



San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT

NOV 25 2013



HEALTHY AIR LIVING™

Rod Eson
Foothill Energy, LLC
1 Riverway, Suite 610
Houston, TX 77056-2401

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: S-6858
Project Number: S-1133723

Dear Mr. Eson:

Enclosed for your review and comment is the District's analysis of Foothill Energy, LLC's application for an Authority to Construct for the installation of a flare operated solely as an emergency device, at Foothill Energy, LLC's Light Oil Central Stationary Source.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30-day public notice period, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Kristopher Rickards of Permit Services at (661) 392- 5611.

Sincerely,

David Warner
Director of Permit Services

DW:KTR/st

Enclosures

cc: Mike Tollstrup, CARB (w/ enclosure) via email

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Executive Director/Air Pollution Control Officer

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San Joaquin Valley Air Pollution Control District
Authority to Construct Application Review
Emergency Flare

Facility Name: Foothill Energy, LLC	Date: November 20, 2013
Mailing Address: 1 Riverway, Suite 610 Houston, TX 77056-2401	Engineer: Kris Rickards
Contact Person: Rod Eson	Lead Engineer: Allan Phillips <i>AP</i> <i>SVPR AOE</i>
Telephone: 832-485-8527	Isaac Dai (Consultant)
Fax: 866-469-8455	714-730-3320
E-Mail: reson@foothillenergy.com	NOV 20 2013
Application #(s): S-6858-31-0	
Project #: S-1133723	
Deemed Complete: October 11, 2013	

I. Proposal

Foothill Energy, LLC (Foothill) has requested an Authority to Construct (ATC) to operate a transportable 438 MMBtu/hr Pacific Process Systems flare to provide emergency flaring to Foothill's Light Oil Central Stationary Source. The proposed flare will operate solely during emergencies as defined in Rule 4311 §3.7.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
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 (6/18/09)
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

The equipment will be operated at various unspecified locations within Foothill's Light Oil Central Stationary Source. The equipment will not be allowed to operate within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

The proposed new flare will act as a backup emergency release control device for unplanned and unforeseen situations within Foothill's Light Oil Central Stationary Source.

V. Equipment Listing

S-6858-31-0: 438 MMBTU/HR AIR ASSIST PACIFIC PROCESS SYSTEMS EMERGENCY FLARE WITH AUTOMATIC IGNITION SYSTEM AND GAS FLOW METER OPERATED AT VARIOUS UNSPECIFIED LOCATIONS WITHIN FOOTHILL ENERGY'S LIGHT OIL CENTRAL STATIONARY SOURCE

VI. Emission Control Technology Evaluation

The flare tip will have an air-assisted tip and the pilot flame will be fueled by propane. The tip uses large amounts of air in order to increase turbulent mixing and promote complete combustion of hydrocarbons. This reduces carbon monoxide (CO) emissions and smoke/particulate matter (PM10) which are caused by high temperatures and incomplete combustion.

The VOC combustion efficiency for flares is typically greater than 99%.

The proposed emergency flare is only authorized for use during an emergency situation as defined by Rule 4311 §3.7 and is not authorized for operation for testing or maintenance purposes.

VII. General Calculations

A. Assumptions

- Emergency operating schedule: 24 hours/day
- Non-emergency operating schedule: 0 hours/year
- Flare tip maximum gas flow rate is 8.0 MMscf/day (per applicant)
- Gross heating value of produced gas is 1,326 Btu/scf (per gas analysis)
- Sulfur content of produced gas is less than 10.0 gr-S/100 scf (proposed by applicant with significant margin of compliance with gas analysis test of 2.25 gr-S/100 dscf)
- Pilot fuel emissions are negligible (FYI 310, at 1.25 scf/hr of propane fuel usage stated by applicant, emissions will not exceed 2 lbs/day for any criteria pollutant)
- EPA F-factor (adjusted to 60 °F) is 8,578 dscf/MMBtu (40 CFR 60 Appendix B)
- Molar specific volume of air is 379.5 scf/lb-mole

B. Emission Factors

Pursuant to District FYI 83 the following emission factors from EPA AP-42 section 13.5 Industrial Flares (9/91) represent best data for flares located at oil exploration and production operations, refineries, chemical plants, gas plants, and other petroleum related industries. The subject flare is operated in an oil production operation; therefore, the emission factors from FYI 83 will be used:

Emission Factors		
	lb/MMBtu	Source
NO _x	0.068	AP-42/FYI-83
SO _x	0.0215 [†]	10.0 gr-S/100 scf & 1,326 Btu/scf
PM ₁₀	0.008*	AP-42/FYI-83-BACT
CO	0.37	AP-42/FYI-83
VOC	0.063	AP-42/FYI-83

$$\dagger \frac{10.0 \text{ gr} \cdot \text{S}}{100 \text{ scf}} \left(\frac{\text{lb}}{7,000 \text{ gr}} \right) \frac{\text{scfu}}{1,326 \text{ Btu}} \left(\frac{10^6 \text{ Btu}}{\text{MMBtu}} \right) \frac{64 \text{ lb} \cdot \text{SO}_2}{32 \text{ lb} \cdot \text{S}} = 0.0215 \frac{\text{lb} \cdot \text{SO}_2}{\text{MMBtu}}$$

*Flare triggers and complies with BACT for PM₁₀; therefore, in accordance with FYI 83, the PM₁₀ emissions factor is equal to 0.008 lb/MMBtu.

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Since this is a new emissions unit, PE1 = 0 for all pollutants.

2. Post Project Potential to Emit (PE2)

The potential to emit for the flare is calculated as follows (based on 8 MMscf/day limit and a gross heat content of the produced gas of 1,326 Btu/scf), and summarized in the table below (annual emissions are not quantified for emissions resulting solely from emergency operation):

$$\frac{8,000,000 \text{ scf}}{\text{day}} \left(\frac{1,326 \text{ Btu}}{\text{scf}} \right) \frac{\text{MMBtu}}{10^6 \text{ Btu}} \left(\frac{\text{lb} \cdot \text{EF}}{\text{MMBtu}} \right) = \frac{\text{lb} \cdot \text{Emissions}}{\text{day}}$$

Post Project Potential to Emit (PE2)		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
NO _x	721.3	0
SO _x	228.1	0
PM ₁₀	84.9	0
CO	3,925.0	0
VOC	668.3	0

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.

SSPE1 (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
S-6858-3-0	0	0	0	0	1,825
S-6858-15-0	986	0	0	48,326	1,278
S-6858-16-0	0	0	0	0	1,825
S-6858-17-0	0	0	0	0	1,825
S-6858-19-0	0	0	0	0	1,825
S-6858-20-0	0	0	0	0	1,825
S-6858-21-1	0	0	0	0	1,825
S-6858-29-0	131	184	10	110	7,125
S-6858-30-0	0	0	0	0	55
SSPE1	1,117	184	10	48,436	19,408

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.

SSPE2 (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
S-6858-3-0	0	0	0	0	1,825
S-6858-15-0	986	0	0	48,326	1,278
S-6858-16-0	0	0	0	0	1,825
S-6858-17-0	0	0	0	0	1,825
S-6858-19-0	0	0	0	0	1,825
S-6858-20-0	0	0	0	0	1,825
S-6858-21-1	0	0	0	0	1,825
S-6858-29-0	131	184	10	110	7,125
S-6858-30-0	0	0	0	0	55
S-6858-31-0	0	0	0	0	0
SSPE2	1,117	184	10	48,436	19,408

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. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

Rule 2201 Major Source Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
Facility emissions pre-project	1,117	184	10	48,436	19,408
Facility emissions – post project	1,117	184	10	48,436	19,408
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No

As seen in the table above, the facility is not an existing Major Source and is not becoming a Major Source 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.

Since this facility currently has Permits to Operate a gas fired 145 bhp engine and one 0.15 MMBtu/hr gas fired boiler, the resultant CO₂e can be calculated as follows (using an IC engine thermal efficiency of 35% and a natural gas GHG emissions factor of 116.67 lb-CO₂e/MMBtu):

$$\frac{145 \text{ hp}}{\text{engine}} \left(\frac{2,546 \text{ Btu}}{\text{hp} - \text{hr}} \right) \frac{1 \text{ bhp in}}{0.35 \text{ bhp out}} \left(\frac{8,760 \text{ hr}}{\text{year}} \right) \frac{\text{MMBtu}}{10^6 \text{ Btu}} \left(\frac{116.67 \text{ lb} - \text{CO}_2\text{e}}{\text{MMBtu}} \right) \frac{1 \text{ short ton}}{2,000 \text{ lb}} = 539 \frac{\text{tons} - \text{CO}_2\text{e}}{\text{year}}$$

$$\frac{0.15 \text{ MMBtu}}{\text{hr}} \left(\frac{8,760 \text{ hr}}{\text{yr}} \right) \frac{116.67 \text{ lb} - \text{CO}_2\text{e}}{\text{MMBtu}} \left(\frac{1 \text{ short ton}}{2,000 \text{ lb}} \right) = 77 \frac{\text{tons} - \text{CO}_2\text{e}}{\text{year}}$$

PSD Major Source Determination (tons/year)							
	NO ₂	VOC	SO ₂	CO	PM	PM ₁₀	CO ₂ e
Estimated Facility PE before Project Increase	1	10	0	24	0*	0	616
PSD Major Source Thresholds	250	250	250	250	250	250	100,000
PSD Major Source ? (Y/N)	N	N	N	N	N	N	N

*According to AP 42 (Table 1.4-2, footnote c), all PM emissions from natural gas combustion are less than 1 µm in diameter and all equipment at the facility is gas fired.

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.

6. Baseline Emissions (BE)

The BE calculation (in lbs/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, 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 this 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 not a major source for any of the pollutants addressed in 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.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification. Additionally, since the facility is not a major source for PM₁₀ (140,000 lb/year), it is not a major source for PM_{2.5} (200,000 lb/year).

9. 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:

- NO₂ (as a primary pollutant)
- SO₂ (as a primary pollutant)
- CO
- PM
- PM₁₀
- Greenhouse gases (GHG): CO₂, N₂O, and CH₄

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. Potential to Emit for New or Modified Emission Units vs PSD Major Source Thresholds

As a screening tool, the project potential to emit from all new and modified units is compared to the PSD major source threshold, and if total project potential to emit from all new and modified units is below this threshold, no further analysis will be needed.

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.

Since the flare will be authorized for use during emergencies only, annual emissions are not, and cannot, be quantified as shown in the following table:

PSD Major Source Determination: Potential to Emit (tons/year)							
	NO ₂	VOC	SO ₂	CO	PM	PM ₁₀	CO _{2e}
Total PE from New and Modified Units	0	0	0	0	0	0	0
PSD Major Source threshold	250	250	250	250	250	250	100,000
New PSD Major Source?	N	N	N	N	N	N	N

As shown in the table above, the project potential to emit, by itself, does not exceed any of the PSD major source thresholds. Therefore Rule 2410 is not applicable and no further discussion is required.

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*:

- Any new emissions unit with a potential to emit exceeding two pounds per day,
- The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- 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 emergency flare with a PE greater than 2 lb/day for NO_x, SO_x, PM₁₀, CO, and VOC. BACT is triggered for NO_x, SO_x, PM₁₀, and VOC only since the PEs are greater than 2 lbs/day. However BACT is not triggered for CO since the SSPE2 for CO is not greater than 200,000 lbs/year, as demonstrated in Section VII.C.5 above.

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 Sections VII.C.7 and VII.C.8 above, this project does not constitute an SB 288 and/or Federal Major Modification for NO_x emissions. Therefore BACT is not triggered for any pollutant.

2. BACT Guideline

Best Available Control Technology (BACT) Guideline 1.4.2 applies Waste Gas Flare - Incinerating Produced Gas. (See **Appendix B**)

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 C**), BACT has been satisfied with the following:

- NO_x: Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable
- PM₁₀: Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable Pilot Light fired solely on LPG or natural gas.
- SO_x: Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable Pilot Light fired solely on LPG or natural gas.
- VOC: Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable

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 _x	SO _x	PM ₁₀	CO	VOC
SSPE2	1,117	184	10	48,436	19,408
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	No

2. Quantity of Offsets Required

As seen above, the SSPE2 is not greater than the offset thresholds for any pollutant; therefore offset calculations are not necessary and offsets will not be required for this project.

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 SSPE 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 Sections VII.C.7 and VII.C.8, this project does not constitute an SB 288 or Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is not 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 _x	721.3	100 lb/day	Yes
SO _x	228.1	100 lb/day	Yes
PM ₁₀	84.9	100 lb/day	No
CO	3,925.0	100 lb/day	Yes
VOC	668.3	100 lb/day	Yes

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 _x	1,117	1,117	20,000 lb/year	No
SO _x	184	184	54,750 lb/year	No
PM ₁₀	10	10	29,200 lb/year	No
CO	48,436	48,436	200,000 lb/year	No
VOC	19,408	19,408	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not 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	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	1,117	1,117	0	20,000 lb/year	No
SO _x	184	184	0	20,000 lb/year	No
PM ₁₀	10	10	0	20,000 lb/year	No
CO	48,436	48,436	0	20,000 lb/year	No
VOC	19,408	19,408	0	20,000 lb/year	No

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

2. Public Notice Action

As discussed above, public noticing is required for this project for NO_x, SO_x, CO, and VOC emissions in excess of 100 lb/day. 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.

For this flare, the DELs are stated in the form of emission factors (lb/MMBtu) and the maximum daily flaring capacity of the flare.

Proposed Rule 2201 (DEL) Conditions:

- Sulfur compound concentration of gas combusted shall not exceed 10.0 gr/100 scf. [District Rules 2201 and 4801]
- Emission rates from this unit shall not exceed any of the following limits: 0.068 lb-NO_x/MMBtu; 0.008 lb-PM₁₀/MMBtu; 0.37 lb-CO/MMBtu; or 0.063 lb-VOC/MMBtu. [District Rule 2201]
- Daily amount of gas flared shall not exceed 8.0 MMscf/day. [District Rule 2201]
- Flare shall only be operated for emergency purposes. An emergency is any situation or a condition arising from a sudden and reasonably unforeseeable and unpreventable event beyond the control of the operator. Examples include, but are not limited to, non preventable equipment failure, natural disaster, act of war or terrorism, or external power curtailment, excluding a power curtailment due to an interruptible power service agreement from a utility. A flaring event due to improperly designed equipment, lack of preventative maintenance, careless or improper operation, operator error or willful misconduct does not qualify as an emergency. An emergency situation requires immediate corrective action to restore safe operation. A planned flaring event shall not be considered as an emergency. [District Rule 2201]

- Except for the pilot flame, this unit shall not be operated for maintenance or testing. [District Rule 2201]

E. Compliance Assurance

1. Source Testing

Pursuant to District Policy APR 1705, source testing is not required to demonstrate compliance with 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:

- The permittee shall maintain all records of emergency operations. Records shall include the location, date, number of hours of each emergency flaring operation, and the amount of gas burned. [District Rule 2201]
- Permittee shall maintain accurate records of flared gas concentration of H₂S. [District Rules 1070 and 2201]
- All records required by this permit shall be retained on-site for a minimum of five years and shall be made available to the APCO, ARB, and EPA upon request. [District Rule 2201]

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 D** of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO_x, CO, and SO_x. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_x, CO, or SO_x.

The proposed location is in a non-attainment area for the state's PM₁₀ as well as federal and state PM_{2.5} thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM₁₀ and PM_{2.5}.

Rule 2520 Federally Mandated Operating Permits

Since this facility's potential emissions do not exceed any major source thresholds of Rule 2201, this facility is not a major source, and Rule 2520 does not apply.

Rule 4001 New Source Performance Standards (NSPS)

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60. However, no subparts of 40 CFR Part 60 apply to produced gas-fired flares.

Rule 4002 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63. However, no subparts of 40 CFR Part 61 or 40 CFR Part 63 apply to the produced gas flaring operations.

Rule 4101 Visible Emissions

Rule 4101 states that no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). As the flare is fired solely on gas, visible emissions are not expected to exceed Ringelmann 1 or 20% opacity.

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)

District Policy APR 1905 – *Risk Management Policy for Permitting New and Modified Sources* specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (**Appendix D**), the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
S-6858-31-0	0.00113 per million	No

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.

District policy APR 1905 also specifies that the increase in emissions associated with a proposed new source or modification not have acute or chronic indices, or a cancer risk greater than the District's significance levels (i.e. acute and/or chronic indices greater than 1 and a cancer risk greater than 10 in a million). As outlined by the HRA Summary in Appendix D of this report, the emissions increases for this project was determined to be less than significant.

- 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]
- Except for the pilot flame, this unit shall not be operated for maintenance or testing. [District Rule 2201]
- Flare shall operate a minimum of 134 meters from all property boundaries. [District Rule 4102]

Rule 4201 Particulate Matter Concentration

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

Emissions from the flare are the result of burning gaseous fuel only. Particulate emissions greater than 0.1 gr/dscf are not expected. The following condition will be listed on the permit to ensure compliance with this rule:

- Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

Rule 4301 Fuel Burning Equipment

The purpose of this rule is to limit the emission of air contaminants from fuel burning equipment. Fuel burning equipment is defined in the rule as "any furnace, boiler, apparatus, stack, and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer."

The purpose of the flare is not to produce heat or power by indirect heat transfer; therefore, Rule 4301 does not apply to the flare.

Rule 4311 Flares

Rule 4311 limits the emissions of volatile organic compounds (VOCs) and oxides of nitrogen (NO_x), and sulfur from the operation of flares.

Pursuant to Section 4.3, except for the recordkeeping requirements in Section 6.1.4 the requirements of this rule shall not apply to any stationary source that has the potential to emit, for all processes, less than ten (10.0) tons per year of VOC and less than ten (10.0) tons per year of NO_x.

According to the SSPE2, this facility produces less than 10 tons each of NO_x and VOC, therefore only the recordkeeping requirements of Section 6.14 are applicable to this flare.

Section 6.1.4 requires that operators claiming an exemption pursuant to Section 4.3 shall record annual throughput, material usage, or other information necessary to demonstrate an exemption under that section.

To utilize this exemption, the facility-wide emissions of NO_x and VOC shall each remain below 10 tons. Since this evaluation has demonstrated that this facility's emissions are currently below the exemption's emissions limits (SSPE2 calculated previously), no actual record-keeping will be required to show compliance with this rule; however, the following condition will be listed on the flare permit to ensure continued compliance.

- If facility-wide annual emissions exceed 20,000 lb/year for either VOC or NO_x emissions, then the operator shall submit an Authority to Construct application to bring this flare into full compliance with the applicable requirements of Rule 4311. [District Rule 4311]

Rule 4801 Sulfur Compounds

Rule 4801 requires that sulfur compound emissions (as SO₂) shall not exceed 0.2% by volume. Using the ideal gas equation, the proposed flare sulfur compound emissions are calculated as follows (using limits of 1 gr-S/100 dscf and 1,275 Btu/dscf):

$$\frac{10.0 \text{ gr} \cdot \text{S}}{100 \text{ scf}} \left(\frac{\text{lb}}{7,000 \text{ gr}} \right) \frac{379.5 \text{ scf}}{\text{lb} \cdot \text{mole}} \left(\frac{\text{lb} \cdot \text{mole}}{32 \text{ lb} \cdot \text{S}} \right) = 169 \times 10^{-6} \text{ or } 169 \text{ ppm as S}$$

Since 169 ppmv is \leq 2,000 ppmv, this flare is expected to comply with Rule 4801. Therefore, the following condition (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance:

- Sulfur content of the natural gas burned shall not exceed 10.0 grain/100 scf. [District Rules 2201 and 4801]

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.

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.

The District's engineering evaluation (this document) demonstrates that the project would not result in an increase in project specific greenhouse gas emissions. 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 ATC S-6858-31-0 subject to the permit conditions on the attached draft ATC in **Appendix A**.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-6858-31-0	3020-02-H	438 MMBtu/hr	\$1,030.00

Appendices

- A: Draft ATC
- B: BACT Guideline
- C: BACT Analysis
- D: HRA/AAQA Summary

Appendix A

Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-6858-31-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: FOOTHILL ENERGY, LLC

MAILING ADDRESS: 1 RIVERWAY STE 610
HOUSTON, TX 77056

LOCATION: LIGHT OIL CENTRAL
BAKERSFIELD, CA 93307-9217

EQUIPMENT DESCRIPTION:

438 MMBTU/HR AIR ASSIST PACIFIC PROCESS SYSTEMS EMERGENCY FLARE WITH AUTOMATIC IGNITION SYSTEM AND GAS FLOW METER OPERATED AT VARIOUS UNSPECIFIED LOCATIONS WITHIN FOOTHILL ENERGY'S LIGHT OIL CENTRAL STATIONARY SOURCE

CONDITIONS

1. {15} 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]
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
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. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
5. The equipment shall not be located within 1000 ft. of any K-12 school. [CH&SC 42301.6]
6. Flare shall operate a minimum of 134 meters from all property boundaries. [District Rule 4102]
7. Permittee shall notify the District Compliance Division of each location at which the operation is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 2201]
8. The flare shall be operated according to the manufacturer's specifications, a copy of which shall be maintained on site. [District Rule 2201]

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-6858-31-0 : Nov 20 2013 8:47AM -- RICKARDK : Joint Inspection NOT Required

9. Flare air-assist blower shall be maintained and operated for smokeless combustion, i.e. no visible emissions in excess of 5% opacity or 1/4 Ringelmann except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. [District Rule 2201]
10. Except for the pilot flame, this unit shall not be operated for maintenance or testing. [District Rule 2201]
11. Flare shall only be operated for emergency purposes. An emergency is any situation or a condition arising from a sudden and reasonably unforeseeable and unpreventable event beyond the control of the operator. Examples include, but are not limited to, non preventable equipment failure, natural disaster, act of war or terrorism, or external power curtailment, excluding a power curtailment due to an interruptible power service agreement from a utility. A flaring event due to improperly designed equipment, lack of preventative maintenance, careless or improper operation, operator error or willful misconduct does not qualify as an emergency. An emergency situation requires immediate corrective action to restore safe operation. A planned flaring event shall not be considered as an emergency. [District Rule 2201]
12. Flare shall be equipped with automatic re-ignition provisions. [District Rule 2201]
13. Gas line to flare shall be equipped with operational, volumetric flow rate indicator. [District Rule 2201]
14. Only propane shall be used as pilot fuel. [District Rule 2201]
15. Daily amount of gas flared shall not exceed 8.0 MMscf/day. [District Rule 2201]
16. Sulfur compound concentration of gas combusted shall not exceed 10.0 gr/100 scf. [District Rules 2201 and 4801]
17. Emission rates from this unit shall not exceed any of the following limits: 0.068 lb-NO_x/MMBtu; 0.008 lb-PM₁₀/MMBtu; 0.37 lb-CO/MMBtu; or 0.063 lb-VOC/MMBtu. [District Rule 2201]
18. To show compliance with sulfur emission limits (ppmv as H₂S), the gas being flared shall be tested weekly for sulfur content and upon each new location of flare operation. If compliance with the fuel sulfur content limit and sulfur emissions limit has been demonstrated for 8 consecutive weeks for the flared gas, then the compliance testing frequency shall be semi-annually. If the semi-annual sulfur content test fails to show compliance, weekly testing shall resume. [District Rule 2201]
19. The sulfur content of the gas being flared shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rules 1070 and 2201]
20. Permittee shall maintain accurate records of flared gas concentration of H₂S. [District Rules 1070 and 2201]
21. The permittee shall maintain all records of emergency operations. Records shall include the location, date, number of hours of each emergency flaring operation, and the amount of gas burned. [District Rule 2201]
22. All records required by this permit shall be retained on-site for a minimum of five years and shall be made available to the APCO, ARB, and EPA upon request. [District Rule 2201]
23. If facility-wide annual emissions exceed 20,000 lb/year for either VOC or NO_x emissions, then the operator shall submit an Authority to Construct application to bring this flare into full compliance with the applicable requirements of Rule 4311. [District Rule 4311]

DRAFT

Appendix B

BACT Guideline

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 1.4.2*

Last Update 12/31/1998

Waste Gas Flare - Incinerating Produced Gas

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
CO	Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable		
NOx	Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable		
PM10	Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable Pilot Light fired solely on LPG or natural gas.		
SOx	Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable Pilot Light fired solely on LPG or natural gas.	Precombustion SOx scrubbing system (non-emergency flares only.)	
VOC	Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable		

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 C

BACT Analysis

Top Down BACT Analysis for NOx Emissions

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse 1.4.2, 4th Quarter 1998 identifies achieved-in-practice and technologically feasible BACT for *Waste Gas Flare – Incinerating Produced Gas* as follows.

Achieved in Practice

1. Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable.

Step 2 - Eliminate Technologically Infeasible Options

There are no options to eliminate in this step.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable.

Step 4 - Cost Effectiveness Analysis

There is only one achieved in practice option, and it is being proposed by the applicant. Therefore, a cost-effectiveness analysis is not necessary.

Step 5 - Select BACT

1. Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable.

Top Down BACT Analysis for SOx Emissions

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse 1.4.2, 4th Quarter 1998 identifies achieved-in-practice and technologically feasible BACT for *Waste Gas Flare – Incinerating Produced Gas* as follows.

Achieved in Practice

1. Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable and a pilot light fired solely on LPG or natural gas

Technologically Feasible

1. Pre-combustion SOx scrubbing system (non-emergency flares only.)

Step 2 - Eliminate Technologically Infeasible Options

Pre-combustion SOx scrubbing system is only applicable to non-emergency flares. Therefore it is not applicable to the proposed emergency flare.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable and a pilot light fired solely on LPG or natural gas

Step 4 - Cost Effectiveness Analysis

There is only one achieved in practice option, and it is being proposed by the applicant. Therefore, a cost-effectiveness analysis is not necessary.

Step 5 - Select BACT

1. Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable and a pilot light fired solely on LPG or natural gas

Top Down BACT Analysis for PM10 Emissions

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse 1.4.2, 4th Quarter 1998 identifies achieved-in-practice and technologically feasible BACT for *Waste Gas Flare – Incinerating Produced Gas* as follows.

Achieved in Practice

1. Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable and a pilot light fired solely on LPG or natural gas

Step 2 - Eliminate Technologically Infeasible Options

There are no options to eliminate in this step.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

2. Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable and a pilot light fired solely on LPG or natural gas

Step 4 - Cost Effectiveness Analysis

There is only one achieved in practice option, and it is being proposed by the applicant. Therefore, a cost-effectiveness analysis is not necessary.

Step 5 - Select BACT

1. Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable and a pilot light fired solely on LPG or natural gas

Top Down BACT Analysis for VOC Emissions

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse 1.4.2, 4th Quarter 1998 identifies achieved-in-practice and technologically feasible BACT for *Waste Gas Flare – Incinerating Produced Gas* as follows.

Achieved in Practice

1. Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable.

Step 2 - Eliminate Technologically Infeasible Options

There are no options to eliminate in this step.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable.

Step 4 - Cost Effectiveness Analysis

There is only one achieved in practice option, and it is being proposed by the applicant. Therefore, a cost-effectiveness analysis is not necessary.

Step 5 - Select BACT

1. Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable.

Appendix D

HRA/AAQA Summary

San Joaquin Valley Air Pollution Control District

Risk Management Review

To: Kris Rickards – Permit Services
From: Kyle Melching – Technical Services
Date: November 18, 2013
Facility Name: Foothill Energy, LLC
Location: Various Unspecified Locations
Application #(s): S-6858-31-0
Project #: S-1133723

A. RMR SUMMARY

RMR Summary			
Categories	LPG Gas Emergency Flare (Unit 31-0)	Project Totals	Facility Totals
Prioritization Score	144	144	>1.0
Acute Hazard Index	0.00	0.00	0.00
Chronic Hazard Index	0.00	0.00	0.00
Maximum Individual Cancer Risk (10^{-6})	1.13E-09	1.13E-09	1.13E-09
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 # 31-0

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. The emergency flare will have 0 hours for testing and maintenance.
3. The flare must be at least 134 meters from the nearest property boundary.

B. RMR REPORT

I. Project Description

Technical Services received a request on October 11, 2013, to perform a Risk Management Review for an LPG-fired emergency use only flare. Since the engineer has indicated the project triggers public notice hourly emissions (non-permitted use) are based on the maximum burner rating of 438 MMBtu/hr. Annual emissions are based on the pilot's burner rating of 0.00125 MMBtu/hr.

II. Analysis

Toxic emissions for this proposed unit were calculated using 2001 Ventura County's Air Pollution Control District emission factors for Natural Gas Fired external combustion and the District's approved conversion factors from Natural Gas to LPG. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The prioritization score for the project was greater than 1.0 (see RMR Summary Table); therefore, a refined Health Risk Assessment was required and performed for the project. AERMOD was used with point source parameters outlined below and concatenated 5-year meteorological data from Bakersfield to determine maximum dispersion factors at the nearest residential and business receptors. The dispersion factors were input into the HARP model to calculate the Chronic and Acute Hazard Indices and the Carcinogenic Risk.

The following parameters were used for the review:

Analysis Parameters (Unit 31-0)			
Emergency Flare Parameters (Hourly Emissions)		Pilot Flare Parameters (Annual Emissions)	
Source Type	Point	Source Type	Point
Stack Height (m)	15.7	Stack Height (m)	6.13
Stack Diameter. (m)	6.69	Stack Diameter. (m)	0.0062
Stack Exit Velocity (m/s)	30.25	Stack Exit Velocity (m/s)	0.09
Stack Exit Temp. (°K)	1273	Stack Exit Temp. (°K)	322
LPG Usage (1000 gal/hr)	4.66	LPG Usage (1000 gal/yr)	0.12
Location Type	Rural	Closest Receptor (m)	134

Technical Services performed modeling for criteria pollutants CO, NOx, SOx and PM₁₀; as well as a RMR. The emission rates used for criteria pollutant modeling were 164 lb/hr and 1 lb/yr CO, 30 lb/hr and 4 lb/yr NOx, 2.1 lb/hr and 0 lb/yr SOx, and 3.5 lb/hr and 0 lb/yr PM₁₀. The engineer supplied the hourly emissions calculations based off emergency use (non-permitted use) and the annual pilot only emissions (permitted use) for the analysis.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Unit 31-0	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO _x	Pass ¹	X	X	X	Pass
SO _x	Pass	Pass	X	Pass	Pass
PM ₁₀	X	X	X	Pass ²	Pass ²
PM _{2.5}	X	X	X	Pass ²	Pass ²

*Results were taken from the attached PSD spreadsheet.

¹The project was compared to the 1-hour NO₂ National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures.

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

III. Conclusion

The emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS.

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the project is **1.13E-09**; which is less than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the project is approved **without** Toxic Best Available Control Technology (T-BACT).

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 permit 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. Prioritization score w/ toxic emissions summary
- D. HARP Risk Report
- E. Facility Summary
- F. AAQA Summary
- G. AERMOD Non-Regulatory Checklist