



# San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



MAY 02 2013

Mr. Lance Ericksen  
Chevron U.S.A. Inc.  
PO Box 1392  
Bakersfield, CA. 93302

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)  
District Facility # S-2010  
Project # 1124301**

Dear Mr. Ericksen:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. You requested that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. Chevron U.S.A. Inc. (CUSA) is applying for an Authority to Construct (ATC) to allow the use of a thermal oxidizer to control well casing emissions.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authorities to Construct with Certificates of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. Prior to operating with modifications authorized by the Authorities to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

David Warner  
Director of Permit Services

DW:DT/st

Enclosures

cc: Mike Tollstrup, CARB (w/enclosure) via email  
cc: Gerardo C. Rios, EPA (w/enclosure) via email

Seyed Sadredin  
Executive Director/Air Pollution Control Officer

Northern Region  
4800 Enterprise Way  
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Southern Region  
34946 Flyover Court  
Bakersfield, CA 93308-9725  
Tel: 661-392-5500 FAX: 661-392-5585

Newspaper notice for publication in Bakersfield Californian and for posting on valleyair.org

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**NOTICE OF PRELIMINARY DECISION  
FOR THE ISSUANCE OF AUTHORITY TO CONSTRUCT AND  
THE PROPOSED SIGNIFICANT MODIFICATION OF FEDERALLY  
MANDATED OPERATING PERMIT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Air Pollution Control District solicits public comment on the proposed significant modification of Chevron U.S.A. Inc. at the Lost Hills oilfield in Section 29, T26S, R21E, California. Chevron U.S.A. Inc. (CUSA) is applying for an Authority to Construct (ATC) to allow the use of a thermal oxidizer to control well casing emissions.

The District's analysis of the legal and factual basis for this proposed action, project #1124301, is available for public inspection at [http://www.valleyair.org/notices/public\\_notices\\_idx.htm](http://www.valleyair.org/notices/public_notices_idx.htm) and at any District office. There are minor emission increases associated with this proposed action. This will be the public's only opportunity to comment on the specific conditions of the modification. If requested, the District will hold a public hearing regarding issuance of this modification. For additional information, please contact the District at (661) 392-5500. Written comments on the proposed initial permit must be submitted by June 7, 2013 to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 34946 FLYOVER COURT, BAKERSFIELD, CA 93308.**

**San Joaquin Valley Air Pollution Control District**  
**Authority to Construct Application Review**  
Thermal Oxidizer

Facility Name:	Chevron U.S.A. Inc.	Date:	4/30/13
Mailing Address:	PO Box 1392 Bakersfield, CA. 93302	Engineer:	David Torii
Contact Person:	Lance Ericksen	Lead Engineer:	Rich Karrs
Telephone:	(661) 654-7145		
Fax:	(661) 654-7006		
E-Mail:	Lance.Ericksen@chevron.com		
Application #(s):	S-2010-308-1 and '316-0		
Project #:	1124301		
Deemed Complete:	12/21/12		

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## **I. Proposal**

Chevron U.S.A. Inc. (CUSA) is applying for an Authority to Construct (ATC) to allow the use of a thermal oxidizer and SOx scrubber to control well casing vapors in their Light Oil Western Stationary Source.

CUSA is conducting a pilot test to steam "light oil" wells in the Lost Hills Oilfield. In order to dispose of the gas CUSA is proposing the use of a thermal oxidizer and SOX scrubber as a control device for wells permitted under S-2010-308. The oxidizer will operate only when the wells are producing. Because well production is not continuous the oxidizer will be used intermittently at variable loads. The emissions proposed are for the highest expected daily volume of gas. Annual limits that are more restrictive than the maximum daily limits at full usage are proposed.

### **Disposition of Outstanding ATCs:**

ATC S-2010-308-0 serves as the base document and will be required to be implemented prior to or concurrently with S-2010-308-1. ATC S-2010-308-0 is included in Appendix B.

CUSA received their Title V Permit on 4/30/04. This modification is classified as a Title V significant modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. CUSA must apply to administratively amend their Title V permit.

## **II. Applicable Rules**

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410	Prevention Of Significant Deterioration (11/26/12)
Rule 2520	Federally Mandated Operating Permits (6/21/01)

Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4311	Flares (June 18, 2009)
Rule 4401	Steam Enhances Crude Oil Production Wells (June 16, 2011)
Rule 4409	Components at Light Curde Oil Production Facilities, Natgural Gas Production Facilities, and Natural Gas Processing Facilities (April 20, 2005)
Rule 4801	Sulfur Compounds (12/17/92)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)	
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines	

### **III. Project Location**

This project is located at CUSA's western Kern County Fields light oil production stationary source in the Lost Hills oilfield at Section 29, T26S, R21E. This project is not located within 1,000 feet of the outer boundary of a K-12 school. Location maps are included in Appendix C.

### **IV. Process Description**

CUSA operates permitted equipment in the Lost Hills Oilfield utilized for the production of crude oil and natural gas. In enhanced thermal oil recovery, natural gas is combusted in steam generators to produce steam for injection into crude oil bearing strata via injection wells to reduce the viscosity of the crude oil thereby facilitating thermally enhanced oil production. The Lost Hills wells operate with closed casing vents. Produced crude fluids are separated into oil and gas in the master trap(s) permitted under S-2010-308. The gas produced in Lost Hills has high mercaptan sulfur that cannot be completely removed by the oilfield sulfur treatment systems. While highly effective for H<sub>2</sub>S removal, systems such as SulfaTreat only remove a small fraction of the mercaptan sulfur. Consequently, gas produced from Lost Hills cannot be treated to meet "pipeline quality" sulfur and must be disposed of as waste gas.

CUSA is proposing to install a thermal oxidizer to dispose of up to 1000 MSCFD of waste gas. The thermal oxidizer will be equipped with a caustic post-combustion scrubber to remove SO<sub>2</sub>.

Manufacturer's information is included in Appendix D.

### **V. Equipment Listing**

ATC S-2010-308-0: TEOR SYSTEM WITH UP TO 130 STEAM ENHANCED WELLS OPERATED WITH CLOSED CASING VENTS, PERMIT EXEMPT WELL TESTERS, PRESSURE VESSELS, RELIEF TANK, AND MASTER TRAP(S) VENTED TO H<sub>2</sub>S REMOVAL SYSTEM AND THE FIELD GAS GATHERING PIPELINE

Proposed ATCs:

- S-2010-308-1: MODIFICATION OF TEOR SYSTEM WITH UP TO 130 STEAM ENHANCED WELLS OPERATED WITH CLOSED CASING VENTS, PERMIT EXEMPT WELL TESTERS, PRESSURE VESSELS, RELIEF TANK, AND MASTER TRAP(S) VENTED TO H2S REMOVAL SYSTEM AND THE FIELD GAS GATHERING PIPELINE: AUTHORIZE THERMAL OXIDIZER S-2010-316 AS A CONTROL DEVICE
- S-2010-316-0: EPCON THERMAL OXIDIZER WITH 9.0 MMBTU/HR MAXON KINEDIZER LE BURNER OR EQUIVALENT BURNER, COMBUSTION AIR FAN, PROCESS AIR FAN, SERVED BY A DUAL CAUSTIC SO2 SCRUBBER WITH WET ESP MIST ELIMINATOR

Post Project Equipment Description:

- S-2010-308-1: TEOR SYSTEM WITH UP TO 130 STEAM ENHANCED WELLS OPERATED WITH CLOSED CASING VENTS, PERMIT EXEMPT WELL TESTERS, PRESSURE VESSELS, RELIEF TANK, AND MASTER TRAP(S) VENTED TO THERMAL OXIDIZER S-2010-316 OR H2S REMOVAL SYSTEM AND THE FIELD GAS GATHERING PIPELINE:
- S-2010-316-0: EPCON THERMAL OXIDIZER WITH 9.0 MMBTU/HR MAXON KINEDIZER LE BURNER, COMBUSTION AIR FAN, PROCESS AIR FAN, SERVED BY A CAUSTIC SO2 SCRUBBER WITH WET ESP MIST ELIMINATOR

**VI. Emission Control Technology Evaluation**

The thermal oxidizer is a control device for thermally enhanced wells at Lost Hills and has the potential to emit NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, VOC and GHG emissions due to the incineration of waste gas and supplemental fuel. The thermal oxidizer is proposed to reduce VOC emissions by 99.9%.

The thermal oxidizer will be served by a post-combustion flue gas scrubber to control SO<sub>2</sub>. Gas absorption is employed in the wet scrubber to remove sulfur dioxide (SO<sub>2</sub>) from flue gas. Absorption is a process in which SO<sub>2</sub> is dissolved into a liquid. Removal of sulfur dioxide from the flue gas stream passing through a wet scrubber involves preferential solution of the sulfur dioxide into an aqueous scrubbing liquor followed by reaction with active alkaline constituents in the liquor. The reaction products are sulfur containing salts which are purged from the scrubber in a small bleed stream and sent to disposal. The scrubber and is proposed to remove 97.5% of the SO<sub>2</sub>. A wet ESP will remove submicron liquid droplets prior to the flue gas emitting to the atmosphere.

**VII. General Calculations**

**A. Assumptions**

- Facility will operate up to 24 hours per day and 365 days per year.

- The thermal oxidizer's potential to emit includes emissions from the combustion of waste gas and supplemental fuel (24 hr/day and 365 day/yr).
- Total quantity of supplemental fuel combusted in thermal oxidizer shall not exceed 9.0 MMBtu/hr.
- Total quantity of waste gas combusted in thermal oxidizer shall not exceed 1.0 MMscf/day.
- Waste gas HHV 480 Btu/scf (applicant)
- Supplemental fuel gas HHV is 1000 Btu/scf (applicant)
- Total Sulfur as H<sub>2</sub>S in waste gas: 60,000 ppmv (6%) on daily basis (applicant)
- Waste gas sulfur content is based on gas samples from the test wells and assumptions on worst case future sulfur content. (applicant)
- VOC control efficiency 99.9% (applicant)
- Scrubber SO<sub>2</sub> removal efficiency 97.5% (applicant)
- The VOC content of the waste gas is less than 10% VOC – See Appendix E for representative gas sample.
- Pursuant to determination #20 of FYI 111 the modification to ATC S-2010-308-0 is not an NSR modification; therefore, calculations are not required for S-2010-308-1

## **B. Emission Factors**

NO<sub>x</sub>, CO, VOC and CO<sub>2</sub> emission rates are based on manufacturers Information as shown in Appendix F. The applicant states that the emission rates were derived as follows: "The products of combustion ( exhaust composition ) are calculated stoichiometricly based on the firing rates ( amount ), temperature, and chemical composition of the waste gas, supplemental natural gas, and excess air . Actual field source tests on similar equipment have validated these numbers."

NO<sub>x</sub> – 2.86 lb/hr

SO<sub>x</sub> –7.0 lb/hr (proposed by applicant, see 2/15/13 letter)

CO – 1.86 lb/hr

VOC – 0.11 lb/hr

GHG – 6468 lb/hr (includes CO<sub>2</sub> in waste gas)

PM<sub>10</sub> emission limit is based on permitted emission factors for other scrubbed steam generators (e.g. S-1141-555, '-556 and '-557) of 0.073 lb-PM<sub>10</sub>/MMBtu.

## **C. Calculations**

**1. Pre-Project Potential to Emit (PE1)**

Since S-2010-316 is a new emissions unit, PE1 = 0 for all pollutants.

**2. Post Project Potential to Emit (PE2)**

PM10 – Daily and Hourly

Heat input to thermal oxidizer: waste gas + supplemental fuel

$[(1.0 \text{ MMsf/day waste gas} \times 480 \text{ btu/scf waste gas})] + 14 \text{ MMbtu/day supplemental fuel} = 494 \text{ MMbtu/day}$

$494 \text{ MMbtu/day} \times 0.073 \text{ lb-PM10/MMbtu} = 36.1 \text{ lb-PM10/day}$   
 $(36.1 \text{ lb-PM10/day})/24\text{hr/day} = 1.50 \text{ lb-PM10/hr}$

PM10 - Annual

Based on approximately 75% usage

$36.1 \text{ lb/day} \times 365 \text{ days/year} \times 0.75 = 9882 \text{ lb/year}$

VOC – Fugitive Components

Per District Policy SSP 2015 VOC emissions are not assessed to components handling fluid streams with a VOC content of 10% or less by weight. Components associated with the thermal oxidizer handle only fluids with VOC content of 10% or less (see Appendix E for representative gas sample) therefore, VOC emissions from fugitives are not assessed.

NOx, SOx, CO, VOC and CO2 - Daily

Based on 24 hr/day use –

NOx –  $2.86 \text{ lb/hr} \times 24 \text{ hr/day} = 68.6 \text{ lb/day}$

SOx –  $7.0 \text{ lb/hr} \times 24 \text{ hr/day} = 168.0 \text{ lb/day}$

CO –  $1.86 \text{ lb/hr} \times 24 \text{ hr/day} = 44.6 \text{ lb/day}$

VOC –  $0.11 \text{ lb/hr} \times 24 \text{ hr/day} = 2.6 \text{ lb/day}$

GHG –  $6468 \text{ lb/hr} \times 24 \text{ hr/day} = 155,232 \text{ lb/day}$  (includes CO2 in waste gas)

NOx, CO, VOC and CO2 - Annual

Based on 75% annual usage

NOx –  $68.6 \text{ lb/day} \times 365 \text{ day/yr} \times 0.75 = 18,779 \text{ lb/yr}$

CO –  $44.6 \text{ lb/day} \times 365 \text{ day/yr} \times 0.75 = 12,209 \text{ lb/yr}$

VOC –  $2.6 \text{ lb/day} \times 365 \text{ day/yr} \times 0.75 = 712 \text{ lb/yr}$

GHG –  $155,232 \text{ lb/day} \times 365 \text{ day/yr} \times 0.75 = 42,494,760 \text{ lb/yr}$  (includes CO2 in waste gas)

GHG = 21,247 tons/yr

SOx - Annual

In addition to usage, the annual average sulfur content of the waste gas will be below the daily maximum. To allow for this variation CUSA proposes a maximum of 50,000 lb/year of SO<sub>2</sub> emissions. In order to make this limit enforceable CUSA is proposing periodic sampling of waste gas sulfur content, measurement of waste gas flow and calculations to demonstrate compliance.

Emissions Summary

Gas type	Emission lb/hr				
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Combined	2.86	7.0	1.50	1.86	0.11

Gas type	Emission lb/day				
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Combined	68.6	168.0	36.1	44.6	2.6

Gas type	Emission lb/year				
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
Combined	18,779	50,000	9,882	12,209	712

CO<sub>2</sub> annual emissions are as shown above: 21,247 tons/year

**3. Pre-Project Stationary Source Potential to Emit (SSPE1)**

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site.

Pre Project Stationary Source Potential to Emit [SSPE1] (lb/year)*					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE1	94,597	28,368	38,245	193,432	>254,323

\*from S1092524

**4. Post Project Stationary Source Potential to Emit (SSPE2)**

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.



Post Project Stationary Source Potential to Emit [SSPE2] (lb/year)					
Permit Unit	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE1	94,597	28,368	38,245	193,432	>254,323
S-2010-316-0	18,779	50,000	9,882	12,209	712
SSPE2	113,376	78,368	48,127	205,641	>255,035

## 5. Major Source Determination

### Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. However, for the purposes of determining major source status, the SSPE2 shall not include the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site."

Major Source Determination (lb/year)					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE1*	94,597	28,368	38,245	193,432	>254,323
SSPE2	113,376	78,368	48,127	205,641	>255,035
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	yes	no	no	yes	yes

As seen in the table above, the facility is an existing Major Source for NO<sub>x</sub> and VOC only and is becoming a Major Source CO as a result of this project.

### Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

PSD Major Source Determination (tons/year)							
	NO <sub>2</sub>	VOC	SO <sub>2</sub>	CO	PM	PM <sub>10</sub>	CO <sub>2e</sub>
Estimated Facility PE before Project Increase	42.1	48.6	1.9	165.6	4.9	4.9	84,941
PSD Major Source Thresholds	250	250	250	250	250	250	100,000
PSD Major Source ? (Y/N)	n	n	n	n	n	n	n

As shown above, the facility is not an existing major source for PSD for at least one pollutant. Therefore the facility is not an existing major source for PSD. A summary of the Lost Hills Stationary Source potential to emit is included as Appendix K.

## 6. Baseline Emissions (BE)

The BE calculation (in lbs/year) is performed pollutant-by-pollutant for each unit within the project to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

Since S-2010-316 is a new emissions unit, BE = PE1 = 0 for all pollutants.

### 7. SB 288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

Since this facility is a major source for NO<sub>x</sub> and VOC, the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if the SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO <sub>x</sub>	18,779	50,000	No
SO <sub>x</sub>	50,000	80,000	No
PM <sub>10</sub>	9,882	30,000	No
VOC	712	50,000	No

Since none of the SB 288 Major Modification Thresholds are surpassed with this project, this project does not constitute an SB 288 Major Modification.

### 8. Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

The determination of Federal Major Modification is based on a two-step test. For the first step, only the emission *increases* are counted. Emission decreases may not cancel out the increases for this determination.

**Step 1**

For new emissions units, the increase in emissions is equal to the PE2 for each new unit included in this project.

The project's emission increases are compared to the Federal Major Modification Thresholds in the following table.

Federal Major Modification Thresholds for Emission Increases			
Pollutant	Total Emissions Increases (lb/yr)	Thresholds (lb/yr)	Federal Major Modification?
NO <sub>x</sub> *	18,779	0	Yes
VOC*	712	0	Yes
PM <sub>10</sub>	9,882	30,000	No
PM <sub>2.5</sub>	9,882	20,000	No
SO <sub>x</sub>	50,000	80,000	No

\*If there is any emission increases in NO<sub>x</sub> or VOC, this project is a Federal Major Modification and no further analysis is required.

Since there is an increase in NO<sub>x</sub> and VOC emissions, this project constitutes a Federal Major Modification, and no further analysis is required.

**9. Quarterly Net Emissions Change (QNEC)**

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Detailed QNEC calculations are included in Appendix A.

**VIII. Compliance****Rule 2201 New and Modified Stationary Source Review Rule****A. Best Available Control Technology (BACT)****1. BACT Applicability**

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions\*:

- a. Any new emissions unit with a potential to emit exceeding two pounds per day,
- b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

\*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

**a. New emissions units – PE > 2 lb/day**

As seen in Section VII.C.2 above, the applicant is proposing to install a new thermal oxidizer with a PE greater than 2 lb/day for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO, and VOC. BACT is triggered for NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, CO and VOC only since the PEs are greater than 2 lbs/day.

**b. Relocation of emissions units – PE > 2 lb/day**

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered.

**c. Modification of emissions units – AIPE > 2 lb/day**

As discussed in Section I above, there are no modified emissions units associated with this project. Therefore BACT is not triggered.

**d. SB 288/Federal Major Modification**

As discussed in Section VII.C.7 above, this project does constitute a Federal Major Modification for NO<sub>x</sub> and VOC emissions. Therefore BACT is triggered for NO<sub>x</sub> and VOC for all emissions units in the project for which there is an emission increase.

**2. BACT Guideline**

BACT Guideline 1.4.5, applies to the thermal oxidizer. [Oilfield Waste Gas Incinerator] (See **Appendix G**)

**3. Top-Down BACT Analysis**

Per Permit Services Policies and Procedures for BACT, a Top-Down BACT analysis shall be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule.

Pursuant to the attached Top-Down BACT Analysis (see **Appendix H**), BACT has been satisfied with the following:

**NO<sub>x</sub>**: Natural Gas or LPG auxiliary fuel

**PM<sub>10</sub>**: Vapor control system and 95% sulfur removal by scrubber or vapors no greater than 0.2 gr S/100 dscf and natural gas or LPG as auxiliary fuel

**SO<sub>x</sub>**: Vapor control system and 95% sulfur removal by scrubber or vapors no greater than 0.2 gr S/100 dscf and natural gas or LPG as auxiliary fuel

**CO**: Natural gas or LPG auxiliary fuel

**VOC**: Natural gas or LPG auxiliary fuel

**B. Offsets****1. Offset Applicability**

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE1	94,597	28,368	38,245	193,432	>254,323
SSPE2	113,376	78,368	48,127	205,641	>255,035
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	yes	yes	yes	yes	yes

**2. Quantity of Offsets Required****NO<sub>x</sub>:**

The quantity of offsets in pounds per year for NO<sub>x</sub> is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) =  $(\Sigma[PE2 - BE] + ICCE) \times DOR$ , for all new or modified emissions units in the project,

Where,

PE2 = Post Project Potential to Emit, (lb/year)

BE = Baseline Emissions, (lb/year)

ICCE = Increase in Cargo Carrier Emissions, (lb/year)

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

otherwise,

BE = HAE

As calculated in Section VII.C.6 above, the BE from this unit are equal to zero since the unit is new

Also, there is only one emissions unit associated with this project and there are no increases in cargo carrier emissions. Therefore offsets can be determined as follows:

$$\text{Offsets Required (lb/year)} = ([\text{PE2} - \text{BE}] + \text{ICCE}) \times \text{DOR}$$

$$\begin{aligned} \text{PE2 (NO}_x\text{)} &= 18,779 \text{ lb/year} \\ \text{BE (NO}_x\text{)} &= 0 \text{ lb/year} \\ \text{ICCE} &= 0 \text{ lb/year} \end{aligned}$$

Assuming an offset ratio of 1.5:1, the amount of NO<sub>x</sub> ERCs that need to be withdrawn is:

$$\begin{aligned} \text{Offsets Required (lb/year)} &= ([18,779 - 0] + 0) \times 1.5 \\ &= 28,169 \text{ lb NO}_x\text{/year} \end{aligned}$$

Calculating the appropriate quarterly emissions to be offset is as follows:

<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
7042	7042	7042	7042

The applicant has stated that the facility plans to use ERC certificate S-3735-2 to offset the increases in NO<sub>x</sub> emissions associated with this project. The above certificate has available quarterly NO<sub>x</sub> credits as follows:

	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
ERC #S-3735-2	43,881	44,422	44,964	44,964

As seen above, the facility has sufficient credits to fully offset the quarterly NO<sub>x</sub> emissions increases associated with this project.

**Proposed Rule 2201 (offset) Conditions:**

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender NO<sub>x</sub> emission reduction credits for the following quantity of emissions: 1st quarter - 7042 lb, 2nd quarter - 7042 lb, 3rd quarter - 7042 lb, and fourth quarter - 7042 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
- ERC Certificate Number S-3735-2 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

**SO<sub>x</sub>:**

The quantity of offsets in pounds per year for SO<sub>x</sub> is calculated as follows for sources with an SSPE1 less than the offset threshold levels before implementing the project being evaluated.

$$\text{Offsets Required (lb/year)} = [(\text{SSPE2} - \text{ROT} + \text{ICCE}) \times \text{DOR}]$$

Where,

SSPE2 = Post Project Stationary Source Potential to Emit

ROT = Respective Offset Threshold, for the respective pollutant

ICCE = Increase in Cargo Carrier Emissions

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

$$\text{Offsets Required (lb/year)} = [(\text{SSPE2} - \text{Emergency Equipment} - \text{ROT} + \text{ICCE}) \times \text{DOR}]$$

$$\text{SSPE2 (SO}_x\text{)} = 78,368 \text{ lb/year}$$

$$\text{Offset threshold (SO}_x\text{)} = 54,750 \text{ lb/year}$$

$$\text{ICCE} = 0 \text{ lb/year}$$

Assuming an offset ratio of 1.5:1, the amount of SO<sub>x</sub> ERCs that need to be withdrawn is:

$$\begin{aligned} \text{Offsets Required (lb/year)} &= [(78,368 - 54,750 + 0) \times 1.5] \\ &= 23,618 \times 1.5 \\ &= 35,427 \text{ lb SO}_x\text{/year} \end{aligned}$$

Calculating the appropriate quarterly emissions to be offset is as follows:

<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
8857	8857	8857	8857

The applicant has stated that the facility plans to use ERC certificate S-2080-5 to offset the increases in SO<sub>x</sub> emissions associated with this project. The above certificate has available quarterly SO<sub>x</sub> credits as follows:

	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
ERC #S-2080-5	35,848	36,301	36,756	36,756

As seen above, the facility has sufficient credits to fully offset the quarterly SO<sub>x</sub> emissions increases associated with this project.

**Proposed Rule 2201 (offset) Conditions:**

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender SO<sub>x</sub> emission reduction credits for the following quantity of emissions: 1st quarter - 8857 lb, 2nd quarter - 8857 lb, 3rd quarter - 8857 lb, and fourth quarter - 8857 lb. These amounts include the applicable offset ratio specified in Rule 2201, Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]

- {GC# 1983} ERC Certificate Number S-2080-5 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

**PM10:**

The quantity of offsets in pounds per year for PM10 is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) =  $(\Sigma[PE2 - BE] + ICCE) \times DOR$ , for all new or modified emissions units in the project,

Where,

PE2 = Post Project Potential to Emit, (lb/year)

BE = Baseline Emissions, (lb/year)

ICCE = Increase in Cargo Carrier Emissions, (lb/year)

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

otherwise,

BE = HAE

As calculated in Section VII.C.6 above, the BE from this unit are equal to zero since the unit is new

Also, there is only one emissions unit associated with this project and there are no increases in cargo carrier emissions. Therefore offsets can be determined as follows:

Offsets Required (lb/year) =  $([PE2 - BE] + ICCE) \times DOR$

PE2 (PM10) = 9882 lb/year

BE (PM10) = 0 lb/year

ICCE = 0 lb/year

Assuming an offset ratio of 1.5:1, the amount of PM10 ERCs that need to be withdrawn is:

Offsets Required (lb/year) =  $([9882 - 0] + 0) \times 1.5$   
= 14,823 lb VOC/year



Calculating the appropriate quarterly emissions to be offset is as follows:

<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
3706	3706	3706	3706

The applicant has stated that the facility plans to use ERC certificates S-2275-4 and S-3679-4 to offset the increases in PM10 emissions associated with this project. The above certificates have available quarterly PM10 credits as follows:

	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
ERC #S-2275-4	490	1911	1932	532
	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
ERC #S-3679-4	5317	2839	3598	5227

As seen above, the facility has sufficient credits to fully offset the quarterly PM10 emissions increases associated with this project.

**Proposed Rule 2201 (offset) Conditions:**

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions: 1st quarter - 9882 lb, 2nd quarter - 9882 lb, 3rd quarter - 9882 lb, and fourth quarter - 9882 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
- ERC Certificate Numbers S-2275-4 and S-3679-4 (or a certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

**CO:**

The quantity of offsets in pounds per year for CO is calculated as follows for sources with an SSPE1 less than the offset threshold levels before implementing the project being evaluated.

$$\text{Offsets Required (lb/year)} = [(\text{SSPE2} - \text{ROT} + \text{ICCE}) \times \text{DOR}]$$

Where,

SSPE2 = Post Project Stationary Source Potential to Emit

ROT = Respective Offset Threshold, for the respective pollutant

ICCE = Increase in Cargo Carrier Emissions

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

$$\text{Offsets Required (lb/year)} = [(\text{SSPE2} - \text{Emergency Equipment} - \text{ROT} + \text{ICCE}) \times \text{DOR}]$$

$$\text{SSPE2 (SO}_x\text{)} = 205,641 \text{ lb/year}$$

Offset threshold (SO<sub>x</sub>) = 200,000 lb/year  
 ICCE = 0 lb/year

Assuming an offset ratio of 1.5:1, the amount of CO ERCs that need to be withdrawn is:  
 Offsets Required (lb/year) = [(205,641 – 200,000 + 0) x 1.5]  
 = 5641 x 1.5  
 = 8462 lb CO/year

Calculating the appropriate quarterly emissions to be offset is as follows:

<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
2116	2116	2116	2116

The applicant has stated that the facility plans to use ERC certificate S-2005001/601 to offset the increases in CO emissions associated with this project. The above certificate has available quarterly CO credits as follows:

ERC #S-2005001/601:	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
	35,848	36,301	36,756	36,756

As seen above, the facility has sufficient credits to fully offset the quarterly CO emissions increases associated with this project.

**Proposed Rule 2201 (offset) Conditions:**

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender CO emission reduction credits for the following quantity of emissions: 1st quarter - 2116 lb, 2nd quarter - 2116 lb, 3rd quarter - 2116 lb, and fourth quarter - 2116 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
- {GC# 1983} ERC Certificate Number S-2005001/601 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

**VOC:**

The quantity of offsets in pounds per year for VOC is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

Offsets Required (lb/year) = (Σ[PE2 – BE] + ICCE) x DOR, for all new or modified emissions units in the project,

Where,  
 PE2 = Post Project Potential to Emit, (lb/year)

BE = Baseline Emissions, (lb/year)  
 ICCE = Increase in Cargo Carrier Emissions, (lb/year)  
 DOR = Distance Offset Ratio, determined pursuant to Section 4.8  
 BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, Located at a Major Source.

otherwise,

BE = HAE

As calculated in Section VII.C.6 above, the BE from this unit are equal to zero since the unit is new

Also, there is only one emissions unit associated with this project and there are no increases in cargo carrier emissions. Therefore offsets can be determined as follows:

$$\text{Offsets Required (lb/year)} = ([\text{PE2} - \text{BE}] + \text{ICCE}) \times \text{DOR}$$

$$\text{PE2 (VOC)} = 712 \text{ lb/year}$$

$$\text{BE (VOC)} = 0 \text{ lb/year}$$

$$\text{ICCE} = 0 \text{ lb/year}$$

Assuming an offset ratio of 1.5:1, the amount of VOC ERCs that need to be withdrawn is:

$$\begin{aligned} \text{Offsets Required (lb/year)} &= ([712 - 0] + 0) \times 1.5 \\ &= 1068 \text{ lb VOC/year} \end{aligned}$$

Calculating the appropriate quarterly emissions to be offset is as follows:

<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
267	267	267	267

The applicant has stated that the facility plans to use ERC certificate S-3905-1 to offset the increases in VOC emissions associated with this project. The above certificate has available quarterly VOC credits as follows:

	<u>1<sup>st</sup> Quarter</u>	<u>2<sup>nd</sup> Quarter</u>	<u>3<sup>rd</sup> Quarter</u>	<u>4<sup>th</sup> Quarter</u>
ERC #S-3905-1	5284	5380	5476	5475

As seen above, the facility has sufficient credits to fully offset the quarterly VOC emissions increases associated with this project.

**Proposed Rule 2201 (offset) Conditions:**

- {GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 267 lb, 2nd quarter - 267 lb, 3rd quarter - 267 lb, and fourth quarter - 267 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
- ERC Certificate Number S-3905-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

**C. Public Notification**

**1. Applicability**

Public noticing is required for:

- New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
- Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- Any project which results in the offset thresholds being surpassed, and/or
- Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

**a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications**

New Major Sources are new facilities, which are also Major Sources. Since this is not a new facility, public noticing is not required for this project for New Major Source purposes.

As demonstrated in VII.C.7, this project is a Federal Major Modification. Therefore, public noticing for Federal Major Modification purposes is required.

**b. PE > 100 lb/day**

The PE2 for this new unit is compared to the daily PE Public Notice thresholds in the following table:

PE > 100 lb/day Public Notice Thresholds			
Pollutant	PE2 (lb/day)	Public Notice Threshold	Public Notice Triggered?
NO <sub>x</sub>	68.6	100 lb/day	no
SO <sub>x</sub>	168.0	100 lb/day	yes
PM <sub>10</sub>	36.1	100 lb/day	no
CO	44.6	100 lb/day	no
VOC	2.6	100 lb/day	no

Therefore, public noticing for PE > 100 lb/day purposes is required.

### c. Offset Threshold

The SSPE1 and SSPE2 are compared to the offset thresholds in the following table.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO <sub>x</sub>	94,597	113,376	20,000 lb/year	no
SO <sub>x</sub>	28,368	78,368	54,750 lb/year	yes
PM <sub>10</sub>	38,245	48,127	29,200 lb/year	No
CO	193,432	205,641	200,000 lb/year	yes
VOC	>254,323	>255,035	20,000 lb/year	No

As detailed above, offset thresholds were surpassed for SO<sub>x</sub> and CO with this project; therefore public noticing is required for offset purposes.

### d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO <sub>x</sub>	94,597	113,376	18,779	20,000 lb/year	No
SO <sub>x</sub>	28,368	78,368	50,000	20,000 lb/year	Yes
PM <sub>10</sub>	38,245	48,127	9,882	20,000 lb/year	No
CO	193,432	205,641	12,209	20,000 lb/year	No
VOC	>254,323	>255,035	712	20,000 lb/year	No

As demonstrated above, the SSIPE for SO<sub>x</sub> was greater than 20,000 lb/year; therefore public noticing for SSIPE purposes is required.

## 2. Public Notice Action

As discussed above, public noticing is required for this project. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

### D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the

maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

**Proposed Rule 2201 (DEL) Conditions:**

- Total quantity of supplemental fuel combusted in thermal oxidizer shall not exceed 9.0 MMBtu/hr. [District Rule 2201]
- Total quantity of waste gas combusted in thermal oxidizer shall not exceed 1.0 MMscf/day. [District Rule 2201]
- The total sulfur content of the natural gas shall be less than 0.00283 lb/MMBtu. [District Rule 2201]
- Maximum emissions from the thermal oxidizer shall not exceed any of the following limits: 2.86 lb-NOx/hr, 7.0 lb-SOx/hr, 1.50 lb-PM10/hr, 1.86 lb-CO/hr and 0.11 lb-VOC/hr. [District Rule 2201]

**E. Compliance Assurance**

**1. Source Testing**

- Compliance with scrubber SOx control efficiency requirement shall be demonstrated within 60 days of startup and at least once every twelve (12) months thereafter. After demonstrating compliance on two (2) consecutive annual source tests, the scrubber shall be tested not less than once every thirty-six (36) months. If the results of the applicable 36 month test demonstrates that the unit does not meet the applicable emission limits, the testing frequency shall revert to at least once every twelve (12) months [District Rule 2201] Y
- Compliance with the thermal oxidizer's VOC control efficiency requirement shall be demonstrated within 60 days of startup and at least once every twelve (12) months thereafter. After demonstrating compliance on two (2) consecutive annual source tests, testing shall be performed not less than once every thirty-six (36) months. If the results of the applicable 36 month test demonstrates that the unit does not meet the applicable requirements, the testing frequency shall revert to at least once every twelve (12) months . [District Rule 2201]

**2. Monitoring**

No monitoring is required to demonstrate compliance with Rule 2201.

**3. Recordkeeping**

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The following condition(s) are listed on the permit to operate:

- Permittee shall keep accurate weekly records natural gas supplemental fuel and waste gas combusted, and such records shall be retained for a period of five years and be made readily available for District inspection upon request. [District Rule 2520]

#### 4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

#### F. Ambient Air Quality Analysis (AAQA)

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The District's Technical Services Division conducted the required analysis. Refer to Appendix I of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO<sub>x</sub>, CO, and SO<sub>x</sub>. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO<sub>x</sub>, CO, or SO<sub>x</sub>.

Technical Services also performed modeling for criteria pollutants CO, NO<sub>x</sub>, SO<sub>x</sub> and PM<sub>10</sub>; as well as a RMR. The emission rates used for criteria pollutant modeling were 1.86 lb/hr CO, 2.86 lb/hr NO<sub>x</sub>, 7 lb/hr SO<sub>x</sub>, and 1.5 lb/hr PM<sub>10</sub>. The engineer supplied the maximum fuel rate for the IC engine used during the analysis.

The results from the Criteria Pollutant Modeling are as follows:

#### Criteria Pollutant Modeling Results\*

Diesel ICE	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO <sub>x</sub>	Pass <sup>1</sup>	X	X	X	Pass
SO <sub>x</sub>	Pass	Pass	X	Pass	Pass
PM <sub>10</sub>	X	X	X	Pass <sup>2</sup>	Pass <sup>2</sup>
PM <sub>2.5</sub>	X	X	X	Fail <sup>3</sup>	Fail <sup>3</sup>

\*Results were taken from the attached PSD spreadsheet.

<sup>1</sup>The project was compared to the 1-hour NO<sub>2</sub> National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures.

<sup>2</sup>The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

<sup>3</sup>ERC's will be surrendered by applicant to offset increase in PM emissions.

#### G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or a source undergoing a Title I Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Section VIII above, this facility is a new major source and this project does constitute a Title I modification, therefore this requirement is applicable. CUSA's compliance certification is included in Appendix J.

#### H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install a thermal oxidizer.

Since the project will provide thermal oxidizer to be used at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

### **Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination**

Rule 2410 applies to pollutants for which the District is in attainment or for unclassified, pollutants. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO<sub>2</sub> (as a primary pollutant)
- SO<sub>2</sub> (as a primary pollutant)
- CO
- PM
- PM<sub>10</sub>
- Greenhouse gases (GHG): CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, HFCs, PFCs, and SF<sub>6</sub>

The first step of this PSD evaluation consists of determining whether the facility is an existing PSD Major Source or not (See Section VII.C.5 of this document).

In the case the facility is an existing PSD Major Source, the second step of the PSD evaluation is to determine if the project results in a PSD significant increase.

In the case the facility is NOT an existing PSD Major Source but is an existing source, the second step of the PSD evaluation is to determine if the project, by itself, would be a PSD major source.

In the case the facility is new source, the second step of the PSD evaluation is to determine if this new facility will become a new PSD major Source as a result of the project and if so, to determine which pollutant will result in a PSD significant increase.

#### **I. Project Location Relative to Class 1 Area**

As demonstrated in the "PSD Major Source Determination" Section above, the facility was determined to be a existing major source for PSD. Because the project is not located within 10 km of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

#### **II. Significance of Project Emission Increase Determination**

##### **a. Potential to Emit of attainment/unclassified pollutant for New or Modified Emission Units vs PSD Significant Emission Increase Thresholds**

As a screening tool, the potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if total



potential to emit from all new and modified units is below this threshold, no further analysis will be needed.

<b>PSD Significant Emission Increase Determination: Potential to Emit (tons/year)</b>						
	NO2	SO2	CO	PM	PM10	CO2e
Total PE from New and Modified Units	9	25	6	5	5	21,247
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000
PSD Significant Emission Increase?	n	n	n	n	n	n

As demonstrated above, because the project has a total potential to emit from all new and modified emission units below the PSD significant emission increase thresholds, this project is not subject to the requirements of Rule 2410 due to a significant emission increase and no further discussion is required.

#### **Rule 2520 - Federally Mandated Operating Permits**

CUSA is a major stationary source subject to Rule 2520 with a Title V permit. This modification is classified as a Title V significant modification pursuant to Rule 2520, Section 3.29, and can be processed with a Certificate of Conformity (COC). The facility has requested that this project be processed in that manner. Therefore, compliance with this rule is expected.

#### **Rule 4102 Nuisance**

Rule 4102 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected.

#### **California Health & Safety Code 41700 (Health Risk Assessment)**

An HRA is not required for a project with a total facility prioritization score of less than or equal to one. According to the Technical Services Memo for this project (**Appendix I**), the total facility prioritization score including this project was less than or equal to one. Therefore, no future analysis is required to determine the impact from this project and compliance with the District's Risk Management Policy is expected.

To ensure that human health risks will not exceed District allowable levels; the following permit conditions must be included for:

Unit # 316-0

1. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
2. SOx emissions are not exceed 7 lbs/hr and 50,000 lbs/yr.

#### **Discussion of T-BACT**

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the HRA indicates that the risk is not above the District's thresholds for triggering T-BACT requirements; therefore, compliance with the District's Risk Management Policy is expected.

#### **Rule 4201 Particulate Matter Concentration**

This rule limits particulate matter emissions to 0.1 grains per dry standard cubic foot. Particulate matter emissions from fuel combustion equipment are assumed to be 10 microns or less in size (PM10). PM emissions are less than 0.1 grain per cubic foot of gas at dry standard conditions as shown by the following:

$$\begin{aligned} \text{PM Conc.} &= (\text{Emission rate}) \times (\text{lb to gr conversion}) / (\text{F factor}) \\ &= (0.073 \text{ lb/MMBtu}) \times (7,000 \text{ gr/lb}) / (10,110 \text{ dscf/MMBtu}) \\ &= 0.05 \text{ gr/dscf} \end{aligned}$$

Therefore, compliance with this rule is expected.

#### **Rule 4401 Steam Enhances Crude Oil Production Wells**

The thermal oxidizer serves as a control device for wells subject to Rule 4401. The expected VOC control efficiency is 99.9%; therefore, compliance with the requirements of rule 4401 section 5.1.1 is expected.

The VOC content of the waste gas combusted in the thermal oxidizer is less than 10% by weight. Therefore, per section 4.7 the inspection and reinspection requirements of Section 5.4.1 through 5.4.7 so not apply to components associated with the thermal oxidizer.

See representative gas sample Appendix E.

#### **Rule 4409 Components at Light Curde Oil Production Facilities, Natural Gas Production Facilities, and Natural Gas Processing Facilities**

Per section 2.0 this rule applies to components at light crude oil production facilities, natural gas production facilities and natural gas processing facilities.

Per section 3.22 light crude oil is crude oil with API gravity equal to or greater than 30 degrees. Lost Hills crude is slightly above 20 API gravity. Lost Hills crude is less than 30 degrees API gravity. Therefore, the facility is not a light crude oil production facility. It is not a natural gas processing facility per section 3.25. It is not a natural gas production facility per section 3.26.

Therefore, the components associated with the thermal oxidizer are not subject to Rule 4409.

### **Rule 4801 Sulfur Compounds**

This rule limits sulfur compounds emissions at the point of discharge is 0.2 percent by volume, 2,000 ppmv, calculated as sulfur dioxide (SO<sub>2</sub>), on a dry basis averaged over 15 consecutive minutes.

Based on manufacturer's information the thermal oxidizer will emit sulfur compounds uncontrolled at 3222 ppmv SO<sub>2</sub> and H<sub>2</sub>O content is 57,765 ppm (see Appendix F). SO<sub>2</sub> control efficiency is 97.5%. SO<sub>2</sub> on a dry basis:

$$3222 \text{ ppmv SO}_2 \times 0.025 \times [(1000000)/(1000000-57765)] = 85 \text{ ppmv dry}$$

Therefore, sulfur compounds emissions at the point of discharge are not expected to exceed 0.2 percent by volume, 2,000 ppmv, calculated as sulfur dioxide (SO<sub>2</sub>), on a dry basis averaged over 15 consecutive minutes. Therefore, compliance with this rule is expected.

### **California Health & Safety Code 42301.6 (School Notice)**

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

### **Rule 4311 - Flares**

This rule limits the emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NO<sub>x</sub>) from the operation of flares that are owned and operated by major sources.

Per section 3.11 a flare is not equipped with devices for fuel-air mix control or for temperature control. The thermal oxidizer is equipped with devices for temperature control. Therefore, this rule does not apply.

### **California Environmental Quality Act (CEQA)**

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

**Greenhouse Gas (GHG) Significance Determination**

It is determined that no other agency has or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project.

Facilities subject to the Cap and Trade regulation are subject to an industry-wide cap on overall GHG emissions. As such, any growth in emissions must be accounted for under that cap such that a corresponding and equivalent reduction in emissions must occur to allow any increase. Therefore, it is reasonable to conclude that implementation of the Cap and Trade program will and must fully mitigate project-specific GHG emissions.

Regardless of, and independent to, the above significance determination, the District finds that, through compliance with the Cap and Trade regulation, project-specific GHG emissions would be fully mitigated. The District therefore concludes that projects occurring at facilities subject to ARB's Cap and Trade regulation would have a less than significant individual and cumulative impact on global climate change.

Facility S-2010 is subject to the Cap and Trade regulation. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

**District CEQA Findings**

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15031 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

**IX. Recommendation**

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATCs S-2010-308-1 and '316-0 subject to the permit conditions on the attached draft ATC in Appendix M.

**X. Billing Information**

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-2010-308-1	3020-09-B	130 wells	\$1214.20
S-2010-316-0	3020-02-G	9.0 MMbtu/hr	\$815

**APPENDIX A**  
**Quarterly Net Emissions Change (QNEC)**

**Quarterly Net Emissions Change (QNEC)**

The Quarterly Net Emissions Change is used to complete the emission profile screen for the District's PAS database. The QNEC shall be calculated as follows:

QNEC = PE2 - PE1, where:

- QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
- PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.
- PE1 = Pre-Project Potential to Emit for each emissions unit, lb/qtr.

Using the values in Sections VII.C.2 and VII.C.6 in the evaluation above, quarterly PE2 and quarterly PE1 can be calculated as follows:

$PE2_{quarterly} = PE2_{annual} \div 4 \text{ quarters/year}$   
 $PE1_{quarterly} = PE1_{annual} \div 4 \text{ quarters/year}$

<b>S-2010-308-1</b>					
<b>Quarterly NEC [QNEC]</b>					
	PE2 (lb/yr)	PE2 (lb/qtr)	PE1 (lb/yr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO <sub>x</sub>	0	0	0	0	
SO <sub>x</sub>	0	0	0	0	
PM <sub>10</sub>	0	0	0	0	
CO	0	0	0	0	
VOC	34,517	8629	34,517	8629	0

<b>S-2010-316-0</b>					
<b>Quarterly NEC [QNEC]</b>					
	PE2 (lb/yr)	PE2 (lb/qtr)	PE1 (lb/yr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO <sub>x</sub>	18,779	4,695	0	0	4,695
SO <sub>x</sub>	50,000	12,500	0	0	12,500
PM <sub>10</sub>	9,882	2,471	0	0	2,471
CO	12,209	3,052	0	0	3,052
VOC	712	178	0	0	178

Permit #: S-2010-308-1	Last Updated
Facility: CHEVRON USA INC	01/01/2013 TORID

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	34517.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	94.6
Quarterly Net Emissions Change (lb/Qtr)					
Q1:					0.0
Q2:					0.0
Q3:					0.0
Q4:					0.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-2010-316-0	Last Updated
Facility: CHEVRON USA INC	01/01/2013 TORID

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	18779.0	50000.0	9882.0	12209.0	712.0
Daily Emis. Limit (lb/Day)	68.6	283.4	36.1	44.6	2.6
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	4695.0	12500.0	2471.0	3052.0	178.0
Q2:	4695.0	12500.0	2171.0	3052.0	178.0
Q3:	4695.0	12500.0	2471.0	3052.0	178.0
Q4:	4695.0	12500.0	2471.0	3052.0	178.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					



**APPENDIX B**  
**ATC S-2010-308-0**



## AUTHORITY TO CONSTRUCT

PERMIT NO: S-2010-308-0

ISSUANCE DATE: 04/28/2011

LEGAL OWNER OR OPERATOR: CHEVRON USA INC  
MAILING ADDRESS: PO BOX 1392  
BAKERSFIELD, CA 93302

LOCATION: LIGHT OIL WESTERN STATIONARY SOURCE  
CA

SECTION: 29 TOWNSHIP: 26S RANGE: 21E

**EQUIPMENT DESCRIPTION:**

TEOR SYSTEM WITH UP TO 130 STEAM ENHANCED WELLS OPERATED WITH CLOSED CASING VENTS, PERMIT EXEMPT WELL TESTERS, PRESSURE VESSELS, RELIEF TANK, AND MASTER TRAP(S) VENTED TO H2S REMOVAL SYSTEM AND THE FIELD GAS GATHERING PIPELINE

## CONDITIONS

1. This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Construction related nitrogen oxides (NOx) emissions will be mitigated by surrendering Emission Reduction Credits (ERCs) for 2.58 tons of NOx emissions. ERCs must be surrendered to the District prior to any ground disturbance activities. [Public Resources Code 21000-21177; California Environmental Quality Act]
4. Within 30 days before any ground disturbance activities on the project site, a qualified registered biologist shall conduct a focused survey to determine the presence/absence of potential impacts on sensitive species on-site. The survey shall be conducted in accordance with the standard protocol of U.S. Fish and Wildlife Service (USFWS) & California Department of Fish & Game (CDFG). [Public Resources Code 21000-21177; California Environmental Quality Act]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5600 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director / APCO

5. Within 30 days before any ground disturbance activities on the project site, a qualified registered biologist shall conduct a focused survey to determine the presence/absence of potential impacts on sensitive species and riparian habitat. [Public Resources Code 21000-21177: California Environmental Quality Act]
6. Within 30 days before any ground disturbance activities on the project site occur, a qualified registered biologist shall conduct a focused survey to determine the presence/absence of potential impacts on the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites. [Public Resources Code 21000-21177: California Environmental Quality Act]
7. Should archaeological resources be identified on the project site during any ground disturbing activities related to the project, all ground disturbing activities within 100 feet of the discovery shall cease. Chevron USA, Inc. shall notify and retain a qualified archaeologist to provide an evaluation of the find. Chevron USA, Inc. shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on the project site once the evaluation of the find is complete by the qualified archaeologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
8. Should paleontological resources be identified on the project site during any ground disturbing activities related to the project, all ground disturbing activities within 100 feet of the discovery shall cease. Chevron USA, Inc. shall notify and retain a qualified paleontologist to provide an evaluation of the find. Chevron USA, Inc. shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery) shall be instituted. Work may proceed on the project site once the evaluation of the find is complete by the qualified paleontologist. [Public Resources Code 21000-21177: California Environmental Quality Act]
9. Operation of H<sub>2</sub>S scrubber is optional. [District Rule 2201] Federally Enforceable Through Title V Permit
10. During the time any steam-enhanced crude oil production well is undergoing service or repair while the well is not producing, it shall be exempt from the emission control requirements of District Rule 4401, 5.0 (as amended December 14, 2006). [District Rule 4401, 4.1] Federally Enforceable Through Title V Permit
11. Emissions rate of VOC associated with the fugitive emissions from TEOR system and ancillary equipment 94.6 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Production from TEOR operation shall be sent only to tanks equipped with 99% vapor control. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
13. This permit authorizes 10 leaks exceeding an instrument reading of 10,000 ppmv. Leaks greater in number than 10 and exceeding 10,000 ppmv are a violation of this permit. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
14. Except as otherwise provided in this permit, casing vent valves shall be closed and plugged. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
15. Permittee shall maintain records of the date and well identification where steam injection or well stimulation occurs, current list of all thermally enhanced production wells associated with this operation, permit numbers of tanks receiving production from the TEOR operation, leak inspection results, and accurate fugitive component counts of components in gas service and resulting emissions calculated using the emission factors in the CAPCOA California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities, Table IV-2c, Oil and Gas Production Screening Value Ranges Emission Factors (Feb 1999) . [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
16. Gas and liquid leaks are as defined in Section 3.20 of Rule 4401. [District Rule 4401 3.20] Federally Enforceable Through Title V Permit

17. An operator shall not operate a steam-enhanced crude oil production well unless the operator complies with either of the following requirements: The steam-enhanced crude oil production well vent is closed and the front line production equipment downstream of the wells that carry produced fluids (crude oil or mixture of crude oil and water) is connected to a VOC collection and control system as defined in Section 3.0 of Rule 4401, the well vent may be temporarily opened during periods of attended service or repair of the well provided such activity is done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere, or the steam-enhanced crude oil production well vent is open and the well vent is connected to a VOC collection and control system as defined in Section 3.0 of Rule 4401. [District Rule 4401, 5.5.1 and 5.5.2] Federally Enforceable Through Title V Permit
18. An operator shall be in violation of this rule if any District inspection demonstrates or if any operator inspection conducted pursuant to Section 5.8 of Rule 4401 demonstrates the existence of an open-ended line or a valve located at the end of the line that is not sealed with a blind flange, plug, cap, or a second closed valve that is not closed at all times, except during attended operations as defined by Section 5.6.2.1 of Rule 4401 requiring process fluid flow through the open-ended lines, a component with a major liquid leak, or a component with a gas leak greater than 50,000 ppmv. [District Rule 4401 5.6.2] Federally Enforceable Through Title V Permit
19. An operator shall be in violation of this rule if any District inspection demonstrates or if any operator inspection conducted pursuant to Section 5.8 of Rule 4401 demonstrates the existence of any combination of components with minor liquid leaks, minor gas leaks, or a gas leaks greater than 10,000 ppmv up to 50,000 ppmv that totals more than number of leaks allowed by Table 3 of Rule 4401. [District Rule 4401 5.6.2] Federally Enforceable Through Title V Permit
20. An operator shall not use any component with a leak as defined in Section 3.0 of Rule 4401, or that is found to be in violation of the provisions of Section 5.6.2 of Rule 4401. However, components that were found leaking may be used provided such leaking components have been identified with a tag for repair, are repaired, or awaiting re-inspection after being repaired within the applicable time frame specified in Section 5.9 of Rule 4401. [District Rule 4401 5.7.1] Federally Enforceable Through Title V Permit
21. Each hatch shall be closed at all times except during sampling or adding of process material through the hatch, or during attended repair, replacement, or maintenance operations, provided such activities are done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere. [District Rule 4401 5.7.2] Federally Enforceable Through Title V Permit
22. An operator shall comply with the requirements of Section 6.7 of Rule 4401 if there is any change in the description of major components or critical components. [District Rule 4401 5.7.3] Federally Enforceable Through Title V Permit
23. Except for pipes and unsafe-to-monitor components, an operator shall inspect all other components pursuant to the requirements of Section 6.3.3 of Rule 4401 at least once every year. [District Rule 4401 5.8.1] Federally Enforceable Through Title V Permit
24. An operator shall visually inspect all pipes at least once every year. Any visual inspection of pipes that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected within 24 hours after detecting the leak. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 4 of Rule 4401. [District Rule 4401 5.8.2] Federally Enforceable Through Title V Permit
25. In addition to the inspections required by Section 5.8.1 of Rule 4401, an operator shall inspect for leaks all accessible operating pumps, compressors, and PRDs in service as follows: An operator shall audio-visually (by hearing and by sight) inspect for leaks all accessible operating pumps, compressors, and PRDs in service at least once each calendar week. Any audio-visual inspection of an accessible operating pump, compressor, and PRD performed by an operator that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected not later than 24 hours after conducting the audio-visual inspection. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 4 of Rule 4401. [District Rule 4401 5.8.3] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

26. In addition to the inspections required by Sections 5.8.1, 5.8.2 and 5.8.3 of Rule 4401, operator shall perform the following: initially inspect a PRD that releases to the atmosphere as soon as practicable but not later than 24 hours after the discovery of the release, re-inspect the PRD not earlier than 24 hours after the initial inspection but not later than 15 calendar days after the initial inspection, inspect all new, replaced, or repaired fittings, flanges, and threaded connections within 72 hours of placing the component in service. Except for PRDs subject to the requirements of Section 5.8.4.1 of Rule 4401, an operator shall inspect a component that has been repaired or replaced not later than 15 calendar days after the component was repaired or replaced. [District Rule 4401 5.8.4] Federally Enforceable Through Title V Permit
27. An operator shall inspect all unsafe-to-monitor components during each turnaround. [District Rule 4401 5.8.5] Federally Enforceable Through Title V Permit
28. District inspection in no way fulfills any of the mandatory inspection requirements that are placed upon operators and cannot be used or counted as an inspection required of an operator. [District Rule 4401 5.8.6] Federally Enforceable Through Title V Permit
29. An operator shall affix a readily visible weatherproof tag to a leaking component upon detection of the leak and shall include the following information on the tag: date and time of leak detection, date and time of leak measurement, for a gaseous leak, the leak concentration in ppmv, for a liquid leak, whether it is a major liquid leak or a minor liquid leak, whether the component is an essential component, an unsafe-to monitor component, or a critical component. [District Rule 4401 5.9.1] Federally Enforceable Through Title V Permit
30. An operator shall keep the tag affixed to the component until an operator has met all of the following conditions: repaired or replaced the leaking component, re-inspected the component using the test method in Section 6.3.3, and 5.9.2.3 of Rule 4401, or the component is found to be in compliance with the requirements of this rule. [District Rule 4401 5.9.2] Federally Enforceable Through Title V Permit
31. An operator shall minimize a component leak in order to stop or reduce leakage to the atmosphere immediately to the extent possible, but not later than one (1) hour after detection of the leak. [District Rule 4401 5.9.3] Federally Enforceable Through Title V Permit
32. Except for leaking critical components or leaking essential components subject to the requirements of Section 5.9.7 of Rule 4401, if an operator has minimized a leak but the leak still exceeds the applicable leak limits as defined in Section 3.0 of Rule 4401, an operator shall comply with at least one of the following requirements as soon as practicable but not later than the time period specified in Table 4 of Rule 4401: Repair or replace the leaking component; or vent the leaking component to a VOC collection and control system as defined in Section 3.0 of Rule 4401, or remove the leaking component from operation. [District Rule 4401 5.9.4] Federally Enforceable Through Title V Permit
33. The repair period in calendar days shall not exceed 14 days for minor gas leaks, 5 days for major gas leaks less than or equal to 50,000 ppmv, 2 days for gas leak greater than 50,000 ppmv, 3 days for minor liquid leaks, 2 days for major liquid leaks. [District Rule 4401 5.9.4] Federally Enforceable Through Title V Permit
34. The leak rate measured after leak minimization has been performed shall be the leak rate used to determine the applicable repair period specified in Table 4 of Rule 4401. [District Rule 4401 5.9.5] Federally Enforceable Through Title V Permit
35. The time of the initial leak detection shall be the start of the repair period specified in Table 4 of Rule 4401. [District Rule 4401 5.9.6] Federally Enforceable Through Title V Permit
36. If the leaking component is an essential component or a critical component that cannot be immediately shut down for repairs, and if the leak has been minimized but the leak still exceeds the applicable leak standard of this rule, the operator shall repair or replace the essential component or critical component to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection, whichever comes earlier. [District Rule 4401 5.9.7] Federally Enforceable Through Title V Permit
37. The operator of any steam-enhanced crude oil production well shall maintain records of the date and well identification where steam injection or well stimulation occurs. [District Rule 4401 6.1.1] Federally Enforceable Through Title V Permit

38. An operator of any steam-enhanced crude oil production well shall keep source test records which demonstrate compliance with the control efficiency requirements of the VOC collection and control system as defined in Section 3.0 of Rule 4401. [District Rule 4401 6.1.3] Federally Enforceable Through Title V Permit
39. The results of source tests conducted pursuant to Section 4.6.2 of Rule 4401 shall be submitted to the APCO within 60 days after the completion of the source test. [District Rule 4401 6.1.4] Federally Enforceable Through Title V Permit
40. Operator of any steam-enhanced crude oil production well shall keep an inspection log maintained pursuant to Section 6.4 of Rule 4401. [District Rule 4401 6.1.5] Federally Enforceable Through Title V Permit
41. Records of each calibration of the portable hydrocarbon detection instrument utilized for inspecting components, including a copy of current calibration gas certification from the vendor of said calibration gas cylinder, the date of calibration, concentration of calibration gas, instrument reading of calibration gas before adjustment, instrument reading of calibration gas after adjustment, calibration gas expiration date, and calibration gas cylinder pressure at the time of calibration shall be maintained. [District Rule 4401 6.1.6] Federally Enforceable Through Title V Permit
42. An operator shall maintain copies at the facility of the training records of the training program operated pursuant to Section 6.5 of Rule 4401. [District Rule 4401 6.1.7] Federally Enforceable Through Title V Permit
43. Operator shall keep a copy of the APCO-approved Operator Management Plan at the facility. [District Rule 4401 6.1.8] Federally Enforceable Through Title V Permit
44. An operator that discovers that a PRD has released shall record the date that the release was discovered, and the identity and location of the PRD that released. An operator shall submit such information recorded during the calendar year to the APCO no later than 60 days after the end of the calendar year. [District Rule 4401 6.1.11] Federally Enforceable Through Title V Permit
45. An operator shall source test annually all vapor collection and control systems used to control emissions from steam-enhanced crude oil production well vents to determine the control efficiency of the device(s) used for destruction or removal of VOC. Compliance testing shall be performed annually by source testers certified by ARB. Testing shall be performed during June, July, August, or September of each year if the system's control efficiency is dependent upon ambient air temperature. [District Rule 4401 6.2.1] Federally Enforceable Through Title V Permit
46. If approved by EPA, ARB, and the APCO, an operator need not comply with the annual testing requirement of Section 6.2.1 if all uncondensed VOC emissions collected by a vapor collection and control system are incinerated in fuel burning equipment, an internal combustion engine or in a smokeless flare. [District Rule 4401 6.2.2] Federally Enforceable Through Title V Permit
47. If approved by EPA, ARB, and the APCO, an operator need not comply with the annual testing requirement of Section 6.2.1 for a vapor control system which does not have a VOC destruction device. [District Rule 4401 6.2.3] Federally Enforceable Through Title V Permit
48. An operator seeking approval pursuant to Section 6.2.2 or Section 6.2.3 shall submit a written request and supporting information to the APCO. The District shall evaluate the request and if approved by the APCO, the District shall provide EPA and ARB with a copy of the evaluation and shall request EPA and ARB approval. The District evaluation and the APCO request shall be deemed approved unless EPA or ARB objects to such approval in writing within 45 days of the receipt of the APCO request. [District Rule 4401 6.2.4] Federally Enforceable Through Title V Permit
49. The control efficiency of any VOC control device, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case EPA Method 25a may be used. EPA Method 18 may be used in lieu of EPA Method 25 or EPA Method 25a provided the identity and approximate concentrations of the analytes/compounds in the sample gas stream are known before analysis with the gas chromatograph and the gas chromatograph is calibrated for each of those known analyte/compound to ensure that the VOC concentrations are neither under- or over-reported. [District Rule 4401 6.3.1] Federally Enforceable Through Title V Permit
50. VOC content shall be analyzed by using the latest revision of ASTM Method E168, E169, or E260 as applicable. Analysis of halogenated exempt compounds shall be performed by using ARB Method 432. [District Rule 4401 6.3.2] Federally Enforceable Through Title V Permit

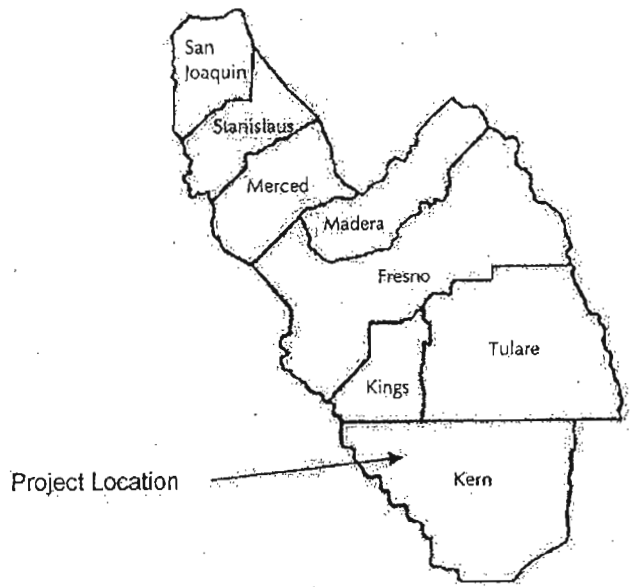
CONDITIONS CONTINUE ON NEXT PAGE

51. Leak inspection, other than audio-visual, and measurements of gaseous leak concentrations shall be conducted according to EPA Method 21 using an appropriate portable hydrocarbon detection instrument calibrated with methane. The instrument shall be calibrated in accordance with the procedures specified in EPA Method 21 or the manufacturer's instruction, as appropriate, not more than 30 days prior to its use. The operator shall record the calibration date of the instrument. Where safety is a concern, such as measuring leaks from compressor seals or pump seals when the shaft is rotating, a person shall measure leaks by placing the instrument probe inlet at a distance of one (1) centimeter or less from the surface of the component interface. [District Rule 4401 6.3.3] Federally Enforceable Through Title V Permit
52. The VOC content by weight percent (wt.%) shall be determined using American Society of Testing and Materials (ASTM) D1945 for gases and South Coast Air Quality Management District (SCAQMD) Method 304-91 or the latest revision of ASTM Method E168, E169 or E260 for liquids. [District Rule 4401 6.3.5] Federally Enforceable Through Title V Permit
53. Operator shall maintain an inspection log in which an operator records, at a minimum, all of the following information for each inspection performed: The total number of components inspected, total number and percentage of leaking components found by component type, location, type, and name or description of each leaking component and description of any unit where the leaking component is found, date of leak detection and the method of leak detection. For gaseous leaks, the leak concentration in ppmv, and for liquid leaks record whether the leak is a major liquid leak or a minor liquid leak. the date of repair, replacement, or removal from operation of leaking components, identify and location of essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier, methods used to minimize the leak from essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier, the date of re-inspection and the leak concentration in ppmv after the component is repaired or is replaced, the inspector's name, business mailing address, and business telephone number, date and signature of the facility operator responsible for the inspection and repair program certifying the accuracy of the information recorded in the log. [District Rule 4401 6.4] Federally Enforceable Through Title V Permit
54. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 8,629 lb-VOC/Q1, 8,629 lb-VOC/Q2, 8,629 lb-VOC/Q3, and 8,629 lb-VOC/Q4. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). [District Rule 2201] Federally Enforceable Through Title V Permit
55. ERC Certificate Number S-3222-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

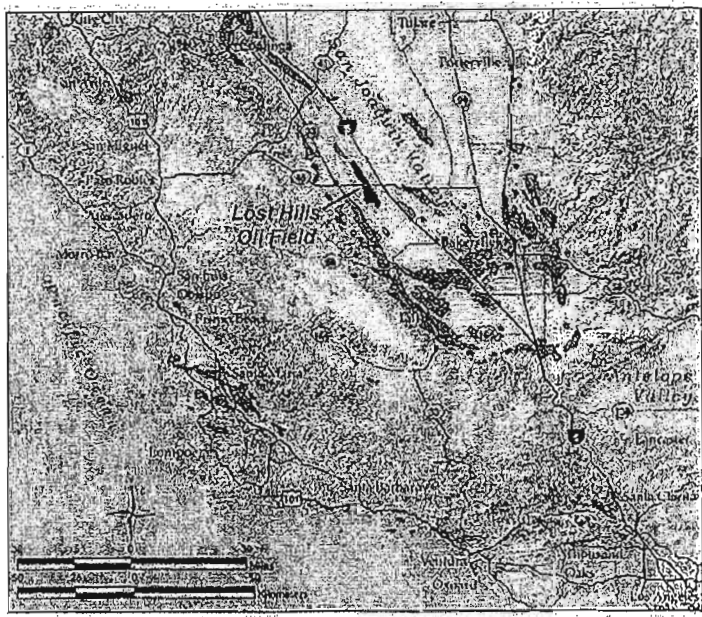
**APPENDIX C**  
**Location Maps**



**Figure 1: The San Joaquin Valley Air Basin**



**Figure 2: Lost Hills Oilfield**

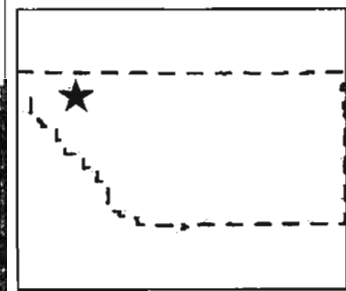


Map provided by Wikipedia. July 2010. Website: [http://en.wikipedia.org/wiki/Lost\\_Hills\\_Oil\\_Field](http://en.wikipedia.org/wiki/Lost_Hills_Oil_Field)



**Kern County**  
Online Mapping System

# Kern County Online Mapping



### Legend

**Roads**

- Arterial
- Collector
- Highway
- Local
- Ramp
- Unpaved

County of Kern

Townships

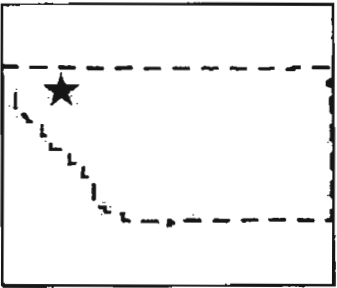
Sections

Aerial Photography 2008

---

Scale: 1:73,410

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.



### Legend

**Roads**

- Arterial
- Collector
- Highway
- Local
- Ramp
- Unpaved

County of Kern

Townships

Sections

Aerial Photography 2008

---

Scale: 1:29,364

23

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

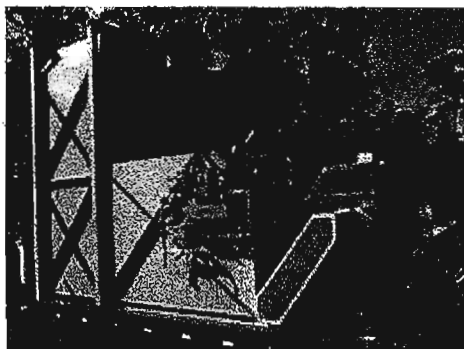
**APPENDIX D**  
**Manufacturer's Information**

## Industrial Afterburners



Epcon is an industry leader in **Industrial Afterburner** technology and can build a custom unit for stand alone or trailer mounted applications. We also offer different purchase/lease/rental agreements to suit any need.

For more information on Industrial Afterburners, [view a case study by clicking here.](#)



**Afterburners** are ideal solutions for high solvent loading and fluctuating operating conditions. Flame arrestors are always installed between the vapor source and the **thermal oxidizer**. Burner capacities in the combustion chamber range from 0.5 to 2 mmBtuH.

Operating temperatures range from 1,250 to 1,800°F, and gas residence times are typically 1 second or less. These conditions cause the process stream's molecular structure to break down into simple carbon dioxide and water vapor.

**Thermal Oxidizers** may also be called **Afterburners** or direct flame thermal oxidizers. Thermal oxidation is a method of air pollution control that can be applied to incineration for air polluted with small particles or combustible solids or liquids. Catalytic oxidization is an off-gas post treatment unit for control of organic compounds.

MAILING ADDRESS  
P.O. Box 7060  
The Woodlands, Texas 77387  
Phone: (936) 273-3300



PLANT ADDRESS  
17777 I-45 South  
Conroe, Texas 77385  
Fax: (936) 273-4600

**EPCON INDUSTRIAL SYSTEMS LP**

October 30, 2012

**PCL Industrial Services, Inc.**  
1500 S. Union Ave.  
Bakersfield, CA 93307

Ph.: 661-835-4444  
Email: [JJKerchinski@pcl.com](mailto:JJKerchinski@pcl.com)

Attn.: John Kerchinski

**Proposal # 12V-101 Rev. 03**

Subject: 15,000 SCFM Direct Fired Thermal Oxidizer.

Dear Mr. Kerchinski,

EPCON® Industrial Systems, LP is pleased to submit this revised proposal for your consideration. This proposal has been prepared accordance with your specifications. The systems will be engineered, designed, and manufactured at EPCON®'s manufacturing facility in Conroe, TX.

For over thirty-five years, Epcon® has been providing state-of-the-art technology to custom design, manufacture and install Air Pollution Control Systems (LINK) such as Thermal Oxidizers (LINK) , Industrial Ovens (LINK), Process Heating Systems (LINK) and Finishing Systems (LINK) to a variety of industries such as Petrochemical, Pharmaceutical and Aerospace, to name a few. Epcon® has a history of exceeding the demands of clients from every industry.

- Under this proposal EPCON® shall supply 15,000 SCFM Afterburner with the following

Each shall include:

- Burner System
- Combustion Air Fan
- Process Piping
- Dilution Air Fan
- Main Gas Train (pre-piped and pre-wired)
- Pilot Gas Train (pre-piped and pre-wired)
- NEMA- 4 Control Panel for Oxidizer
- Safety interlocks

*AIR POLLUTION & HEAT PROCESSING SYSTEMS  
THERMAL & CATALYTIC OXIDIZERS \* AFTER BURNERS \* INDUSTRIAL OVENS & FURNACES*



---

**EPCON® MAKES A DIFFERENCE**

## HISTORY

- Epcon® Industrial Systems, LP was founded in 1976.
- Epcon® has an impeccable reputation in the industry.
- Epcon® is a leader in the industry, and prides itself on its leading-edge technology.
- Epcon® employs highly educated, skilled and experienced employees at all levels.

## LOCATION/PLANT

- Epcon® has its own 150,000 sq. ft. modern manufacturing facility, equipped with state-of-the-art fabricating machinery.
- Epcon® systems are designed, manufactured, and tested under one roof -- from concept to completion.
- Epcon® is conveniently located on Interstate 45, the main highway between Houston and Dallas and is close to the Port of Houston.

## EPCON®'S FINANCIAL HEALTH

- **Epcon® is a financially sound and stable company, has no debts and carries a large line of credit with Bank of America.**
- **The entire facility is all paid for; no long term debts.**
- **Epcon® carries highest credit rating.**
- **Epcon® has open credit, of large sums, from its suppliers.**

## CORE VALUES AND BELIEFS

- Epcon® treats its employees, suppliers and customers, on an equal basis ...
- always seeking 100% customer satisfaction.
- Epcon® stands 100% behind every product manufactured.
- Epcon® always delivers on time and more than we promise.
- Epcon® is extremely flexible in working with customer requirements.



## CUSTOMER SERVICE

- Epcon® is always seeking the customers' full satisfaction.
- Epcon® employees are empowered to do anything to please the customer.
- Epcon® is always seeking new ways to better serve its customers.
- Epcon® has a long list of happy and satisfied customers and a majority of our business is repeats business.

## DIFFERENTIATION

- Epcon® specializes in designing and building "uncommon systems for uncommon applications."
- Epcon® delivers on-time, quality, cost-effective products and services to its customers.
- Epcon®'s systems are dependable; because we use highly reliable components and the design approach is very conservative ... we pay attention to details.
- Each system is designed to meet the customer's specific process requirements.
- Epcon® has experienced Engineers with Master's and Bachelor's degrees in Mechanical and Chemical Engineering, who provide the highest level of Engineering and Manufacturing of custom-engineered manufactured systems for its customers.
- **Epcon® designs and builds UL listed control panels.**
- **Our own manufacturing facility allows:**
  - **Control over the production and delivery schedule**
  - **High quality standards maintained**
- **Epcon® designs and builds UL listed control panels.**
- **Most systems are preassembled at Epcon®'s plant and undergo rigorous quality checks and Factory Testing prior to shipment.**
- **Fabrication, Assembly and Factory Acceptance Testing all under the same roof.**
- **Turnkey Installation.**





## 1.0 GENERAL

This proposal is for a standard 15,000 SCFM Afterburner package designed to treat the process gas stream described as under.

Assumption:

Total Process Flow: 0-1000 MSCFD (0-694.45 SCFM)

Required Dilution Air: 14,305.55 SCFM

Total Oxidizer Design Flow: 15,000 SCFM

H<sub>2</sub>S Concentration: 100-55,000 PPMV

Total Sulfur as H<sub>2</sub>S: 100-60,000 PPMV

Methane Content: 10-75 mol%

CO<sub>2</sub> Content: 20-85 mol%

Process Inlet Temperature: 70-240 °F

Process Pressure: 0.5 Psig required.

Operating Temperature: 1500-1600 °F

Residence Time: 1.0+ Seconds

Designed DRE: 99.99% of NMHC or 20 PPMV which ever less stringent.

## 2.0 PERFORMANCE

- ◆ The system will be designed for a destruction removal efficiency (DRE) of 99.99% of NMHC or 20 ppmv whichever is less stringent for volatile organic compounds (VOC's) based on the code of Federal Regulations, Title 40 – Protection of Environment, Chapter 1 – Environmental Protection Agency – Subchapter C – Air Programs, Part 60 – Standards of performance for new stationary sources, Appendix A – Test Methods, Method 25A – Determination of total gaseous organic concentration using a flame ionization analyzer and based on the maximum hydrocarbon loading as per section 1.0.
- ◆ System performance, any and all guarantee and warranties are based on the information furnished to Epcon® regarding VOC or solvent loading, solvent types (type of VOC's). If any changes or modification to the system or in the process, operation, and solvent types occur it invalidates all performance guarantees and the warranty shall be null and void. Buyer assumes all the liabilities of the system malfunctioning or not achieving the DRE requirements. These changes may result in an explosion causing bodily injury and or property damage. Epcon® shall be held harmless and free of any and all liabilities



### 3.0 SCOPE OF SUPPLY

3.1 The Afterburner will be provided with the following:

3.1.1 Burner System

3.1.2 Combustion air blower

3.1.3 Process Piping

3.1.4 Dilution Air Blower

3.1.5 Choke and ring to insure proper mixing and create high turbulence to achieve higher rate of destruction efficiency

3.1.6 Main Gas Train (pre-piped and pre-wired)

3.1.7 Pilot Gas Train (pre-piped and pre-wired)

3.1.8 NEMA- 4 Control Panel with Chart Recorder for Oxidizer.

### 4.0 COMBUSTION / RETENTION CHAMBER

4.1 Residence Time: 1.0+ seconds

4.2 Operating Temperature: 1500 - 1600 °F (or sufficient to achieve the desired destruction efficiency).

4.3 Turbulence shall be sufficient to achieve the desired temperature profile.

4.4 Materials of construction

4.4.1 Outer shell: 10 Ga. thick 316/316L Stainless Steel

4.4.2 Structural reinforcements as required to withstand the systems static pressure, load, and wind forces.

4.4.3 Insulation: ceramic fiber block insulation, 2,200 °F rated

4.4.4 Insulation thickness shall be sufficient to limit the shell temperature to be less than 70°F above the ambient temperature with a 5 mph wind speed.

4.5 Personnel access to the inside is provided via a man-way door for inspection purposes.



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5.0 BURNER

- 5.1 One (1) 9.0 MMBTUH Maxon "Kinedizer LE" burner (or equal) with 20:1 turndown will operate on natural gas.
- 5.2 Sizing shall be for a maximum burner output of 9.0 MMBTUH total. During the process gas treatment mode the burner will utilize its thermal turndown to adjust to varying conditions as determined by the temperature controller.
- 5.3 A regulator will reduce the incoming natural gas pressure from 10.0 psig to the required operating pressure at the burner.

6.0 COMBUSTION AIR FAN

- 6.1 Capacity: 2,500 SCFM
- 6.2 Type: New York Blower (or Equal)
- 6.3 Motor: 20 HP, TEFC (480V/3PH/60HZ)

7.0 DILUTION AIR FAN

- 7.1 Capacity: 15,000 SCFM
- 7.2 Type: New York Blower (or Equal)
- 7.3 Motor: 40 HP, TEFC (480V/3PH/60HZ)

8.0 VARIABLE FREQUENCY DRIVE (SEPARATELY PRICED)

The variable frequency drive shall be housed in the control panel, or free-standing by the panel. The VFD shall adjust the fan capacity as per the temperature inside the oxidizer. The variable frequency drive shall increase the RPM of the fan as the temperature increases.

The drive is a microprocessor based adjustable frequency drive, designed to provide exceptional reliability when controlling three phase induction motors. The drive produces a 3-phase, adjustable frequency output that controls and adjusts motor speed. Drive output voltage blower speed requirements can be adjusted to match motor. The input signal can be fed to the drive, either directly from the process or through a PLC. In either option, the variable frequency drive is required to control air volume.



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**DESIGN SPECIFICATIONS**

**AFTERBURNER**

Size	15,000 SCFM
Inlet temperature	100 °F
Design operating temperature	1500 - 1600 °F
Hydrocarbon destruction efficiency	99.99% NMHC or 20 ppmv
Residence time	1.0+ second

**BURNER**

Type	Maxon "Kinedizer LE" (or equivalent)
Burner capacity (each)	9.0 MMBTUH
Nox Emission	0.04 lb/MMBTU
Quantity	1

**COMBUSTION AIR FAN**

Type	New York Blower (or equivalent)
Capacity	2,500 SCFM
Motor Hp	20 HP

**PROCESS/DILUTION AIR FAN**

Type	New York Blower (or equivalent)
Capacity	15,000 SCFM
Motor Hp	40 HP

**MISCELLANEOUS**

Burner management System	Honeywell
Chart Recorder	Honeywell Truline (or equal)
Instrumentation	UL Listed NEMA 4
Diesel Train	NFPA
Power supply	480V/3PH/60HZ

*\* Dimensions and capacities may change based on final design*



---

**FUEL CONSUMPTION**

**Capacity: 15,000 SCFM**

**Operating Temperature: 1500-1600 °F**

**Inlet Temperature: 100 °F**

<b>Approx Estimated Heat Required for Start-Up:</b>	<b>9.0 x 10<sup>6</sup> BTUH</b>
<b>Installed Burner Capacity for Start-up purpose:</b>	<b>9.0 x 10<sup>6</sup> BTUH</b>
<b>Assume Solvent Contribution (Heat Release):</b>	<b>20.85 x 10<sup>6</sup> BTUH</b>
<b>Approx Estimated Net Fuel Usage with solvent loading</b>	<b>0.49 x 10<sup>6</sup> BTUH</b>
<b>Approx Estimated Energy Lost of System</b>	<b>0.10 x 10<sup>6</sup> BTUH</b>
<b>Approx Estimated Total Fuel Usage with solvent loading</b>	<b>0.59 x 10<sup>6</sup> BTUH</b>

<b>Estimated Approx. Natural Gas Cost per Hour for normal operating condition (Based on \$2/MMBTU N.G.) = \$1.18 / Hour</b>
---

## **APPENDIX E**

### **Gas Analysis**

**GENERAL GAS ANALYSIS** [2,3,8]

ELAP Cert.1396

Rev 03/20/12

**Customer:** Chevron Corporation  
**Address:** 9525 Camino Media  
 Bakersfield, CA 93311  
**Attention:** Greg Baron  
**Sample Description:** Well 3-8S Master Trap # 1 Sec. 29 Temp 92°, Pressure 22 psig

**Log #:** 22699-13  
**Date Received:** 8/23/12  
**Date Completed:** 8/24/12  
**Report Date:** 8/27/12

Constituent		Mole %	Wt %	Lv %
Oxygen/Argon O2 / Ar		0.053	0.040	0.028
Nitrogen N2		0.186	0.137	0.121
Carbon Dioxide CO2		74.775	86.185	75.517
Carbon Monoxide CO		0.000	0.000	0.000
Methane C-1		16.246	6.825	16.298
Ethane C-2		1.407	1.108	2.226
Propane C-3		0.590	0.681	0.962
Iso-Butane C-4		0.174	0.265	0.338
N-Butane C-4		0.206	0.314	0.385
Neo Pentane C-5		0.010	0.018	0.022
Iso-Pentane C-5		0.100	0.189	0.216
N-Pentane C-5		0.077	0.145	0.165
Hexanes Plus C-6 (+)		0.439	1.072	1.134
Hydrogen H2		2.502	0.132	0.000
Hydrogen Sulfide H2S		3.235	2.887	2.588
<b>Total</b>		<b>100.000</b>	<b>100.000</b>	<b>100.000</b>

[1,2]		ppmv	Grains H2S 100 cu.ft.	**** VOC's	[5] Water Content
[1,2]	Hydrogen Sulfide, H2S =	32,349	2059.014	(% by wt. C-3+)	(lbs/MM C.F.)
[1,2]	Total Sulfur, as H2S =	34,795	2084.916	2.685	1609
[4,6,7,8]	<b>Physical Data</b>	<b>dry</b>	<b>wet</b>		
	BTU cu.ft. ideal =	275.39	270.60		** GPM C-2+ = 0.918
	BTU cu.ft. real =	276.66	271.84		** GPM C-3+ = 0.543
	BTU/lb, ideal =	2652	2606		** GPM C-4+ = 0.381
	(Density) Sp. Gr. Ideal =	1.3183	1.2954	*F..factor (60°F)	** GPM C-5+ = 0.259
	(Density) Sp. Gr. Real =	1.3239	1.3008	*F..factor (68°F)	z..factor = 0.9954
	Density lbm/(1000 ft³) =	100.620	98.869	DSCF/MM Btu =	11546
				DSCF/MM Btu =	11722
				Sp.Vol. Cu.Ft./Lb =	9.62
				Av. Mol. Wt. =	38.18

C-H-O-N-S	% by Wt.
% Carbon =	31.755
% Hydrogen =	2.688
% Oxygen =	62.704
% Nitrogen =	0.137
% Sulfur =	2.717
<b>Total =</b>	<b>100.000</b>

QC-Ck	Measured	Range
1. Fidelity Ck =	0.99	(0.97-1.11)
2. Cont Area Ck =	8.7E+06	(8.3 - 9.2)E+6
3. Un Norm Sum =	102.6	(95 - 105)

**References**

1. ASTM D 6228-98
2. ASTM D 1945-03
3. ASTM D 1946-03
4. ASTM D 3588-03
5. ASTM D 1142-95
6. GPA 2172-96
7. GPA 2145-09
8. GPA 2261-00

**Notes:**

- \* F..factor = dci/MMBTU (CARB)
- \*\* GPM = Gallons Per 1000 Ft³
- \*\*\* By Special Request Only
- \*\*\*\* VOC's Volatile Organic Constituents

N.R. = "Not Requested"

Density-Specific Gravity where Air = 1.0000

DSCF = Dry Standard Cubic Feet

MM = 1 Million

QC \_\_\_\_\_ Date \_\_\_\_\_

All Calculations Tabulated @ 60/60  
 dry, 14.696psia  
 (288.15°K, 101.325kPa)

Date: \_\_\_\_\_

Alan J. Harris, BS, Laboratory Director Midway Laboratory, Inc.

**APPENDIX F**  
**Manufacturer's Emission Data**



MAILING ADDRESS  
P.O. Box 7060  
The Woodlands, Texas 77387  
Phone: (936) 273-3300



EPCON INDUSTRIAL SYSTEMS INC.  
EPCON INDUSTRIAL SYSTEMS LP

PLANT ADDRESS  
17777 I-45 South  
Conroe, Texas 77385  
Fax: (936) 273-4600

November 01, 2012

PCL Industrial Services, Inc.  
1500 S. Union Ave.  
Bakersfield, CA 93307

Ph.: 661-835-4444  
Email: [JJKerchinski@pcl.com](mailto:JJKerchinski@pcl.com)

Attn.: John Kerchinski

Reference Proposal # 12V-101 Rev. 03

**EXHAUST TEMPERATURE: 1500°F**

ESTIMATED APPOX. THERMAL OXIDIZER EXHAUST COMPOSITION			
COMPONENT	LB/HR	SCFM	PPM
CO	1.864467	0.421059	29.07447
C1	0.02854	0.011279	0.778852
C2	0.004633	0.000977	0.067436
C3	0.002848	0.000409	0.02826
C4	0.001108	0.000121	0.008342
C4	0.001313	0.000143	0.009885
C5	7.53E-05	7.44E-06	0.000514
C5	0.00079	0.000156	0.010784
C5	0.000606	5.4E-05	0.003729
C6	0.004483	0.000616	0.042551
H2	0.000552	0.001745	0.120508
CO2	6467.06	929.395	64175.52
H2S	0.02509	0.004666	0.322214
O2	8505.689	1680.758	116057.8
N2	48854.74	10987.86	758721.3
H2O	2381.383	836.571	57765.94
SO2	472.2434	46.65863	3221.818
NOX	2.064347	0.393744	27.16836
<b>TOTAL</b>	<b>66485.91</b>	<b>14482.08</b>	<b>1000000</b>

**Manufacturers Information at 99.9% VOC Control**

	lb/hr	lb/day	lb/year 75% use	tons/year
CO	1.864467	44.74721	12249.55	6.124774
C1	0.02854	0.68496	187.5078	0.093754
C2	0.004633	0.111192	30.43881	0.015219
C3	0.02848	0.68352	187.1136	0.093557
C4	0.01108	0.26592	72.7956	0.036398
C4	0.01313	0.31512	86.2641	0.043132
C5	0.000753	0.018072	4.94721	0.002474
C5	0.0079	0.1896	51.903	0.025952
C5	0.00606	0.14544	39.8142	0.019907
C6	0.04483	1.07592	294.5331	0.147267
VOC	0.112233	2.693592	737.3708	0.368685
H2	0.000552	0.013248	3.62664	0.001813
CO2	6467.06	155209.4	42488584	21244.29
H2S	0.02509	0.60216	164.8413	0.082421
O2	8505.683	204136.4	55882337	27941.17
N2	48654.74	1167714	3.2E+08	159830.8
H2O	2381.383	57153.19	15645686	7822.843
SO2	472.2434	11333.84	3102639	1551.32
NOx	2.864374	68.74494	18818.76	9.409384
SO2 @ 97.5%	11.806085	283.346	58174.48	29.08724
C1,C2 GHG	0.696633	16.71919	6102.505	3.051253
CO2	6467.06	155209.4	42488584	21244.29
Total GHG	6468	155226	42494687	21247

Note: CUSA requested a TO design to achieve 99.99% VOC destruction efficiency however, due to the variable load, btu content and VOC content the proposed emissions are at 99.9% VOC destruction.

**APPENDIX G**  
**BACT Guideline 1.4.5**

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 1.4.5\***

Last Update 3/10/1994

**Oilfield Waste Gas Incinerator**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
CO	Natural gas auxiliary fuel	Natural gas or LPG auxiliary fuel	
NOx	Natural gas auxiliary fuel	Natural gas or LPG auxiliary fuel	
PM10		Vapor control system and 95% sulfur removal by scrubber or vapors no greater than 0.2 gr S/100 dscf and natural gas or LPG auxiliary fuel	
SOx		Vapor control system and 95% sulfur removal by scrubber or vapors no greater than 0.2 gr S/100 dscf and natural gas or LPG auxiliary fuel	
VOC	Natural gas auxiliary fuel	Natural gas or LPG auxiliary fuel	

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

**\*This is a Summary Page for this Class of Source**

**APPENDIX H**  
**Top-Down BACT Analysis**

## **Top-Down BACT Analysis for Oilfield Thermal Oxidizer**

### **(a) BACT Guidance – Oilfield Waste Gas Incinerator**

Pursuant to the District's BACT policy APR-1305, BACT determinations shall be based on the control technologies and methods for the same or similar stationary source categories listed in the District's BACT Clearinghouse. BACT Guideline 1.4.5 identifies BACT for a Oilfield Waste Gas Incinerator.

This guideline shall be the basis for a "top-down" BACT analysis per District Policy. The following BACT performance levels are identified by guideline 1.4.5

### **(b) Top-Down BACT Review**

#### **BACT Analysis for NO<sub>x</sub>, PM<sub>10</sub>, SO<sub>x</sub> and VOC**

#### **Step 1- Identify all control technologies.**

##### **Technologically Feasible**

**NO<sub>x</sub>:** Natural Gas or LPG auxiliary fuel

**PM<sub>10</sub>:** Vapor control system and 95% sulfur removal by scrubber or vapors no greater than 0.2 gr S/100 dscf and natural gas or LPG as auxiliary fuel

**SO<sub>x</sub>:** Vapor control system and 95% sulfur removal by scrubber or vapors no greater than 0.2 gr S/100 dscf and natural gas or LPG as auxiliary fuel

**CO:** Natural gas or LPG auxiliary fuel

**VOC:** Natural gas or LPG auxiliary fuel

##### **Achieved in Practice**

**NO<sub>x</sub>:** Natural Gas auxiliary fuel

**CO:** Natural gas or LPG auxiliary fuel

**VOC:** Natural gas auxiliary fuel

#### **Step 2 – Eliminate Technologically Infeasible Options**

All of the above identified control options are technologically feasible for the proposed equipment. As such, none are eliminated.

#### **Step 3 – Rank Remaining Control Technologies by Control Effectiveness**

Step 3 is not required the applicant has proposed Technologically Feasible BACT

#### **Step 4 – Cost Effectiveness Analysis**

Step 4 is not required the applicant has proposed Technologically Feasible BACT

#### **Step 5 – Select BACT**

The proposed thermal oxidizer will be equipped with the following controls which meets District requirements for Technologically Feasible BACT.

**NOx:** Natural Gas or LPG auxiliary fuel

**PM10:** Vapor control system and 95% sulfur removal by scrubber or vapors no greater than 0.2 gr S/100 dscf and natural gas or LPG as auxiliary fuel

**SOx:** Vapor control system and 95% sulfur removal by scrubber or vapors no greater than 0.2 gr S/100 dscf and natural gas or LPG as auxiliary fuel

**CO:** Natural gas or LPG auxiliary fuel

**VOC:** Natural gas or LPG auxiliary fuel

**APPENDIX I  
AAQA/HRA**



## San Joaquin Valley Air Pollution Control District Risk Management Review

To: David Torrii- Permit Services  
 From: Kou Thao – Technical Services  
 Date: 1-10-13  
 Facility Name: Chevron USA Inc  
 Location: Sec 29, T26S, R21E  
 Application #(s): S-2010-316-0  
 Project #: S-1124301

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### A. RMR SUMMARY

RMR Summary			
Categories	Thermal Oxidizer (Unit 316-0)	Project Totals	Facility Totals
Prioritization Score	0.179	0.179	>1
Acute Hazard Index	7.06E-05	7.06E-05	3.64E-02
Chronic Hazard Index	8.34E04	8.34E04	7.64E-02
Maximum Individual Cancer Risk (10 <sup>-6</sup> )	3.49E-09	3.49E-09	1.99E-06
T-BACT Required?	No		
Special Permit Conditions?	Yes		

### Proposed Permit Conditions

To ensure that human health risks will not exceed District allowable levels; the following permit conditions must be included for:

#### Unit # 316-0

3. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
4. SOx emissions are not exceed 7 lbs/hr and 50,000 lbs/yr.

## B. RMR REPORT

### I. Project Description

Technical Services received a request on December 26, 2012 to perform a Risk Management Review for a proposed installation of a waste gas/natural gas 9 MMBtu/hr thermal oxidizer unit as control equipment for a TEOR system.

### II. Analysis

Technical Services performed a prioritization using the District's HEARTs database. Since the total facility prioritization score was greater than one, a refined health risk assessment was required. Emissions calculated using Ventura County emission factors for external combustion of natural gas were input into the HEARTs database. The AERMOD model was used, with the parameters outlined below and meteorological data for 2005-2009 from Bakersfield to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid. These dispersion factors were input into the Hot Spots Analysis and Reporting Program (HARP) risk assessment module to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

<b>Analysis Parameters Unit 316-0</b>			
<b>Source Type</b>	Point	<b>Location Type</b>	Rural
<b>Stack Height (m)</b>	12.19	<b>Closest Receptor (m)</b>	3319
<b>Stack Diameter. (m)</b>	0.1016	<b>Type of Receptor</b>	Business
<b>Stack Exit Velocity (m/s)</b>	6.096	<b>Max Hours per Year</b>	8760
<b>Stack Exit Temp. (°K)</b>	1088.55	<b>Fuel Type</b>	NG & waste gas
<b>Burner Rating (MMBtu/hr)</b>	9.0		

Technical Services also performed modeling for criteria pollutants CO, NO<sub>x</sub>, SO<sub>x</sub> and PM<sub>10i</sub> as well as a RMR. The emission rates used for criteria pollutant modeling were 1.86 lb/hr CO, 2.86 lb/hr NO<sub>x</sub>, 7 lb/hr SO<sub>x</sub>, and 1.5 lb/hr PM<sub>10</sub>. The engineer supplied the maximum fuel rate for the IC engine used during the analysis.

The results from the Criteria Pollutant Modeling are as follows:

## Criteria Pollutant Modeling Results\*

Diesel ICE	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO <sub>x</sub>	Pass	X	X	X	Pass
SO <sub>x</sub>	Pass	Pass	X	Pass	Pass
PM <sub>10</sub>	X	X	X	Pass <sup>2</sup>	Pass <sup>2</sup>
PM <sub>2.5</sub>	X	X	X	Fail <sup>3</sup>	Fail <sup>3</sup>

\*Results were taken from the attached PSD spreadsheet.

<sup>1</sup>The project was compared to the 1-hour NO<sub>2</sub> National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures.

<sup>2</sup>The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

<sup>3</sup>ERC's will be surrendered by applicant to offset increase in PM emissions.

### III. Conclusion

The acute and chronic indices are below 1.0 and the cancer risk factor associated with the project is less than 1.0 in a million. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

The project as proposed will not meet the Ambient Air Quality Standard for PM 2.5. As per the permitting engineer, the applicant will be providing PM ERC's to offset the increase in PM emissions, therefore the project will be able to proceed as proposed.

To ensure that human health risks will not exceed District allowable levels; the permit conditions listed on page 1 of this report must be included for this proposed unit.

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.

### IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Toxic emissions summary
- D. Prioritization score
- E. Facility Summary

**APPENDIX J**  
**Compliance Certification**



Susan B. Worley  
HES Manager

Health, Environmental and  
Safety  
Chevron Products Company  
324 W. El Segundo Blvd.  
El Segundo, CA 90245  
Tel 310.615.3749  
Fax 310.615.5153  
SUSB@Chevron.com

October 2<sup>nd</sup>, 2012

Mr. Robert Sanford  
SCAQMD Air Quality Engineer  
South Coast Air Quality Management District  
21865 East Copley Drive  
Diamond Bar, CA 91765-4182

**Statewide Compliance Certification for Pending Permit Applications**

Dear Mr. Sanford:

As required under District Rule 1303(b)(5)(B) and Section 173(a)(3) of the Clean Air Act, 42 U.S.C. Section 7503, Chevron Products Company, a division of Chevron U.S.A. Inc., hereby submits this letter of certification regarding statewide compliance for pending permit applications.

Based on reasonable inquiry and to the best of my knowledge and belief, the major stationary sources, as defined in the jurisdiction where the facilities are located, that are owned or operated by Chevron U.S.A. Inc. in the State of California as listed below are subject to emission limitations and are in compliance, or on a schedule for compliance with all applicable emission limitations and standards under the Clean Air Act:

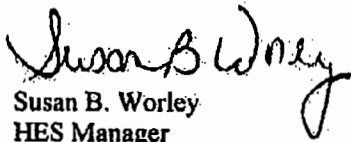
- El Segundo Refinery
- Richmond Refinery
- Banta Marketing Terminal
- Huntington Beach Marketing Terminal
- Montebello Marketing Terminal
- Sacramento Marketing Terminal
- Van Nuys Marketing Terminal
- Cross Valley Carneras Gas Compressor Facility (Kern County)
- Kettleman City Pump Station in Kings County
- 27G Pump Station in Kern County
- San Joaquin Valley Business Unit:
  - Fresno County Heavy Oil Source (Coalinga)
  - Fresno County Natural Gas Source (Coalinga)
  - Kern County Central Heavy Oil Source (Kern River)
  - Kern County Western Heavy Oil Source (Midway Sunset and Cymric)
  - Kern County Western Light Oil Source (Midway Sunset, Cymric, and Lost Hills)
  - Kern County Western Gas Source (Cymric and Lost Hills)
  - San Ardo (Monterey County)
- Global Power (Joint Venture Facility):
  - Coalinga Cogeneration Company in Fresno County

Mr. Robert Sanford  
South Coast Air Quality Management District  
October 2<sup>nd</sup>, 2012  
Page 2

- Kern River Cogeneration Company in Kern County
- Mid-Set Cogeneration Company in Kern County
- Salinas River Cogeneration Company in Monterey County
- Sargent Canyon Cogeneration Company in Monterey County
- Sunrise Power Company LLC in Kern County
- Sycamore Cogeneration Company in Kern County

For questions, please contact Ms. Mélida Escalante-Henricks at (310) 615-2574 or, in her absence, Mr. Robert Orinion at (310) 615-4147.

Sincerely,

  
Susan B. Worley  
HES Manager

**APPENDIX K**  
**PSD Potential to Emit – Lost Hills**

PSD Potential to Emit - Chevron's Lost Hills Stationary Source - S-55 and S-2010 (and S-3317)

tons/year

Facility	Permit	Mod	VOC lb/yr	Notes	In PSD Applicability	VOC PTE tons/year	NOx PTE tons/year	CO PTE tons/year	SOx PTE tons/year	PM <sub>10</sub> PTE tons/year	CO <sub>2e</sub> tons/year	Notes
S-2010 PTOs												
	300	0		1490 BHP Cummins TIER 2 Diesel Fueled Emergency Geset	Yes	0	0.5	0.1	0	0	87.1	Cahn 3
	301	0		1502 BHP Caterpillar TIER 2 Diesel Fueled Emergency Geset	Yes	0	0.44	0.1	0	0	43.9	Cahn 3
	302	0		1502 BHP Caterpillar TIER 2 Diesel Fueled Emergency Geset	Yes	0	0.44	0.1	0	0	43.9	Cahn 3
	303	0		2206 BHP Caterpillar TIER 2 Diesel Fueled Emergency Geset	Yes	0	0.6	0.2	0	0	64.4	Cahn 3
	304	0		2220 BHP Caterpillar TIER 2 Diesel Fueled Emergency Geset	Yes	0	0.7	0.2	0	0	64.8	Cahn 3
	305	0		3251 BHP Caterpillar TIER 2 Diesel Fueled Emergency Geset	Yes	0	0.9	0.1	0	0	94.9	Cahn 3
	198	2		10.5 MMBtu/hr Natural Gas Fired Boiler 401	Yes	0.3	1.7	3.9	0.1	0.3	5381	Cahn 3
	199	2		10.5 MMBtu/hr Natural Gas Fired Boiler 402	Yes	0.3	1.7	3.9	0.1	0.3	5381	Cahn 3
	200	4		30 MMBtu/hr Natural Gas Fired Portable Steam Generator	Yes	0.7	1.8	4.9	0.4	1	15373.8	Sec 29
	288	0		82.5 MMBtu/hr Natural Gas Fired Steam Generator - Various Locations	Yes	1.5	2.2	5.1	0.8	0.9	32028.8	Various
S-55 PTOs												
	10	3		440 BHP Caterpillar Diesel Fueled Emergency Geset	Yes	0.1	0.5	0.1	0	0	25.6	Sec 3
	11	5		96 MMCF/Day Kaldair Flare	Yes	2.1	1.5	38.8	0.3	0.4	2457	Sec 3
	12	3		182 BHP Cummins TIER 2 Diesel Fueled Firewater Pump	Yes	0	0.1	0.1	0	0	10.5	Sec 3
	13	6	19,924	1680 Hp Waukesha Natural Gas-Fired IC engine driving a compressor	Yes	2.3	5.4	9.6	0	0.6	6721	Sec 3
	14	6	19,924	1680 Hp Waukesha Natural Gas-Fired IC engine driving a compressor	Yes	2.3	5.4	9.6	0	0.6	6721	Sec 3
S-3317												
	1	6		1200 HP Superior Natural Gas Fired Lean Burn IC Engine (SIC 49?)	Yes	19.5	9.1	45.4	0.1	0.4	5221	Sec 15
	2	6		1200 HP Superior Natural Gas Fired Lean Burn IC Engine (SIC 49?)	Yes	19.5	9.1	45.4	0.1	0.4	5221	Sec 15
Total Tons/Year						48.6	42.08	166.8	1.9	4.9	84940.7	

Notes:

Emergency IC Engines are included at 100% load for permitted hours of testing and maintenance - actual operation is without load. No emergency operating hours are included. Engines S-3317-1 and '2 are used for gas compression to end use after gas processing may be considered a gas pipeline SIC not production.



**APPENDIX L**  
**Draft ATCs**

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

PERMIT NO: S-2010-308-1

LEGAL OWNER OR OPERATOR: CHEVRON USA INC  
MAILING ADDRESS: PO BOX 1392  
BAKERSFIELD, CA 93302

LOCATION: LIGHT OIL WESTERN STATIONARY SOURCE  
CA

SECTION: 29 TOWNSHIP: 26S RANGE: 21E

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF TEOR SYSTEM WITH UP TO 130 STEAM ENHANCED WELLS OPERATED WITH CLOSED CASING VENTS, PERMIT EXEMPT WELL TESTERS, PRESSURE VESSELS, RELIEF TANK, AND MASTER TRAP(S) VENTED TO H2S REMOVAL SYSTEM AND THE FIELD GAS GATHERING PIPELINE: AUTHORIZE THERMAL OXIDIZER S-2010-316 AS A CONTROL DEVICE

**CONDITIONS**

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Operation of H2S scrubber is optional. [District Rule 2201] Federally Enforceable Through Title V Permit
4. During the time any steam-enhanced crude oil production well is undergoing service or repair while the well is not producing, it shall be exempt from the emission control requirements of District Rule 4401, 5.0 (as amended December 14, 2006). [District Rule 4401, 4.1] Federally Enforceable Through Title V Permit
5. Emissions rate of VOC associated with the fugitive emissions from TEOR system and ancillary equipment 94.6 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Production from TEOR operation shall be sent only to tanks equipped with 99% vapor control. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

**DRAFT**  
DAVID WARNER, Director of Permit Services  
S-2010-308-1: Apr 30 2013 10:00AM - TORID : Joint Inspection NOT Required

7. This permit authorizes 10 leaks exceeding an instrument reading of 10,000 ppmv. Leaks greater in number than 10 and exceeding 10,000 ppmv are a violation of this permit. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
8. Except as otherwise provided in this permit, casing vent valves shall be closed and plugged. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
9. Permittee shall maintain records of the date and well identification where steam injection or well stimulation occurs, current list of all thermally enhanced production wells associated with this operation, permit numbers of tanks receiving production from the TEOR operation, leak inspection results, and accurate fugitive component counts of components in gas service and resulting emissions calculated using the emission factors in the CAPCOA California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities, Table [V-2c, Oil and Gas Production Screening Value Ranges Emission Factors (Feb 1999) . [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
10. {4272} Gas and liquid leaks are as defined in Section 3.20 of Rule 4401. [District Rule 4401 3.20] Federally Enforceable Through Title V Permit
11. {4273} An operator shall not operate a steam-enhanced crude oil production well unless the operator complies with either of the following requirements: The steam-enhanced crude oil production well vent is closed and the front line production equipment downstream of the wells that carry produced fluids (crude oil or mixture of crude oil and water) is connected to a VOC collection and control system as defined in Section 3.0 of Rule 4401, the well vent may be temporarily opened during periods of attended service or repair of the well provided such activity is done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere, or the steam-enhanced crude oil production well vent is open and the well vent is connected to a VOC collection and control system as defined in Section 3.0 of Rule 4401. [District Rule 4401, 5.5.1 and 5.5.2] Federally Enforceable Through Title V Permit
12. {4274} An operator shall be in violation of this rule if any District inspection demonstrates or if any operator inspection conducted pursuant to Section 5.8 of Rule 4401 demonstrates the existence of an open-ended line or a valve located at the end of the line that is not sealed with a blind flange, plug, cap, or a second closed valve that is not closed at all times, except during attended operations as defined by Section 5.6.2.1 of Rule 4401 requiring process fluid flow through the open-ended lines, a component with a major liquid leak, or a component with a gas leak greater than 50,000 ppmv. [District Rule 4401 5.6.2] Federally Enforceable Through Title V Permit
13. {4275} An operator shall be in violation of this rule if any District inspection demonstrates or if any operator inspection conducted pursuant to Section 5.8 of Rule 4401 demonstrates the existence of any combination of components with minor liquid leaks, minor gas leaks, or a gas leaks greater than 10,000 ppmv up to 50,000 ppmv that totals more than number of leaks allowed by Table 3 of Rule 4401. [District Rule 4401 5.6.2] Federally Enforceable Through Title V Permit
14. {4276} An operator shall not use any component with a leak as defined in Section 3.0 of Rule 4401, or that is found to be in violation of the provisions of Section 5.6.2 of Rule 4401. However, components that were found leaking may be used provided such leaking components have been identified with a tag for repair, are repaired, or awaiting re-inspection after being repaired within the applicable time frame specified in Section 5.9 of Rule 4401. [District Rule 4401 5.7.1] Federally Enforceable Through Title V Permit
15. {4277} Each hatch shall be closed at all times except during sampling or adding of process material through the hatch, or during attended repair, replacement, or maintenance operations, provided such activities are done as expeditiously as possible with minimal spillage of material and VOC emissions to the atmosphere. [District Rule 4401 5.7.2] Federally Enforceable Through Title V Permit
16. {4278} An operator shall comply with the requirements of Section 6.7 of Rule 4401 if there is any change in the description of major components or critical components. [District Rule 4401 5.7.3] Federally Enforceable Through Title V Permit
17. {4279} Except for pipes and unsafe-to-monitor components, an operator shall inspect all other components pursuant to the requirements of Section 6.3.3 of Rule 4401 at least once every year. [District Rule 4401 5.8.1] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

18. {4280} An operator shall visually inspect all pipes at least once every year. Any visual inspection of pipes that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected within 24 hours after detecting the leak. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 4 of Rule 4401. [District Rule 4401 5.8.2] Federally Enforceable Through Title V Permit
19. {4281} In addition to the inspections required by Section 5.8.1 of Rule 4401, an operator shall inspect for leaks all accessible operating pumps, compressors, and PRDs in service as follows: An operator shall audio-visually (by hearing and by sight) inspect for leaks all accessible operating pumps, compressors, and PRDs in service at least once each calendar week. Any audio-visual inspection of an accessible operating pump, compressor, and PRD performed by an operator that indicates a leak that cannot be immediately repaired to meet the leak standards of this rule shall be inspected not later than 24 hours after conducting the audio-visual inspection. If a leak is found, the leak shall be repaired as soon as practicable but not later than the time frame specified in Table 4 of Rule 4401. [District Rule 4401 5.8.3] Federally Enforceable Through Title V Permit
20. {4282} In addition to the inspections required by Sections 5.8.1, 5.8.2 and 5.8.3 of Rule 4401, operator shall perform the following: initially inspect a PRD that releases to the atmosphere as soon as practicable but not later than 24 hours after the discovery of the release, re-inspect the PRD not earlier than 24 hours after the initial inspection but not later than 15 calendar days after the initial inspection, inspect all new, replaced, or repaired fittings, flanges, and threaded connections within 72 hours of placing the component in service. Except for PRDs subject to the requirements of Section 5.8.4.1 of Rule 4401, an operator shall inspect a component that has been repaired or replaced not later than 15 calendar days after the component was repaired or replaced. [District Rule 4401 5.8.4] Federally Enforceable Through Title V Permit
21. {4283} An operator shall inspect all unsafe-to-monitor components during each turnaround. [District Rule 4401 5.8.5] Federally Enforceable Through Title V Permit
22. {4284} District inspection in no way fulfills any of the mandatory inspection requirements that are placed upon operators and cannot be used or counted as an inspection required of an operator. [District Rule 4401 5.8.6] Federally Enforceable Through Title V Permit
23. {4285} An operator shall affix a readily visible weatherproof tag to a leaking component upon detection of the leak and shall include the following information on the tag: date and time of leak detection, date and time of leak measurement, for a gaseous leak, the leak concentration in ppmv, for a liquid leak, whether it is a major liquid leak or a minor liquid leak, whether the component is an essential component, an unsafe-to monitor component, or a critical component. [District Rule 4401 5.9.1] Federally Enforceable Through Title V Permit
24. {4286} An operator shall keep the tag affixed to the component until an operator has met all of the following conditions: repaired or replaced the leaking component, re-inspected the component using the test method in Section 6.3.3, and 5.9.2.3 of Rule 4401, or the component is found to be in compliance with the requirements of this rule. [District Rule 4401 5.9.2] Federally Enforceable Through Title V Permit
25. {4287} An operator shall minimize a component leak in order to stop or reduce leakage to the atmosphere immediately to the extent possible, but not later than one (1) hour after detection of the leak. [District Rule 4401 5.9.3] Federally Enforceable Through Title V Permit
26. {4288} Except for leaking critical components or leaking essential components subject to the requirements of Section 5.9.7 of Rule 4401, if an operator has minimized a leak but the leak still exceeds the applicable leak limits as defined in Section 3.0 of Rule 4401, an operator shall comply with at least one of the following requirements as soon as practicable but not later than the time period specified in Table 4 of Rule 4401: Repair or replace the leaking component; or vent the leaking component to a VOC collection and control system as defined in Section 3.0 of Rule 4401, or remove the leaking component from operation. [District Rule 4401 5.9.4] Federally Enforceable Through Title V Permit
27. {4289} The repair period in calendar days shall not exceed 14 days for minor gas leaks, 5 days for major gas leaks less than or equal to 50,000 ppmv, 2 days for gas leak greater than 50,000 ppmv, 3 days for minor liquid leaks, 2 days for major liquid leaks. [District Rule 4401 5.9.4] Federally Enforceable Through Title V Permit
28. {4290} The leak rate measured after leak minimization has been performed shall be the leak rate used to determine the applicable repair period specified in Table 4 of Rule 4401. [District Rule 4401 5.9.5] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

29. {4291} The time of the initial leak detection shall be the start of the repair period specified in Table 4 of Rule 4401. [District Rule 4401 5.9.6] Federally Enforceable Through Title V Permit
30. {4292} If the leaking component is an essential component or a critical component that cannot be immediately shut down for repairs, and if the leak has been minimized but the leak still exceeds the applicable leak standard of this rule, the operator shall repair or replace the essential component or critical component to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection, whichever comes earlier. [District Rule 4401 5.9.7] Federally Enforceable Through Title V Permit
31. {4293} The operator of any steam-enhanced crude oil production well shall maintain records of the date and well identification where steam injection or well stimulation occurs. [District Rule 4401 6.1.1] Federally Enforceable Through Title V Permit
32. {4295} An operator of any steam-enhanced crude oil production well shall keep source test records which demonstrate compliance with the control efficiency requirements of the VOC collection and control system as defined in Section 3.0 of Rule 4401. [District Rule 4401 6.1.3] Federally Enforceable Through Title V Permit
33. {4296} The results of source tests conducted pursuant to Section 4.6.2 of Rule 4401 shall be submitted to the APCO within 60 days after the completion of the source test. [District Rule 4401 6.1.4] Federally Enforceable Through Title V Permit
34. {4297} Operator of any steam-enhanced crude oil production well shall keep an inspection log maintained pursuant to Section 6.4 of Rule 4401. [District Rule 4401 6.1.5] Federally Enforceable Through Title V Permit
35. {4298} Records of each calibration of the portable hydrocarbon detection instrument utilized for inspecting components, including a copy of current calibration gas certification from the vendor of said calibration gas cylinder, the date of calibration, concentration of calibration gas, instrument reading of calibration gas before adjustment, instrument reading of calibration gas after adjustment, calibration gas expiration date, and calibration gas cylinder pressure at the time of calibration shall be maintained. [District Rule 4401 6.1.6] Federally Enforceable Through Title V Permit
36. {4299} An operator shall maintain copies at the facility of the training records of the training program operated pursuant to Section 6.5 of Rule 4401. [District Rule 4401 6.1.7] Federally Enforceable Through Title V Permit
37. {4300} Operator shall keep a copy of the APCO-approved Operator Management Plan at the facility. [District Rule 4401 6.1.8] Federally Enforceable Through Title V Permit
38. {4303} An operator that discovers that a PRD has released shall record the date that the release was discovered, and the identity and location of the PRD that released. An operator shall submit such information recorded during the calendar year to the APCO no later than 60 days after the end of the calendar year. [District Rule 4401 6.1.11] Federally Enforceable Through Title V Permit
39. {4304} An operator shall source test annually all vapor collection and control systems used to control emissions from steam-enhanced crude oil production well vents to determine the control efficiency of the device(s) used for destruction or removal of VOC. Compliance testing shall be performed annually by source testers certified by ARB. Testing shall be performed during June, July, August, or September of each year if the system's control efficiency is dependent upon ambient air temperature. [District Rule 4401 6.2.1] Federally Enforceable Through Title V Permit
40. {4305} If approved by EPA, ARB, and the APCO, an operator need not comply with the annual testing requirement of Section 6.2.1 if all uncondensed VOC emissions collected by a vapor collection and control system are incinerated in fuel burning equipment, an internal combustion engine or in a smokeless flare. [District Rule 4401 6.2.2] Federally Enforceable Through Title V Permit
41. {4306} If approved by EPA, ARB, and the APCO, an operator need not comply with the annual testing requirement of Section 6.2.1 for a vapor control system which does not have a VOC destruction device. [District Rule 4401 6.2.3] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

42. {4307} An operator seeking approval pursuant to Section 6.2.2 or Section 6.2.3 shall submit a written request and supporting information to the APCO. The District shall evaluate the request and if approved by the APCO, the District shall provide EPA and ARB with a copy of the evaluation and shall request EPA and ARB approval. The District evaluation and the APCO request shall be deemed approved unless EPA or ARB objects to such approval in writing within 45 days of the receipt of the APCO request. [District Rule 4401 6.2.4] Federally Enforceable Through Title V Permit
43. {4309} The control efficiency of any VOC control device, measured and calculated as carbon, shall be determined by EPA Method 25, except when the outlet concentration must be below 50 ppm in order to meet the standard, in which case EPA Method 25a may be used. EPA Method 18 may be used in lieu of EPA Method 25 or EPA Method 25a provided the identity and approximate concentrations of the analytes/compounds in the sample gas stream are known before analysis with the gas chromatograph and the gas chromatograph is calibrated for each of those known analyte/compound to ensure that the VOC concentrations are neither under- or over-reported. [District Rule 4401 6.3.1] Federally Enforceable Through Title V Permit
44. {4310} VOC content shall be analyzed by using the latest revision of ASTM Method E168, E169, or E260 as applicable. Analysis of halogenated exempt compounds shall be performed by using ARB Method 432. [District Rule 4401 6.3.2] Federally Enforceable Through Title V Permit
45. {4311} Leak inspection, other than audio-visual, and measurements of gaseous leak concentrations shall be conducted according to EPA Method 21 using an appropriate portable hydrocarbon detection instrument calibrated with methane. The instrument shall be calibrated in accordance with the procedures specified in EPA Method 21 or the manufacturer's instruction, as appropriate, not more than 30 days prior to its use. The operator shall record the calibration date of the instrument. Where safety is a concern, such as measuring leaks from compressor seals or pump seals when the shaft is rotating, a person shall measure leaks by placing the instrument probe inlet at a distance of one (1) centimeter or less from the surface of the component interface. [District Rule 4401 6.3.3] Federally Enforceable Through Title V Permit
46. {4312} The VOC content by weight percent (wt.%) shall be determined using American Society of Testing and Materials (ASTM) D1945 for gases and South Coast Air Quality Management District (SCAQMD) Method 304-91 or the latest revision of ASTM Method E168, E169 or E260 for liquids. [District Rule 4401 6.3.5] Federally Enforceable Through Title V Permit
47. {4313} Operator shall maintain an inspection log in which an operator records, at a minimum, all of the following information for each inspection performed: The total number of components inspected, total number and percentage of leaking components found by component type, location, type, and name or description of each leaking component and description of any unit where the leaking component is found, date of leak detection and the method of leak detection. For gaseous leaks, the leak concentration in ppmv, and for liquid leaks record whether the leak is a major liquid leak or a minor liquid leak. the date of repair, replacement, or removal from operation of leaking components; identify and location of essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier, methods used to minimize the leak from essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier, the date of re-inspection and the leak concentration in ppmv after the component is repaired or is replaced, the inspector's name, business mailing address, and business telephone number, date and signature of the facility operator responsible for the inspection and repair program certifying the accuracy of the information recorded in the log. [District Rule 4401 6.4] Federally Enforceable Through Title V Permit
48. ATC S-2010-308-0 shall be implemented prior to or concurrently with this ATC. [District Rule 2201]

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San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** S-2010-316-0

**LEGAL OWNER OR OPERATOR:** CHEVRON USA INC  
**MAILING ADDRESS:** PO BOX 1392  
BAKERSFIELD, CA 93302

**LOCATION:** LIGHT OIL WESTERN STATIONARY SOURCE  
CA

**EQUIPMENT DESCRIPTION:**  
EPCON THERMAL OXIDIZER WITH 9.0 MMBTU/HR MAXON KINEDIZER LE BURNER OR EQUIVALENT BURNER,  
COMBUSTION AIR FAN, PROCESS AIR FAN, SERVED BY A DUAL CAUSTIC SO2 SCRUBBER WITH WET ESP MIST  
ELIMINATOR

**CONDITIONS**

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

**DAVID WARNER, Director of Permit Services**

S-2010-316-0 : Apr 30 2013 10:01AM - TORID : Joint Inspection NOT Required

6. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
7. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
8. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
9. Thermal oxidizer shall be equipped with waste gas volume flow meter and a supplemental gas volume flow meter. [District Rule 2201] Federally Enforceable Through Title V Permit
10. VOC content of the waste gas combusted in the thermal oxidizer shall not exceed 10% by weight. [District Rules 2201 and 4401] Federally Enforceable Through Title V Permit
11. The total sulfur content of the natural gas shall be less than 0.00283 lb/MMBtu. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Total quantity of supplemental fuel combusted in thermal oxidizer shall not exceed 9.0 MMBtu/hr. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Total quantity of waste gas combusted in thermal oxidizer shall not exceed 1.0 MMscf/day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Only PUC-quality natural gas shall be used for supplemental fuel. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Scrubber recirculation liquid pH shall be maintained only by the addition of caustic unless prior approval for an alternative pH maintenance method is received from the District. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Scrubber liquor pH shall be maintained between 6 and 8 in the primary scrubber and between 6 and 10 in the secondary scrubber and shall be continuously monitored and recorded during operation of this unit. [District Rules 2201 and 2520] Federally Enforceable Through Title V Permit
17. Scrubber control efficiency shall be maintained at least 97.5% by weight sulfur compounds or greater, or SO<sub>2</sub> concentration at the stack gas outlet shall not exceed 9 ppmvd corrected to 3% O<sub>2</sub>. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Thermal oxidizer VOC control efficiency shall be maintained at a minimum of 99.9% by weight. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Maximum emissions from the thermal oxidizer shall not exceed any of the following limits: 2.86 lb-NO<sub>x</sub>/hr, 7.0 lb-SO<sub>x</sub>/hr, 1.50 lb-PM<sub>10</sub>/hr, 1.86 lb-CO/hr and 0.11 lb-VOC/hr. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
20. Maximum emissions from the thermal oxidizer shall not exceed any of the following limits: 18,818 lb-NO<sub>x</sub>/year, 50,000 lb-SO<sub>x</sub>/year, 9,882 lb-PM<sub>10</sub>/year, 12,249 lb-CO/year and 737 lb-VOC/year. [District Rules 2201 and 4102] Federally Enforceable Through Title V Permit
21. Permittee shall demonstrate compliance with annual emission limits by calculation using the amount of fuel combusted, and either the results from the latest source test or the permitted emission factor if there is no source test data. [District Rule 2201] Federally Enforceable Through Title V Permit
22. The total sulfur concentration of the waste gas shall be determined and entered into the thermal oxidizer fuel throughput processor weekly. Permittee shall determine total sulfur concentration of the waste gas weekly using grab sample analysis by double GC performed in a laboratory. Permittee shall maintain a running total of sulfur emissions (as SO<sub>2</sub>) calculated at least weekly using the actual waste and fuel gas volumetric flow rates and total sulfur concentrations and the actual scrubber control efficiency as determined during the most recently completed compliance demonstration. [District Rule 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE



23. Fuel H<sub>2</sub>S, total sulfur, and methane content shall be determined semi-annually using the following test methods ASTM D-1945 or ASTM D-6228. Sulfur content of the supplemental fuel shall be demonstrated by certified copies of the gas sulfur content performed using method ASTM D-1072 by or for the gas supplier. [District Rule 1081] Federally Enforceable Through Title V Permit
24. If fuel analysis is used to demonstrate compliance with conditions of this permit, the fuel higher heating value for each fuel shall be certified by a third party fuel supplier or determined by: ASTM D1826 or D1945 in conjunction with ASTM D3588 for gaseous fuels. [District Rule 2201] Federally Enforceable Through Title V Permit
25. Thermal oxidizer firebox shall be equipped with an operational temperature measurement device capable of recording temperature not less than every 15 minutes. [District Rule 2201] Federally Enforceable Through Title V Permit
26. Thermal oxidizer firebox temperature shall be maintained at a minimum of 1400 deg F. [District Rule 2201] Federally Enforceable Through Title V Permit
27. Scrubber mist eliminator shall be properly cleaned and maintained. [District Rule 2201] Federally Enforceable Through Title V Permit
28. Exhaust gas stack shall be equipped with adequate provisions for facilitating the collection of gas samples consistent with EPA Test Methods. [District Rule 1081] Federally Enforceable Through Title V Permit
29. Compliance with scrubber SO<sub>x</sub> control efficiency requirement shall be demonstrated within 60 days of startup and at least once every twelve (12) months thereafter. After demonstrating compliance on two (2) consecutive annual source tests, the scrubber shall be tested not less than once every thirty-six (36) months. If the results of the applicable 36 month test demonstrates that the unit does not meet the applicable emission limits, the testing frequency shall revert to at least once every twelve (12) months [District Rule 2201] Federally Enforceable Through Title V Permit
30. Compliance with the thermal oxidizer's VOC control efficiency requirement shall be demonstrated within 60 days of startup and at least once every twelve (12) months thereafter. After demonstrating compliance on two (2) consecutive annual source tests, testing shall be performed not less than once every thirty-six (36) months. If the results of the applicable 36 month test demonstrates that the unit does not meet the applicable requirements, the testing frequency shall revert to at least once every twelve (12) months . [District Rule 2201] Federally Enforceable Through Title V Permit
31. Source testing to demonstrate compliance with destruction/control efficiency shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
32. Permittee shall keep accurate daily records of natural gas supplemental fuel and waste gas combusted, and such records shall be retained for a period of five years and be made readily available for District inspection upon request. [District Rule 2520] Federally Enforceable Through Title V Permit
33. The net heating value of the waste gas being combusted the thermal oxidizer shall be calculated annually using EPA Method 18, ASTM D1946, and ASTM D2382. [District Rule 2201] Federally Enforceable Through Title V Permit
34. Thermal oxidizer and caustic scrubber shall be operated according to manufacturers recommendations. [District Rule 2201] Federally Enforceable Through Title V Permit
35. Prior to operating equipment under this Authority to Construct, permittee shall surrender NO<sub>x</sub> emission reduction credits for the following quantity of emissions: 1st quarter - 7042 lb, 2nd quarter - 7042 lb, 3rd quarter - 7042 lb, and fourth quarter - 7042 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
36. ERC Certificate Number S-3735-2 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

37. Prior to operating equipment under this Authority to Construct, permittee shall surrender SOX emission reduction credits for the following quantity of emissions: 1st quarter - 314 lb, 2nd quarter - 314 lb, 3rd quarter - 314 lb, and fourth quarter - 314 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
38. ERC Certificate Number S-2080-5 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]
39. Prior to operating equipment under this Authority to Construct, permittee shall surrender PM10 emission reduction credits for the following quantity of emissions: 1st quarter - 9882 lb, 2nd quarter - 9882 lb, 3rd quarter - 9882 lb, and fourth quarter - 9882 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
40. ERC Certificate Numbers S-2275-4 and S-3679-4 (or a certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]
41. Prior to operating equipment under this Authority to Construct, permittee shall surrender CO emission reduction credits for the following quantity of emissions: 1st quarter - 2116 lb, 2nd quarter - 2116 lb, 3rd quarter - 2116 lb, and fourth quarter - 2116 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
42. ERC Certificate Number S-2005001/601 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]
43. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 267 lb, 2nd quarter - 267 lb, 3rd quarter - 267 lb, and fourth quarter - 267 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]
44. ERC Certificate Number S-3905-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

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