR: 04/01/2015
Date Made Active in Reports: 04/13/2015
Number of Days to Update: 12

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 03/23/2015
Next Scheduled EDR Contact: 07/06/2015
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 02/17/2015
Date Data Arrived at EDR: 02/19/2015
Date Made Active in Reports: 03/03/2015
Number of Days to Update: 12

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 02/16/2015
Next Scheduled EDR Contact: 05/18/2015
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 11/17/2014
Next Scheduled EDR Contact: 03/02/2015
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2011
Date Data Arrived at EDR: 07/19/2012
Date Made Active in Reports: 08/28/2012
Number of Days to Update: 40

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/14/2015
Next Scheduled EDR Contact: 07/27/2015
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2015
Date Data Arrived at EDR: 02/04/2015
Date Made Active in Reports: 02/27/2015
Number of Days to Update: 23

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 02/04/2015
Next Scheduled EDR Contact: 05/18/2015
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/21/2014
Date Made Active in Reports: 08/25/2014
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/16/2015
Next Scheduled EDR Contact: 08/03/2015
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 07/15/2014
Date Made Active in Reports: 08/13/2014
Number of Days to Update: 29

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/23/2015
Next Scheduled EDR Contact: 06/08/2015
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 03/19/2015
Date Made Active in Reports: 04/07/2015
Number of Days to Update: 19

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/13/2015
Next Scheduled EDR Contact: 06/29/2015
Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 2003 & 2011 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

Scanned Digital USGS 7.5' Topographic Map (DRG)
Source: United States Geologic Survey
A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STREET AND ADDRESS INFORMATION

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Appendix D

Qualifications of Environmental Professional

Jim K. Fickerson

Program Manager

Years Experience: **20**

Technical Specialties

- Project Management
- Environmental Due Diligence
- Environmental Liability Cost Analysis

Professional History

- AECOM
- Texaco Refining and Marketing, Inc.
- City of Saratoga

Education

- BS (Environmental Studies) San Jose State University

Summary

Mr. Fickerson has nearly 20 years of diverse experience directing large-scale, multidisciplinary environmental management programs for commercial and industrial clients globally. He is particularly experienced managing multi-site environmental due diligence assessments of aerospace, chemical, oil and gas, and other complex industrial/manufacturing facilities under considerable logistical and scheduling constraints. Over the course of his career, Mr. Fickerson has managed numerous technically challenging soil, groundwater, and soil vapor assessments, remediation projects, and obtained regulatory site closure of industrial sites. In addition, Mr. Fickerson has specialized experience managing the compliance monitoring associated with the construction of large-scale renewable energy projects.

For nearly 10 years, Mr. Fickerson has been a proactive leader in AECOM's global environmental due diligence (EDD) practice where he has played a critical role in the development of AECOM internal online EDD training program and various risk management policies. Mr. Fickerson's leads AECOM's global EDD practice.

Representative Project Experience

Confidential Client, Environmental Due Diligence and Liability Analysis, Nine Chemical Plants, Europe & United States. Mr. Fickerson was the lead technical reviewer for the environmental due diligence and liability analysis of seven large (~150 acre) chemical manufacturing plants located throughout Europe and the United States. The majority of the sites had been in heavy and complex industrial use for over 100 years which resulted in numerous chemical releases to the subsurface. Mr. Fickerson and his international team rapidly reviewed a considerable volume of previous reports in an electronic data room to identify the most critical and salient data for each site. The results of this data review were summarized in site-specific summary reports. In addition, the data obtained was used to calculate each sites potential environmental liability which for this project was estimated to exceed $250,000,000.

Confidential Client, Environmental Due Diligence, Czech Republic, China, Denmark, India, and United States. Mr. Fickerson was the project manager and senior technical reviewer for the environmental due diligence of six heavy manufacturing facilities located on three continents and operating in four time zones. This project involved the performance of Phase I ESAs to the ASTM-13 standard (to the extent practical outside the United States) as well as material compliance evaluations. This work was performed under an expedited schedule that was designed to allow the client to rapidly divest these assets.

Confidential Manufacturing Client, Environmental Due Diligence, Asia, Canada, and United States. Mr. Fickerson was the project manager for Phase I ESA and subsurface assessment of several heavy manufacturing facilities. This project involved the performance of Phase I ESAs and subsurface Phase II ESAs under a very aggressive schedule and which allowed the client to rapidly divest these assets.

Hydrogen Energy California, Environmental Due Diligence, Kern County, California. Mr. Fickerson was the project manager for a Phase II ESA of this 1,000 acre proposed alternative energy plant site. This Phase II ESA was conducted to evaluate over 14 recognized environmental conditions including underground storage tanks, a former fertilizer plant, unknown underground structures, and over 40 years of heavy agricultural use. The results of the Phase II ESA were documented in comprehensive technical report and submitted to the Department of Toxic Substance Control.

Latham and Watkins & Academy of Motion Pictures and Sciences, Environmental Due Diligence, Hollywood, California. Project manager for the environmental due diligence of one city block located in Hollywood, California. Activities conducted included reconnaissance of the site and surrounding neighborhood; a review of various historical resources; an analysis of a regulatory database report, review of local and state regulatory agency files, and researching the physical characteristics of the site. RECs that were identified included current and former underground storage tanks, dry cleaners, and the historical use of chlorinated solvents. These environmental concerns were further evaluated by the implementation of a comprehensive subsurface investigation program including the collection and laboratory analysis of soil, soil vapor, and indoor air samples. Over 10 technical environmental reports were prepared summarizing the results of the numerous investigations. The project team is currently providing the client with technical guidance regarding vapor intrusion mitigation/ remediation, environmental liability cost analysis/budgeting for future site redevelopment, and assistance with CEQA permitting.

PS Business Park, Northern California, Industrial Portfolio, Northern California. Mr. Fickerson was the project manager for the environmental due diligence of over 5.3 million square feet of light industrial, flex, and warehouse type properties located throughout the Bay Area of Northern California. Tasks performed under this program including 26 Phase I ESAs, several subsurface investigations and several environmental compliance reviews.

Public Storage, A-American Self-Storage, Environmental Due Diligence, Western United States. Mr. Fickerson was the project manager for the environmental due diligence of 75 commercial properties located throughout California, Hawaii, Illinois, and Nevada. For this project, Mr. Fickerson developed an environmental management database to manage the workflow and report production. This innovative database approach has since been replicated on numerous large-scale portfolios by AECOM thereby allowing colleagues worldwide to seamlessly collaborate on multi-site due diligence portfolios.

Public Storage, Environmental Due Diligence, Multi-Site Portfolio, North and South Carolina. Managed the environmental site screening of 47 self-storage properties located throughout North and South Carolina. The project involved sites visits; historical research; regulatory agency and environmental database review; interviews with facility personal; a review of previously prepared environmental reports; preparation of site-specific summary reports; and a preparation of a comprehensive cost analysis to quantify the environmental liabilities associated with the transaction. This challenging project was completed within a tight two week timeframe.

Public Storage, Environmental Due Diligence, Multi-Site Portfolio, Minnesota and Wisconsin. Project manager for the environmental due diligence for a 27 site portfolio of commercial property located throughout Minnesota and Wisconsin. The project involved the performing Phase I ESAs; asbestos surveys, subsurface investigations; preparation of a comprehensive environmental liability cost estimate; and negotiations with Minnesota Pollution Control Agency to obtain letters of "No Association Determination" for four of the 27 sites.

NextEra Energy Resources, LLC, Environmental Due Diligence, Fremont Valley, California. Task manager and senior environmental assessor for the environmental due diligence of a proposed parabolic solar plant located in the Fremont Valley, near California City, California. This site consisted of nearly 3,000 acres of desert, 17.6 mile transmission line, and the former Fremont Valley Ranch. These assessments have involved site and area reconnaissance; review of various historical resources; analysis of regulatory database reports, reviews of local and state regulatory agency files, researching the physical characteristics of the sites, and preparation of half a dozen reports. More recently, Mr. Fickerson coordinated the restoration of this site including the removal of two underground storage tanks (USTs), abatement of asbestos and lead-based paint, demolition of nine former residential and ranching buildings, and the cleanup and removal of various onsite debris and hazardous materials.

TA Realty, Limited Phase II Environmental Site Assessment, Carson, California. Technical lead and task manager for the design of a comprehensive soil and soil vapor program to evaluate over 50 years of longer term industrial use including circuit board manufacturing, foam manufacturing, petroleum exploration and production, metal plating, vehicle repair, and extensive use and storage of a wide variety of hazardous materials of this 10 acre industrial property located in Carson, California.

Latham and Watkins and Del Mar Industries, Site Characterization and Remediation Support, Gardena, California. Project manager for the characterization and sealing of PCB-impacted concrete at die casting facility located in Gardena, California. The characterization involved the collection of four concrete cores and 66 wipe samples. The result of the testing indicating that approximately 17,600 square-feet of PCB-impacted concrete was present at the site. The surface of the impacted-concrete was cleaned and sealed with two layers of epoxy coating in general accordance with U.S. EPA cleanup and sealing guidance. At the conclusion of the project, a hazardous materials management plan was prepared in anticipation of the client selling and/or leasing the business to another entity.

The Amargosa Conservancy, Environmental Due Diligence, Death Valley Junction, California. Project manager for the environmental due diligence of the historic mining town of Death Valley Junction, California. The assessments involved site and area reconnaissance of 246 acres; a review of over 100 years of historical documents; an analysis of a regulatory database report, review of local and state regulatory agency files; researching the physical characteristics of the site; collection and laboratory analysis of soil and groundwater samples; and preparation of two technical reports.

Air Liquide, Environmental Due Diligence, San Bernardino, California. Project manager and senior environmental assessor of the environmental due diligence associated with the acquisition of a former gasoline fuel blending facility located on 14 acres in San Bernardino, California. Mr. Fickerson designed and implemented a comprehensive soil boring and geophysical survey program to fully evaluate over 30 RECs that were identified. At the conclusion of the project, a budgetary cost estimate that quantified the environmental liabilities associated with the transaction was prepared.

P.S. Business Parks, Environmental Due Diligence, Three Former Oil Field Sites, Signal Hill, California. Project manager of the environmental due diligence associated with three industrial properties located in Signal Hill, California. RECs identified at the sites included former oil sumps, waste disposal areas, and petroleum production facilities. The environmental concerns associated with each site were further evaluated by the implementation of a comprehensive subsurface soil boring and geophysical program. Identified environmental liabilities were further analyzed and a budgetary cost estimate was

prepared to assist the client in their purchase of the sites. The entire project was completed under budget and within the tight time constraints of a real estate transaction.

Nature Conservancy, Environmental Due Diligence, Tecopa, California. Managed the environmental due diligence of a former worker camp and precious metals mine in Tecopa, California. RECs identified at the site were further evaluated by the implementation of a comprehensive trenching program. Total metals including cyanide, mercury, lead, and copper were identified in soil at concentrations that exceed hazardous waste criteria. Potential remedial scenarios were evaluated, a preliminary risk assessment was performed, and discussions with the client's legal counsel were conducted. The project team decided that the elevated metals concentrations could be managed in place, thus avoiding costly (in excess of $1M) remediation, and allowing a conservation easement to be placed on this ecologically sensitive property.

PS Business Parks, Environmental Due Diligence, San Ana, California. Performed a Phase I ESA and managed a subsurface assessment of a business park containing 437,000 square-feet of commercial office/warehouse space on 25 acres in Santa Ana, California. An extensive historical review indicated that the site was formerly occupied by a sugar beet processing plant. The identified RECs were further evaluated by the implementation of a comprehensive soil boring program. Mr. Fickerson prepared a budget cost estimate and assisted the client in obtaining environmental insurance allowing the client to proceed with the purchase of property.

Northrop/Vought Aircraft Corporation, Comprehensive Soil and Groundwater Assessment, Hawthorne, California. Deputy Project Manager for a comprehensive fence-line to fence-line soil assessment of an 80-acre aerospace manufacturing facility. The assessment involved the drilling and sampling of over 200 soil borings to assess the extent of soil impacted by halogenated solvents, petroleum hydrocarbons, and metals.

Shamrock Logistics GP, LLC, Liability Analysis, Multiple Sites, Southern California. Project manager and primary assessor responsible for the technical environmental liability cost evaluation of groundwater impacts associated with the acquisition of 14 tank farms, heating stations, and over 33 miles of connecting pipelines located throughout Southern California.

Sempra Generation, Environmental Due Diligence, Maui, Hawaii. Managed and performed a Phase I ESA of a proposed wind farm located on the eastern portion of Ulupalakua Ranch, Maui, Hawaii. This large site consisted of over 5,200 acres of rugged ranch land. The assessment involved a site and area reconnaissance; a review of various historical resources; an analysis of a regulatory database report, review of local and state regulatory agency files, researching the physical characteristics of the site, and preparation of a comprehensive report.

The Valspar Corporation, Environmental Due Diligence, Commerce, California. Performed a Phase I ESA of an approximately 170,000 square-foot chemical manufacturing plant located in Commerce, California at the request of the Regional Water Quality Control Board. The assessment involved a site and area reconnaissance; a review of various historical resources; an analysis of a regulatory database report, review of local and state regulatory agency files, researching the physical characteristics of the site, and preparation of a report. Over 10 recognized environmental conditions were identified which lead to the development of a comprehensive subsurface soil and groundwater assessment program under the regulatory oversight of the RWQCB.

Confidential Client, Phase I Environmental Site Assessment, Senora, Mexico. Managed the environmental due diligence of a gold mine located near the town of Montezuma, in Sonora, Mexico. Located on a 1,070 acre cattle ranch, this assessment involved a review of over 160 years of historical, geologic, and mining related documents; interviews with property owner and mining personnel; researching the physical characteristics of the site; and preparation of a comprehensive report.

The Jordan Company, Environmental Due Diligence, Tijuana, Mexico. Senior assessor for a Phase I ESA of a 300,000 square-foot metal polishing facility in Tijuana, Baja California, Mexico. This project involved a site visit; interviews with the buildings tenants; historical, regulatory, and preparation of a comprehensive report. Over 10 RECs were identified and their liability was estimated to assist the client in the divesture of the property.

Appendix 3.11A
Thermal Plume Analysis

July 2, 2015

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Memo to: Chris Doyle, AltaGas Sonoran Energy Inc.

From: Gary Rubenstein and Nancy Matthews

Subject: Thermal Plume Analysis for the Proposed Sonoran Energy Project

AltaGas Sonoran Energy Inc. is proposing to construct and operate a nominal 520 MW combined cycle power plant on a 30-acre site immediately west of the existing Blythe Energy Project (BEP) in Blythe, CA. The proposed Sonoran Energy Project (SEP) would replace the Blythe Energy Project II (Blythe II) that has been approved by the California Energy Commission (CEC) and the Mojave Desert Air Quality Management District for construction at the site. The purpose of this memo is to evaluate the potential impacts of thermal plumes from the gas turbine/heat recovery steam generator (HRSG) and cooling tower at the proposed SEP on aircraft operations at the nearby Blythe Airport.

Background

The Blythe Airport is a public airport located six miles west of the city of Blythe and approximately one mile west of the proposed SEP. During the first fourteen months of BEP operation (June 2003 through August 2004) complaints regarding turbulence and vertical shear were received from area pilots due to the thermal plumes from the exhaust stacks at BEP. An investigation regarding these complaints was conducted by the CEC, and in October 2004 a public workshop was held to develop safety measures to address the potential impact on aviation safety due to the thermal plumes at BEP. The workshop resulted in an agreement to add an advisory to the existing Automated Surface Observing System (ASOS) owned and operated by the Federal Aviation Administration (FAA) that would warn pilots of the potential hazard of the thermal plumes, and direct pilots to avoid overflight of the power plant.

In July 2005, an additional meeting was held between the CEC, the City of Blythe, and all interested agencies, and resulted in additional mitigation measures requiring a Notice to Airmen be published in the Los Angeles and Phoenix section aeronautical charts. In addition, the Project Owner agreed to the purchase, installation, and maintenance of a Super Automated Weather Observing System (Super AWOS) to ensure that appropriate

advisories regarding the power plant would be broadcast to pilots. All of these mitigation measures are currently in place. [1,2]

Environmental Impacts

The proposed replacement of Blythe II with SEP would significantly change the plant layout as well as the gas turbine and cooling tower exhaust plume characteristics that were evaluated in the previous CEC licensing proceeding. As part of this evaluation, a thermal plume velocity analysis based on the new exhaust characteristics was conducted.

CEC staff currently uses a 4.3 meters per second (m/s) vertical velocity threshold for determining whether a plume may pose a hazard to aircraft. This threshold was established based on staff's review of a safety circular prepared by the Australian Government Civil Aviation Safety Authority in 2004 and updated in 2012,[3] which cites the need to "assess the potential hazard to aviation posed by vertical exhaust plumes in excess of 4.3 meters per second (m/s) velocity." The FAA performed its own safety risk analysis of thermal plumes in 2006, and concluded that while "[t]he FAA does not necessarily approve/disapprove or warrant the data contained in the CASA AC 139-05…[the FAA] accepts the information and data contained in AC 139-05 as a valid representation of hazardous exhaust velocities."[4]

Following staff's current plume velocity analysis procedure,[5] the Spillane Approach has been used to estimate worst-case plume vertical velocities for the proposed SEP. The detailed analysis is provided as Appendix A and summarized in Table 1 below.

As shown in Table 1, the analysis indicates that the maximum plume velocities occur during cold temperature operation (39°F). Under these cold ambient conditions, the average vertical velocity for the gas turbine exhaust plume would exceed the critical velocity of 4.3 meters per second (m/s) at elevations up to 660 feet above stack top (800 feet above the ground).[6]

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[1] The July 2005 meeting was held well after the BEP license was issued; it was held, in part, as a result of the proposed Blythe II project. Although the mitigation measure was implemented through the Blythe II conditions of certification, the Super AWOS was installed and began operating to provide warning to avoid overflight of BEP.

[2] For example, the VFR chart includes notations such as "power plant" and "avoid direct overflight of power plant." See, for example, *https://skyvector.com/?ll=33.619166667,-114.716888889&chart=301&zoom=3*. There is also a remark on the Blythe Airport (BLH) Airnav.com page stating, "POWER PLANT 1 MILE EAST OF ARPT PRODUCING THERMAL PLUMES; AVOID LOW ALTITUDE DIRECT OVERFLIGHT OF THE POWER PLANT." See *www.airnav.com/airport/KBLH.*

[3] CASA Advisory Circular AC 139-5(1), "Plume Rise Assessments," November 2012; available at *http://www.casa.gov.au/wcmswr/_assets/main/rules/1998casr/139/139c05.pdf*

[4] Federal Aviation Administration, "Safety Risk Analysis of Aircraft Overflight of Industrial Exhaust Plumes," DOT-FAA-AFS-420-06-1, January 2006. Available at *www.ctcombustion.com/oxc/sources/20-safetyriskanalysis.pdf.*

[5] See, for example, Appendix TT-1 to the Final Staff Assessment for the Pio Pico Energy Center, May 2012.

[6] Gas turbine stack is 140 feet tall; top of cooling tower cones is 42 feet above grade.

The analysis also indicates that the average vertical velocity for the combined cooling tower plumes[7] is conservatively predicted to exceed the critical velocity of 4.3 m/s at elevations up to 1,046 feet above stack top (1,088 feet above the ground) under these worst-case (cold ambient) conditions. This prediction is conservative because it is based on worst-case exhaust velocities and exhaust temperature of the cooling tower. Under these cold temperature conditions the cooling tower plumes would be expected to be visible to pilots. The visibility of the plumes would make pilots aware of the potential for thermal plumes and would allow them to avoid overflight. Therefore, in the unlikely event that the cooling tower operates in this manner under these conditions, the presence of the cooling tower plumes is not expected to pose a threat to aviation.

Table 1 also shows maximum plume velocities under average temperature conditions (74°F). Under these ambient conditions, the gas turbine exhaust plume would be less than 4.3 m/s at elevations above 535 feet above stack top (675 feet above the ground). Under average ambient conditions, the elevation at which the average vertical velocity of the combined cooling tower plumes is predicted to fall below 4.3 m/s is significantly lower than under cold temperature conditions: approximately 444 feet above stack top (486 feet above the ground).

Table 1
Maximum Height Above Stack Top at which Exhaust Plume Velocity is Predicted to Exceed 4.3 m/s

Ambient Condition	Gas Turbine Exhaust Plume Height (ft)	Combined Cooling Tower Plume Height (ft)
Cold Temperature	660	1,046
Average Temperature	535	444

During the original licensing proceeding for BEP II, the Spillane approach was not used to calculate plume velocities. Instead, the CEC staff estimated plume velocities from engineering analyses using SCREEN3, SACTI, and CSVP models.[8] Using these models, staff estimated that the average velocity of the thermal plumes generated by the cooling tower would "likely be greater than 4.3 meters per second" at elevations exceeding 500 feet above the ground, and that the average plume velocity would be 8.5 m/s or more at 250 feet above the ground. In contrast, the SEP analysis indicates that at an elevation of 250 feet above the ground, the cooling tower plumes will not have merged and that the velocities of the individual plumes will barely exceed 4.3 m/s, well below the plume velocity expected for the original BEP II design. Further, under average ambient conditions, the average velocity of the combined cooling tower plumes will be below 4.3 m/s at elevations exceeding 500 feet above the ground.

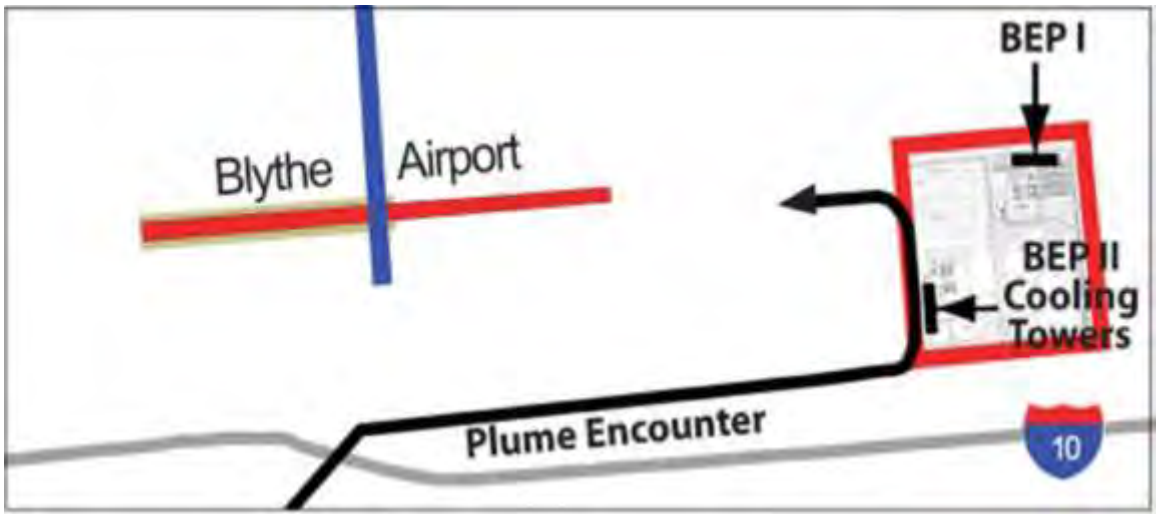
For the BEP II HRSGs, the CEC staff estimated that the average plume velocity would be approximately 10 m/s at 250 feet above the ground. The Spillane methodology cannot be

[7] This represents the combined impact of all of the SEP cooling tower cells.
[8] CEC, Final Staff Assessment for the Blythe Energy Project Phase II (11-AFC-01), April 2005, p. 4.10-17.

used to directly compare the SEP plume velocity at this elevation because 250 feet is below the minimum stack height at which the calculation is valid.[9] However, the current analysis for the SEP shows that the HRSG plume velocity will be below 10 m/s at an elevation of 300 feet above ground level, so these results are consistent with the original staff analysis.

For the BEP II project, the CEC staff concluded that the cooling tower was a greater concern than the gas turbine/HRSG for generating thermal turbulence that could potentially be hazardous to flight operations. The design of BEP II placed the cooling towers at the western edge of the facility, in the left-downwind or left-base flight pattern for aircraft landing on runway 26 (see Figure 1 below).[10] In the Final Decision, the Commission identified a potential flight risk to inexperienced pilots landing on runway 26 when their flight path takes them along the cooling tower axis.[11] In contrast, the SEP design places the cooling tower farther east, away from the property boundary and east of the proposed substation. In this proposed new location, planes are far less likely to be flying along the cooling tower axis, and are therefore much less likely to experience any thermal turbulence from cooling tower operation.

Figure 1
Cooling Tower Locations for the Licensed BEP II



[9] The minimum height above stack top that the Spillane plume velocity calculation is valid is the virtual source height, which is 6.25 times the stack diameter. For SEP, this minimum height is 6.25 * 22 feet = 137.5 feet above stack top. Therefore, the Spillane methodology cannot be used to evaluate plume velocities at elevations below 137.5 feet + 140 feet = 277.5 feet.
[10] CEC, Commission Final Decision for the Blythe Energy Project Phase II (02-AFC-1), December 2005; unnumbered figure, p. 184.
[11] See footnote 11, pp. 183-190.

Mitigation

No significant impacts beyond those previously addressed for the Blythe II would result from the replacement of Blythe II with the proposed SEP. We believe that the combination of existing mitigation measures already implemented (as described above) and the proposed change in location of the cooling tower should provide adequate mitigation, and that additional mitigation measures beyond those already implemented are not necessary.

Appendix A
Plume Velocity Analysis

Introduction and Methodology

This appendix describes the equations and methodology used to evaluate the potential for thermal plumes from the gas turbine and cooling tower at SEP. The evaluation used the CEC staff's calculation approach, called the "Spillane approach" and presented in a 2003 paper by Best et al to calculate worst-case plume vertical velocities.[1] Under calm wind conditions, the Spillane equation reduces to:

$$(V*a)^3 = (V*a)_o^3 + 0.12*F_o*[(z-z_v)^2-(6.25D-z_v)^2]$$

Where:

V = plume-averaged vertical velocity (m/s)
a = plume top-hat radius (m)
F_o= initial stack buoyancy flux (m^4/s^3)
z = height above ground (m)
z_v= virtual source height (m)
V_{exit}= initial stack velocity (m/s)
D = stack diameter (m)
T_a= ambient temperature (K)
T_s= stack temperature (K)
g = acceleration of gravity (9.8 m/s^2)

and

$$(V*a)_o = V_{exit}*D/2*(T_a/T_s)^{0.5}$$

$$F_o = g*V_{exit}*D^2*(1-T_a/T_s)/4$$

$$z_v = 6.25D*[1-(T_a/T_s)^{0.5}]$$

$$a = 0.16*(z- z_v)$$

This equation can be solved for V at any elevation z that is greater than the virtual source height z_v by making the appropriate substitutions into the following formulation:

$$V = [(V*a)_o^3 + 0.12*F_o*[(z-z_v)^2-(6.25D-z_v)^2]]^{1/3} \div a$$

[1] Best et al, "Aviation Safety and Buoyant Plumes." Presented at the 2003 Clean Air Conference, Newcastle, New South Wales, Australia. By Peter Best, Christine Killip, Lena Jackson, and Mark Kanowski of Katestone Environmental, Toowong, Queensland, Australia, and Kevin Spillane of Bendigo, Victoria, Australia.

The equation can also be solved to obtain the value of z (elevation above ground) at which V = 4.3 m/s, using a cubic equation solver.[2]

For multiple plumes, Best et al present a simplified calculation method for calm wind conditions:

$$V_m = V_{sp} * N^{0.25}$$

Where:

V_m = multiple stack combined plume vertical velocity (m/s)
V_{sp} = single plume vertical velocity (m/s), calculated using the equation above
N = number of stacks

In the Pio Pico FSA, CEC staff noted that this simplified calculation method produces lower velocities than the full Spillane approach methodology, but stated that this approach will likely overpredict combined plume velocities on long linear cooling towers.[3]

Calculations: Gas Turbine/HRSG

Thermal plume velocities were calculated for 6 gas turbine operating cases, including hot, average, and cold ambient temperatures, using the single plume equations above. The values for the parameters used in the calculations of plume velocity at various elevations above stack top are shown in Table A-1 below. A cubic equation solver was also used to determine the critical elevation z at which the velocity under each condition would equal 4.3 m/s.

Table A-1
Gas Turbine Stack Parameters for Thermal Plume Velocity Calculations

	Ambient Condition and Turbine Load					
	Hot Peak	Hot Low	Average Peak	Average Low	Cold Peak	Cold Low
Ambient Temperature (F)	110	110	74	74	39	39
Ambient Temperature (K)	316.483	316.483	296.483	296.483	277.039	277.039
Stack Height (m)	42.672	42.672	42.672	42.672	42.672	42.672
Stack Diameter (m)	6.7056	6.7056	6.7056	6.7056	6.7056	6.7056
Stack Velocity (m/s)	22.50	15.47	21.64	13.32	22.19	13.00
Exhaust Temperature (K)	352.98	347.00	348.61	340.57	346.08	338.63

The detailed results of the analysis for the gas turbine/HRSG stack are provided below.

[2] Available at *http://akiti.ca/Quad3Deg.html*.
[3] CEC, Final Staff Assessment for the Pio Pico Energy Center (11-AFC-01), May 2012, p. 4.10-37.

Calculations: Cooling Tower

Combined thermal plume velocities were calculated for the new cooling tower using the multiple plume calculation procedure described above. The cooling tower operational parameters that were used in the thermal plume velocity calculations are summarized in Table A-2, and the detailed results of the analysis are provided below.

Table A-2
Cooling Tower Stack Parameters for Thermal Plume Velocity Calculations

Stack Parameters	Ambient Condition	
	Cold Ambient	Average Ambient
Ambient Temperature (F)	39	74
Ambient Temperature (K)	277.039	296.483
Stack Height (m)	12.754	12.754
Stack Diameter (m)	8.534	8.534
Stack Velocity (m/s)	11.21	11.21
Exhaust Temperature (K)	299.261	299.261
Distance Between Stacks (m)	14.61	14.61
Number of Stacks	10	10

Sonoran Energy Project
Predicted Calm Wind Plume Velocities - Gas Turbine

Inputs	Gas Turbine					
	Hot Peak no DF Case 2	Hot Low Case 3	Average Peak no DF Case 5	Average Low Case 6	Cold Peak no DF Case 10	Cold Low Case 11
Plume height at critical CASC vertical velocity of 4.3 m/s (calculated by solving cubic equation)						
Height above ground (ft)	615	442	675	430	**800**	484
Height above stacktop (ft)	475	302	535	290	**660**	344

	Gas Turbine							
			Plume Velocity, m/s					
Ht above AGL (ft)	Height above stacktop (m)	Height above stacktop (ft)	Hot Peak no DF	Hot Low	Average Peak no DF	Average Low	Cold Peak no DF	Cold Low
200	18.3	60	N/A	N/A	N/A	N/A	N/A	N/A
300	48.8	160	9.75	6.79	9.43	5.99	9.72	5.99
400	79.2	260	6.43	4.73	6.45	4.54	6.80	4.80
500	109.7	360	5.09	3.89	5.26	3.90	5.65	4.23
600	140.2	460	4.38	3.43	4.62	3.53	5.01	3.86
700	170.7	560	3.93	3.13	4.21	3.27	4.60	3.60
800	201.2	660	3.62	2.92	3.92	3.08	4.30	3.40
900	231.6	760	3.39	2.76	3.70	2.93	4.07	3.24
1,100	292.6	960	3.07	2.52	3.38	2.70	3.73	2.99
1,200	323.1	1,060	2.95	2.43	3.25	2.60	3.59	2.89
1,300	353.6	1,160	2.85	2.35	3.15	2.52	3.48	2.80
1,400	384.0	1,260	2.76	2.28	3.05	2.45	3.38	2.72
1,500	414.5	1,360	2.68	2.22	2.97	2.39	3.29	2.65
1,600	445.0	1,460	2.61	2.17	2.90	2.33	3.21	2.59
1,700	475.5	1,560	2.55	2.12	2.83	2.28	3.14	2.53
1,800	506.0	1,660	2.49	2.07	2.77	2.23	3.07	2.48
1,850	521.2	1,710	2.47	2.05	2.74	2.21	3.04	2.45
1,900	536.4	1,760	2.44	2.03	2.71	2.19	3.01	2.43
2,000	566.9	1,860	2.39	1.99	2.66	2.15	2.95	2.39
2,100	597.4	1,960	2.35	1.96	2.61	2.11	2.90	2.34
2,200	627.9	2,060	2.31	1.92	2.57	2.08	2.85	2.31
2,300	658.4	2,160	2.27	1.89	2.53	2.04	2.80	2.27
2,400	688.8	2,260	2.24	1.86	2.49	2.01	2.76	2.23
2,450	704.1	2,310	2.22	1.85	2.47	2.00	2.74	2.22
2,500	719.3	2,360	2.20	1.84	2.45	1.98	2.72	2.20
2,550	734.6	2,410	2.19	1.82	2.43	1.97	2.70	2.19
2,600	749.8	2,460	2.17	1.81	2.42	1.95	2.68	2.17
2,700	780.3	2,560	2.14	1.79	2.38	1.93	2.65	2.14
2,800	810.8	2,660	2.11	1.76	2.35	1.90	2.61	2.12

Sonoran Energy Project
Predicted Calm Wind Plume Velocities - Cooling Tower

	Ambient Condition	
Ambient Temperature (F)	39	74
Plume height at critical CASC vertical velocity of 4.3 m/s (calculated by solving cubic equation)		
Individual Plumes		
Height above ground (ft)	309	273
Height above stacktop (ft)	267	231
Combined Plumes		
Height above ground (ft)	1088	485
Height above stacktop (ft)	1046	444

Ht above AGL (ft)	Individual Plumes			
	Height above stacktop (m)	Height above stacktop (ft)	Plume Velocity, m/s	
100	17.7	58	N/A	N/A
200	48.2	158	N/A	N/A
300	78.7	258	4.38	3.88
400	109.2	358	3.70	2.89
500	139.6	458	3.31	2.36
600	170.1	558	3.05	2.02
700	200.6	658	2.86	1.80
800	231.1	758	2.72	1.64
900	261.6	858	2.60	1.51
1,100	322.5	1,058	2.41	1.34
1,200	353.0	1,158	2.33	1.28
1,300	383.5	1,258	2.27	1.23
1,400	414.0	1,358	2.21	1.19
1,500	444.4	1,458	2.15	1.15
1,600	474.9	1,558	2.10	1.11
1,700	505.4	1,658	2.06	1.08
1,800	535.9	1,758	2.02	1.06
1,850	551.1	1,808	2.00	1.04
1,900	566.4	1,858	1.98	1.03
2,000	596.8	1,958	1.95	1.01
2,100	627.3	2,058	1.91	0.99
2,200	657.8	2,158	1.88	0.97
2,300	688.3	2,258	1.85	0.95
2,400	718.8	2,358	1.83	0.94
2,450	734.0	2,408	1.81	0.93
2,500	749.2	2,458	1.80	0.92
2,550	764.5	2,508	1.79	0.92
2,600	779.7	2,558	1.78	0.91
2,700	810.2	2,658	1.76	0.90
2,800	840.7	2,758	1.73	0.88

Ht above AGL (ft)	Plume Top-hat Radius (m)			
	Height above stacktop (m)	Height above stacktop (ft)	Ambient Condition, deg F	
			39	74
100	17.7	58	2.51	2.80
200	48.2	158	7.39	7.67
300	78.7	258	12.27	12.55
400	109.2	358	17.14	17.43
500	139.6	458	22.02	22.30
600	170.1	558	26.90	27.18
700	200.6	658	31.77	32.06
800	231.1	758	36.65	36.93
900	261.6	858	41.53	41.81
1,100	322.5	1,058	51.28	51.56
1,200	353.0	1,158	56.16	56.44
1,300	383.5	1,258	61.03	61.32
1,400	414.0	1,358	65.91	66.19
1,500	444.4	1,458	70.79	71.07
1,600	474.9	1,558	75.67	75.95
1,700	505.4	1,658	80.54	80.83
1,800	535.9	1,758	85.42	85.70
1,850	551.1	1,808	87.86	88.14
1,900	566.4	1,858	90.30	90.58
2,000	596.8	1,958	95.17	95.46
2,100	627.3	2,058	100.05	100.33
2,200	657.8	2,158	104.93	105.21
2,300	688.3	2,258	109.80	110.09
2,400	718.8	2,358	114.68	114.96
2,450	734.0	2,408	117.12	117.40
2,500	749.2	2,458	119.56	119.84
2,550	764.5	2,508	121.99	122.28
2,600	779.7	2,558	124.43	124.72
2,700	810.2	2,658	129.31	129.59
2,800	840.7	2,758	134.19	134.47

Distance between stacks (m): 14.61 N^0.25 approximation for merged stacks

Combined Plume Velocity, m/s				
Ht above AGL (ft)	Height above stacktop (m)	Height above stacktop (ft)	Ambient Condition, deg F	
			39	74
100	17.7	58	Not Merge	Not Merge
200	48.2	158	Not Merge	Not Merge
300	78.7	258	Not Merge	Not Merge
400	109.2	358	6.58	5.14
500	139.6	458	5.89	4.19
600	170.1	558	5.43	3.60
700	200.6	658	5.09	3.20
800	231.1	758	4.83	2.91
900	261.6	858	4.61	2.69
1,100	322.5	1,058	4.28	2.39
1,200	353.0	1,158	4.15	2.28
1,300	383.5	1,258	4.03	2.19
1,400	414.0	1,358	3.92	2.11
1,500	444.4	1,458	3.83	2.04
1,600	474.9	1,558	3.74	1.98
1,700	505.4	1,658	3.66	1.93
1,800	535.9	1,758	3.59	1.88
1,850	551.1	1,808	3.56	1.86
1,900	566.4	1,858	3.52	1.83
2,000	596.8	1,958	3.46	1.80
2,100	627.3	2,058	3.40	1.76
2,200	657.8	2,158	3.35	1.73
2,300	688.3	2,258	3.30	1.70
2,400	718.8	2,358	3.25	1.67
2,450	734.0	2,408	3.23	1.65
2,500	749.2	2,458	3.21	1.64
2,550	764.5	2,508	3.18	1.63
2,600	779.7	2,558	3.16	1.62
2,700	810.2	2,658	3.12	1.59
2,800	840.7	2,758	3.08	1.57

Appendix 3.11B
Federal Aviation Administration Notice and Forms

Federal Aviation Administration

« OE/AAA

Obstruction Evaluation
Version 2015.2.2

- Home
- FAA OE/AAA Offices
- View Determined Cases
- View Interim Cases
- View Proposed Cases
- View Supplemental Notices (Form 7460-2)
- View Circularized Cases
- Search Archives
- Download Archives
- Download Correspondence
- Circle Search for Cases
- Circle Search for Airports
- General FAQs
- Wind Turbine FAQs
- Discretionary Review FAQs
- Notice Criteria Tool
- DoD Preliminary Screening Tool
- Wind Turbine Build Out
- Distance Calculation Tool

OE/AAA Account

- Portal Page
- My Cases (Off Airport)
- My Cases (On Airport)
- My Sponsors
- My Circ Comments
- Add New Case (Off Airport)
- Add New Case (On Airport)
- Add Supplemental Notice (7460-2 Form)
- My Case Transfer History
- Update User Account
- What's New
- Instructions

Notice Criteria Tool

faa.gov Tools: Print this page

Notice Criteria Tool - Desk Reference Guide V_2014.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference CFR Title 14 Part 77.9.

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the FAA Co-location Policy
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

Latitude:	33 Deg 36 M 48.01 S
Longitude:	114 Deg 41 M 19.26 S
Horizontal Datum:	
Site Elevation (SE):	338 (nearest foot)
Structure Height (AGL):	140 (nearest foot)
Traverseway:	(Additional height is added to certain structures under 77.9(c))
Is structure on airport:	(•) No ( ) Yes

Results

You exceed the following Notice Criteria:

Your proposed structure exceeds an instrument approach area by 83 feet and aeronautical study is needed to determine if it will exceed a standard of subpart C of 14CFR Part 77. The FAA, in accordance with 77.9,

Change Password
Logout

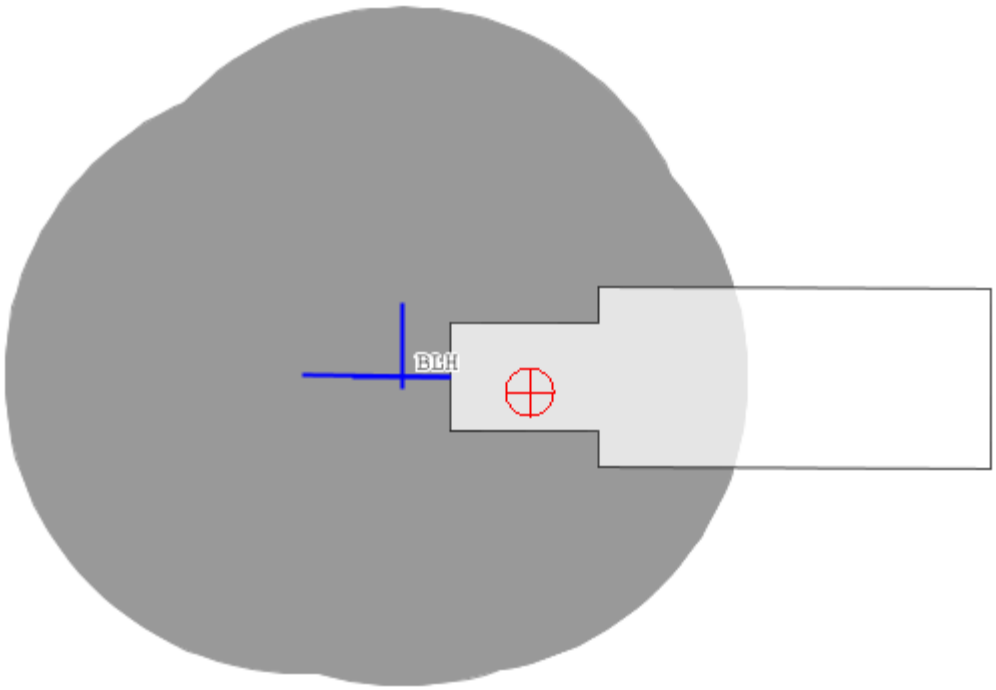
Information Resources
FAA Acronyms
Forms
Regulatory Policy
Relevant Advisory Circulars
Survey Accuracy
Light Outage Reporting
Useful Links
State Aviation Contacts
On Airport Contacts
Off Airport Contacts

requests that you file.

Your proposed structure is in proximity to a navigation facility and may impact the assurance of navigation signal reception. The FAA, in accordance with 77.9, requests that you file.

77.9(b) by 28 ft. The nearest airport is BLH, and the nearest runway is 08/26.

The FAA requests that you file



Federal Aviation Administration

« OE/AAA

Notice of Proposed Construction or Alteration - Off Airport

Add a new Case Off Airport - Desk Reference Guide V_2015.1.0

Add a New Case Off Airport for Wind Turbines - Met Towers - Desk Reference Guide V_2015.1.0

Project Name: ALTAG-000329188-15 **Sponsor:** AltaGas Sonoran Energy Inc.

Details for Case : Power plant stack

Show Project Summary

Case Status

ASN:	2015-AWP-6407-OE	**Date Accepted:**	06/04/2015
Status:	Accepted	**Date Determined:**	
		Letters:	None
		Documents:	None
Public Comments:	None		Project Documents: None

Construction / Alteration Information

Notice Of:	Construction
Duration:	Permanent
if Temporary :	Months: Days:
Work Schedule - Start:	06/01/2016
Work Schedule - End:	03/31/2018

For temporary cranes-Does the permanent structure require separate notice to the FAA? To find out, use the Notice Criteria Tool. If separate notice is required, please ensure it is filed. If it is not filed, please state the reason in the Description of Proposal.

State Filing:

Structure Summary

Structure Type:	Stack
Structure Name:	Power plant stack
FDC NOTAM:	
NOTAM Number:	
FCC Number:	
Prior ASN:	

Structure Details

Latitude:	33° 36' 48.01" N
Longitude:	114° 41' 19.26" W
Horizontal Datum:	NAD83
Site Elevation (SE):	338 (nearest foot)
Structure Height (AGL):	140 (nearest foot)
Current Height (AGL): **** For notice of alteration or existing provide the current AGL height of the existing structure. Include details in the Description of Proposal***	(nearest foot)
Minimum Operating Height (AGL): **** For aeronautical study of a crane or construction equipment the maximum height should be listed above as the Structure Height (AGL). Additionally, provide the minimum operating height to avoid delays if impacts are identified that require negotiation to a reduced height. If the Structure Height and minimum operating height are the same enter the same value in both fields.***	(nearest foot)
Nacelle Height (AGL): **** For Wind Turbines 500ft AGL or greater***	(nearest foot)
Requested Marking/Lighting:	None
Other :	
Recommended Marking/Lighting:	
Current Marking/Lighting:	N/A Proposed Structure
Other :	
Nearest City:	Blythe City
Nearest State:	California
Description of Location: ***On the Project Summary page upload any certified survey.***	The site is a 76 acre parcel in the City of Blythe, Riverside County, California. It is bound to the north by Riverside Avenue, to the east by the Blythe Energy Project and to the south by Hobson Way. It is fenced, sparsely vegetated and relatively flat.
Description of Proposal:	SEP is a proposed natural-gas-fired, water cooled, combined-cycle, 553 MW net electrical generating facility, laid out using one-on-one single shaft arrangement utilizing a GE's 7HA.02 gas turbine and a D652 steam turbine.

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Specific Frequencies

Previous Back to Search Result Next

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
2601 Meacham Boulevard
Fort Worth, TX 76193

Aeronautical Study No.
2015-AWP-6407-OE

Issued Date: 07/06/2015

Chris Doyle
AltaGas Sonoran Energy Inc.
1411 3rd Street, Suite A
Port Huron, MI 48060

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Stack Power plant stack
Location:	Blythe City, CA
Latitude:	33-36-48.01N NAD 83
Longitude:	114-41-19.26W
Heights:	338 feet site elevation (SE)
	140 feet above ground level (AGL)
	478 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed and maintained in accordance with FAA Advisory circular 70/7460-1 K Change 2.

This determination expires on 01/06/2017 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates , heights, frequency(ies) and power . Any changes in coordinates , heights, and frequencies or use of greater power will void this determination. Any future construction or alteration , including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

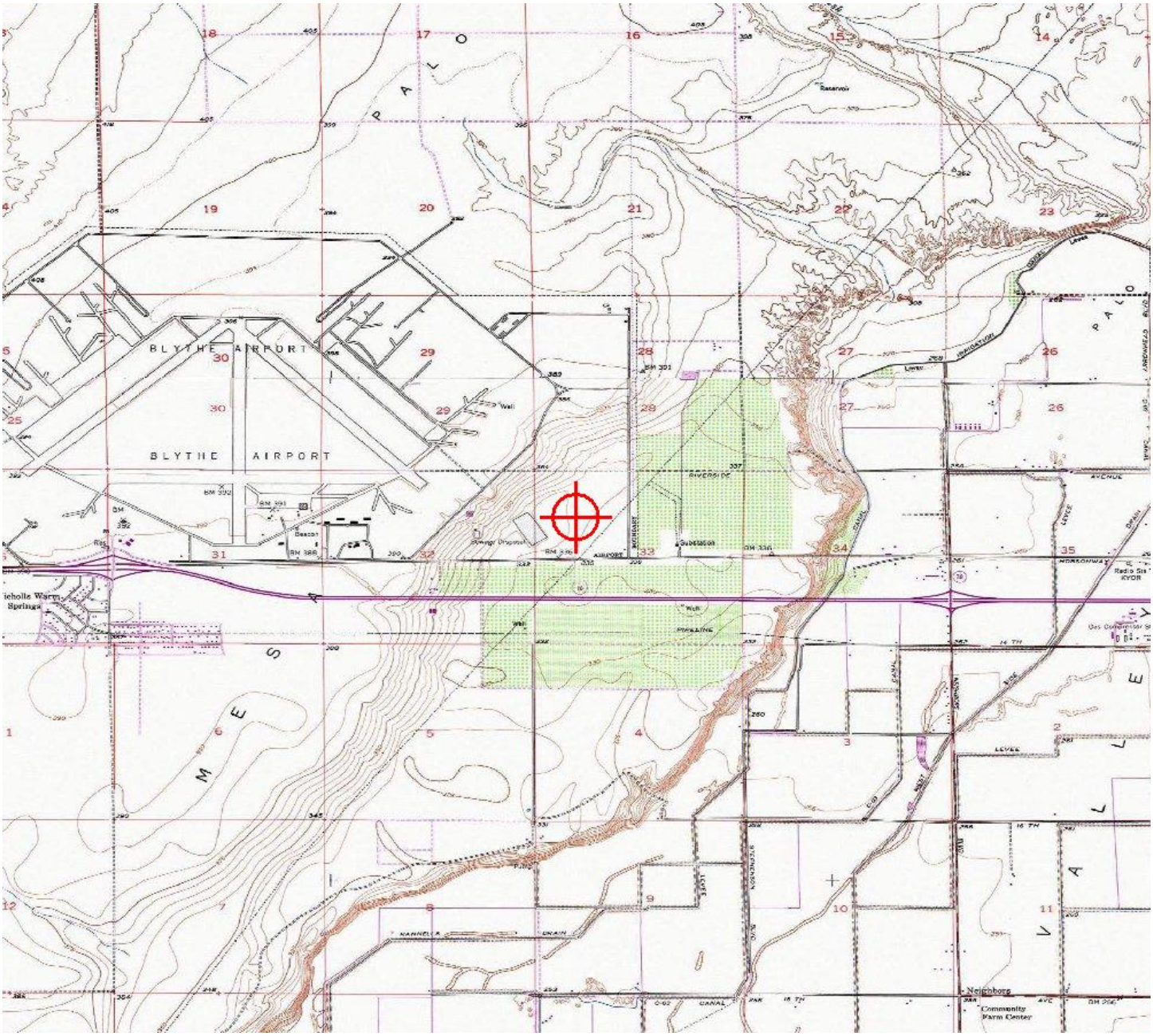
Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

If we can be of further assistance, please contact our office at (425) 227-2625. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2015-AWP-6407-OE.

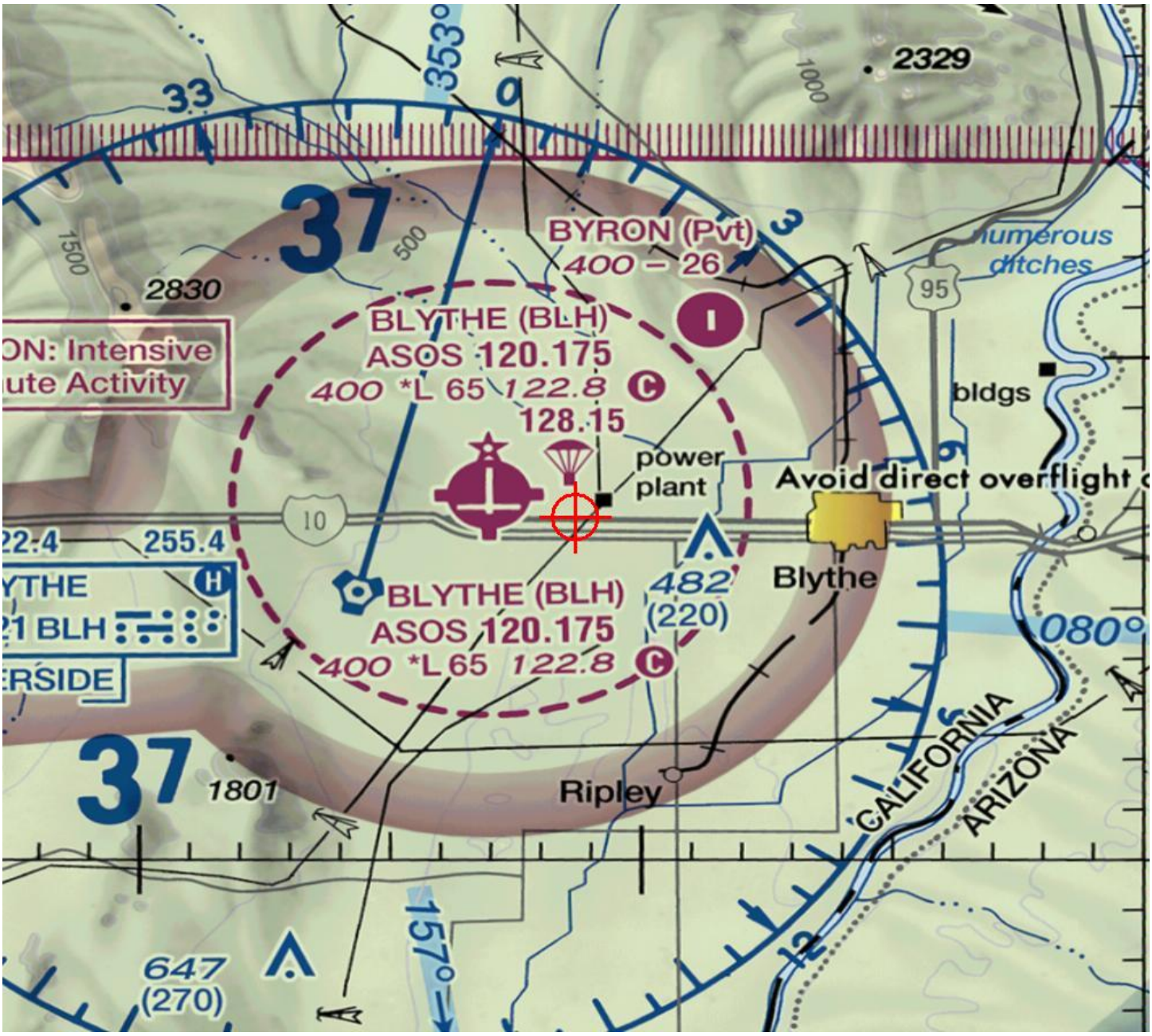
Signature Control No: 254026234-256897610 (DNE)
Paul Holmquist
Technician

Attachment(s)
Map(s)

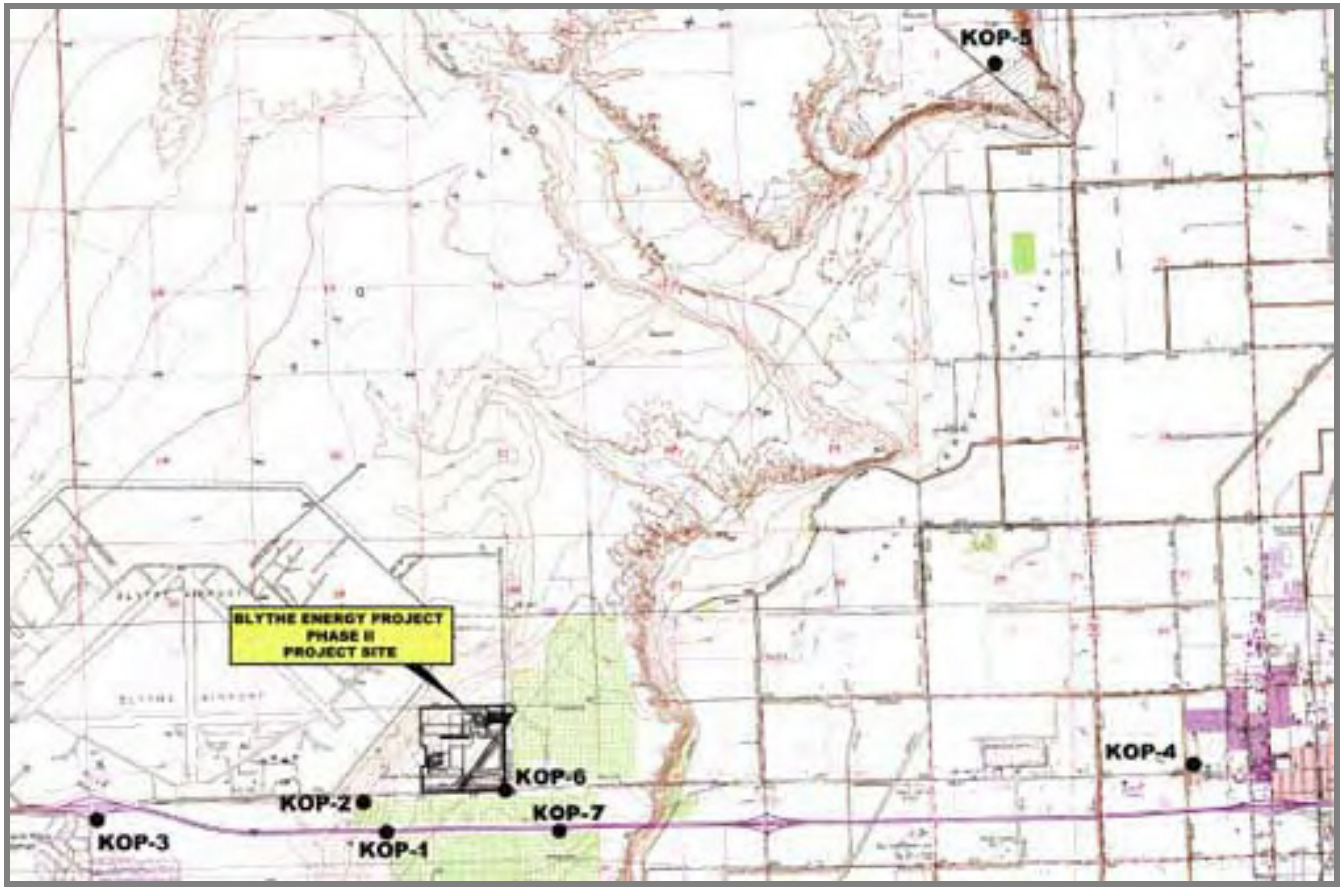
TOPO Map for ASN 2015-AWP-6407-OE



Sectional Map for ASN 2015-AWP-6407-OE



Appendix 3.12
FSA Visual Resources Figures



FSA VISUAL RESOURCES FIGURE 1
Key Observation Point Locations
Sonoran Energy Project
Riverside County, California

Source: California Energy Commission (CEC), 2005. Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C. Sacramento, California. December.

FSA VISUAL RESOURCES FIGURE 2
Key Observation Point 1
Sonoran Energy Project
Riverside County, California

Source: California Energy Commission (CEC), 2005. Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C. Sacramento, California. December.

FSA VISUAL RESOURCES FIGURE 3
Key Observation Point 2
Sonoran Energy Project
Riverside County, California

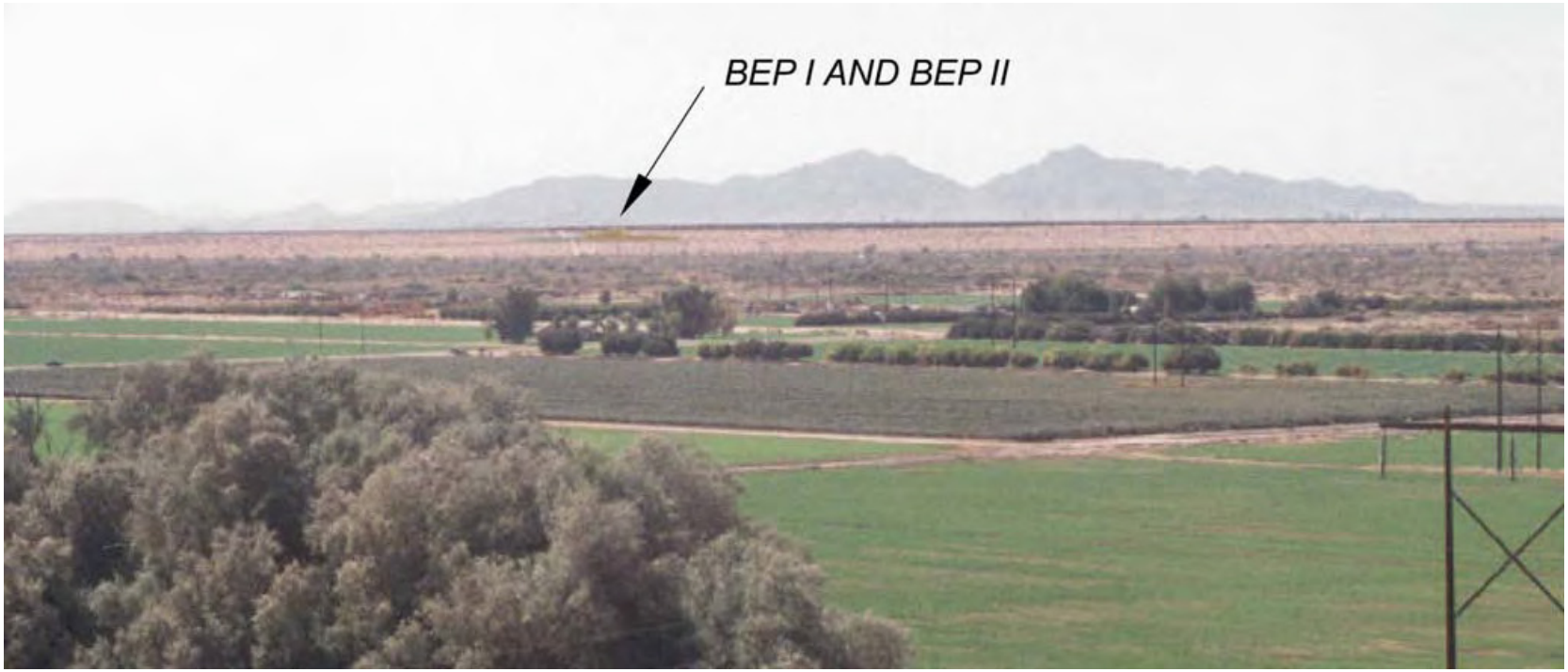
Source: California Energy Commission (CEC), 2005. Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C. Sacramento, California. December.

FSA VISUAL RESOURCES FIGURE 4
Key Observation Point 3
Sonoran Energy Project
Riverside County, California

Source: California Energy Commission (CEC), 2005. Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C. Sacramento, California. December.

FSA VISUAL RESOURCES FIGURE 5
Key Observation Point 4
Sonoran Energy Project
Riverside County, California

Source: California Energy Commission (CEC), 2005. Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C. Sacramento, California. December.



FSA VISUAL RESOURCES FIGURE 6
Key Observation Point 5
Sonoran Energy Project
Riverside County, California

Source: California Energy Commission (CEC), 2005. Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C. Sacramento, California. December.

FSA VISUAL RESOURCES FIGURE 7
Key Observation Point 6
Sonoran Energy Project
Riverside County, California

Source: California Energy Commission (CEC), 2005. Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C. Sacramento, California. December.

FSA VISUAL RESOURCES FIGURE 8
Key Observation Point 7
Sonoran Energy Project
Riverside County, California

Source: California Energy Commission (CEC), 2005. Commission Decision for the Blythe Energy Project Phase II, Docket Number 02-AFC-01C. Sacramento, California. December.