



San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT



AUG 08 2013

Ashley Dahlstrom
Chevron U.S.A. Inc.
PO Box 1392
Bakersfield, CA 93302

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: S-1141
Project Number: S-1132787

Dear Mr. Dahlstrom:

Enclosed for your review and comment is the District's analysis of Chevron U.S.A. Inc.'s application for an Authority to Construct for increasing flare S-1141-513's waste gas H2S concentration limit from 40,000 pmv to 50,000 ppmv, at Station 1-09, Midway Sunset oilfield, in CUSA's Western Kern County Fields heavy oil stationary source (SW/4 Section 9, T32S, R23E).

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 and 45-day EPA notice comment periods, 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. David Torii of Permit Services at (661) 392- 5620.

Sincerely,

David Warner
Director of Permit Services

DW:DBT/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

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4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

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Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
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Bakersfield Californian

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

**NOTICE OF PRELIMINARY DECISION
FOR THE PROPOSED ISSUANCE OF
AN AUTHORITY TO CONSTRUCT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Authority to Construct to Chevron U.S.A. Inc. for increasing a flare's waste gas H₂S concentration limit from 40,000 pmv to 50,000 ppmv, at Station 1-09, Midway Sunset oilfield, in Chevron U.S.A.'s Western Kern County Fields heavy oil stationary source (SW/4 Section 9, T32S, R23E).

The analysis of the regulatory basis for this proposed action, Project #S-1132787, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and at any District office. For additional information, please contact the District at (661) 392-5500. Written comments on this project must be submitted by September 12, 2013 to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 34946 FLYOVER COURT, BAKERSFIELD, CA 93308.**

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

Facility Name: Chevron U.S.A. Inc. Date: 7/8/13
Mailing Address: PO Box 1392, Bakersfield, CA 93302 Engineer: David Torii
Lead Engineer: Steve Leonard
Contact Person: Ashley Dahlstrom
Telephone: 661-654-7293
Application #(s): S-1141-513-8
Project #: 1132787
Deemed Complete: 7/3/13

I. Proposal

Chevron U.S.A. Inc. (CUSA) has requested an Authority to Construct (ATC) permit for increasing flare S-1141-513's waste gas H₂S concentration limit from 40,000 ppmv to 50,000 ppmv.

CUSA received their Title V Permit on 11/30/01. This modification can be classified as a Title V minor modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). But the facility has not requested that this project be processed in that manner; therefore, CUSA will be required to submit a Title V minor modification application prior to operating under the revised provisions of the ATC(s) issued with this project.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410 Prevention of Significant Deterioration (Adopted 6/16/11, effective 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 (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 flare is located at Station 1-09, Midway Sunset oilfield, in CUSA's Kern County heavy oil western stationary source (SW/4 Section 9, T32S, R23E). The equipment is not located 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

CUSA operates permitted equipment in the Midway Sunset Oilfield utilized for the production of crude oil and natural gas. In thermally enhanced oil recovery (TEOR), natural gas is combusted in steam generators to produce steam for injection into heavy crude oil bearing strata via injection wells to reduce the viscosity of the crude oil, thereby facilitating oil production. Station 1-09 oil cleaning plant (OCP) in the Midway Sunset Oilfield includes a shared tank vapor recovery system listed on tank S-1141-127. Gases collected by the vapor recovery system are incinerated at South Midway Steam Plant (SMSP) steam generators or during emergencies in emergency flare S-1141-513.

The air-assisted ground flare includes a Kaldair Azdair flare tip, 9 foot diameter by 40 foot tall flame enclosure, and a natural gas fired continuous pilot burner. The flare is designed for smokeless operation and is authorized to burn up to 4 MMscf/day of waste gas.

The natural gas purge system continuously sends natural gas into the waste gas stream just prior to the flare. This ensures a positive pressure in the waste gas line that prevents air from traveling back through the flare into the waste gas line which could create an explosive mixture prior to the flare outlet.

V. Equipment Listing

Pre-Project Equipment Description (see PTO in Appendix B):

S-1141-513-7: 167 MM BTU/HR DUAL BLOWER AIR-ASSISTED EMERGENCY GROUND FLARE WITH KALDAIR AZDAIR PLA-12 FLARE TIP AND 9' DIA X 40' TALL FLAME ENCLOSURE SERVING TANK VAPOR RECOVERY EQUIPMENT LISTED ON S-1141-127, STATION 109

Proposed ATC:

S-1141-513-8: MODIFICATION OF 167 MM BTU/HR DUAL BLOWER AIR-ASSISTED EMERGENCY GROUND FLARE WITH KALDAIR AZDAIR PLA-12 FLARE TIP AND 9' DIA X 40' TALL FLAME ENCLOSURE SERVING TANK VAPOR RECOVERY EQUIPMENT LISTED ON S-1141-127, STATION 109: INCREASE WASTE GAS H₂S CONCENTRATION LIMIT

Post Project Equipment Description:

S-1141-513-8: 167 MM BTU/HR DUAL BLOWER AIR-ASSISTED EMERGENCY GROUND FLARE WITH KALDAIR AZDAIR PLA-12 FLARE TIP AND 9' DIA X 40' TALL FLAME ENCLOSURE SERVING TANK VAPOR RECOVERY EQUIPMENT LISTED ON S-1141-127, STATION 109

VI. Emission Control Technology Evaluation

The flare is a control device for the tank vapor recovery system listed on permit S-1141-127 and has the potential to emit NO_x, SO_x, PM₁₀, CO, and VOC emissions due to the incineration of collected tank vapors. The flare is air-assisted to reduce visible emissions and is equipped with a continuously burning natural gas fired pilot flame.

VII. General Calculations

A. Assumptions

- The flare is permitted for emergency use only
- The flare's potential to emit includes emissions from the combustion of pilot and purge gas 24 hr/day and 365 day/yr, and waste gas during non-emergency and purge testing and maintenance events (4,000 Mscf/day and 200 hr/yr).
- Pilot and purge gas = PUC quality gas, 1000 Btu/scf.
- TVR/produced gas typically 500 Btu/scf (2000 scf/MMBtu) with F-factor 10,110 dscf/MMBtu (Used in previously approve emissions calculations)
- Pilot and purge gas = 14,020 scf/day
- The maximum daily amount of waste gas combusted is 4,000,000 scf TVR/produced gas during non-emergency testing and maintenance.
- The pre-project TVR/produced gas H₂S concentration limit = 40,000 ppmv
- The post-project TVR/produced gas H₂S concentration limit = 50,000 ppmv

B. Emission Factors

- Pilot and purge gas SO_x emission limits are from the current PTO (Based on EF listed in District Policy APR 1720 for PUC quality natural gas).
- Natural and waste gas NO_x, PM₁₀, CO, VOC and SO_x emission limits taken from current PTO (Based on District Policy FYI-83 and a SO_x mass balance calculation for waste gas using maximum sulfur content, as H₂S, of 40,000 ppmv).

Pre-Project Emission Factors (EF) in lb/MMBtu						
Gas Type		NO _x	SO _x	PM ₁₀	CO	VOC
Natural gas (pilot & purge)		0.068	0.00285	0.026	0.370	0.063
TVR/produced gas		0.068	13.51	0.026	0.370	0.063
EF in lb/Mscf						
	Btu/scf					
Natural gas (pilot & purge)	1,000	0.068	0.00285	0.026	0.370	0.063
TVR/produced gas	500	0.034	6.755	0.013	0.185	0.0315

Post-Project Emission Factors (EF) in lb/MMBtu					
Gas Type	NO _x	SO _x	PM ₁₀	CO	VOC
Natural gas (pilot & purge)	0.068	0.00285	0.026	0.370	0.063
TVR/produced gas	0.068	16.864*	0.026	0.370	0.063

	Btu/scf	EF in lb/Mscf				
Natural gas (pilot & purge)	1,000	0.068	0.00285	0.026	0.370	0.063
TVR/produced gas	500	0.034	8.432**	0.013	0.185	0.0315

*(50,000 scf-H₂S/1E6 scf fuel)(2000 scf fuel/MMBtu)(lbmol H₂S/379.5 scf H₂S)(lbmol SO₂/lbmol H₂S)(64 lb SO₂/lbmol SO₂)
= 16.864 lb-SO_x/MMBtu

** (50,000 scf-H₂S/1E6 scf fuel)(1000 scf fuel/Mscf)(lbmol H₂S/379.5 scf H₂S)(lbmol SO₂/lbmol H₂S)(64 lb SO₂/lbmol SO₂)
= 8.432 lb-SO_x/Mscf

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Daily PE1 = (Daily amount of gas) x (EF)

Sample calculations:

Pilot & purge gas combined PE₁ (NO_x) = (14,020 scf/day) x (0.068 lb/1000 scf)
= 1.0 lb/day

Waste gas PE1 (NO_x) = (4,000,000 scf/day) x (0.034 lb/1000 scf) = 136.0 lb/day

Gas type	Pre-Project Potential to Emit (PE1) in lb/day				
	NO _x	SO _x	PM ₁₀	CO	VOC
Pilot & Purge	1.0	0.0	0.4	5.2	0.9
Waste gas	136.0	27,020.0	52.0	740.0	126.0
Total	137.0	27,020.0	52.4	745.2	126.9

Annual PE1 = (Annual amount of gas) x (EF)

Sample calculations:

Pilot & purge gas PE₁ (NO_x) = (14,020 scf/day) x (365 day/yr) x (0.068 lb/Mscf)

$$= 348 \text{ lb/yr}$$

$$\text{Waste gas PE}_1 (\text{NO}_x) = (4,000 \text{ Mscf/day}) \times (1 \text{ day/24 hr}) \times (200 \text{ hr/yr}) \times (0.068 \text{ lb/Mscf}) \\ = 1,133 \text{ lb/yr}$$

Pre-project Potential to Emit (PE1) in lb/year					
Gas type	NO _x	SO _x	PM ₁₀	CO	VOC
Pilot & Purge	348	15	133	1,893	322
Waste gas	1,133	225,167	433	6,167	1,050
Total	1,481	225,181	566	8,060	1,372

2. Post Project Potential to Emit (PE2)

$$\text{Daily PE}_2 = (\text{Daily amount of gas}) \times (\text{EF})$$

Sample calculations:

$$\text{Pilot \& purge gas combined PE}_2 (\text{NO}_x) = (14,020 \text{ scf/day}) \times (0.068 \text{ lb/1000 scf}) \\ = 1.0 \text{ lb/day}$$

$$\text{Waste gas PE}_2 (\text{NO}_x) = (4,000,000 \text{ scf/day}) \times (0.034 \text{ lb/1000 scf}) = 136.0 \text{ lb/day}$$

Post-project Potential to Emit (PE2) in lb/day					
Gas type	NO _x	SO _x	PM ₁₀	CO	VOC
Pilot & Purge	1.0	0.0	0.4	5.2	0.9
Waste gas	136.0	33,728	52.0	740.0	126.0
Total	137.0	33,728	52.4	745.2	126.9

$$\text{Annual PE}_2 = (\text{Annual amount of gas}) \times (\text{EF})$$

Sample calculations:

$$\text{Pilot \& purge gas PE}_2 (\text{NO}_x) = (14,020 \text{ scf/day}) \times (365 \text{ day/yr}) \times (0.068 \text{ lb/Mscf}) \\ = 348 \text{ lb/yr}$$

$$\text{Waste gas PE}_2 (\text{NO}_x) = (4,000 \text{ Mscf/day}) \times (1 \text{ day/24 hr}) \times (200 \text{ hr/yr}) \times (0.068 \text{ lb/Mscf}) \\ = 281,066 \text{ lb/yr}$$

Post-project Potential to Emit (PE2) in lb/year					
Gas type	NO _x	SO _x	PM ₁₀	CO	VOC
Pilot & Purge	348	15	133	1,893	322
Waste gas	1,133	281,066	433	6,167	1,050
Total	1,481	281,066	566	8,060	1,372

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.

Facility emissions are already above the Offset and Major Source Thresholds for all pollutants; therefore, SSPE1 calculations are not necessary.

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.

Facility emissions are already above the Offset and Major Source Thresholds for all pollutants; therefore, SSPE2 calculations are not necessary.

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."

This source is an existing Major Source for all pollutants and will remain so.

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)							
	NO2	VOC	SO2	CO	PM	PM10	CO2e
Estimated Facility PE before Project Increase							>100,000
PSD Major Source Thresholds	250	250	250	250	250	250	100,000
PSD Major Source ? (Y/N)							y

As shown above, the facility is an existing major source for PSD for at least one pollutant. Therefore, the facility is 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 determine the amount of offsets required.

Pursuant to section 4.6.2 of Rule 2201, *emergency equipment* is not subject to offset requirements; therefore, BE calculations are not required.

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 all pollutants, 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 _x	1481	50,000	N
SO _x	281,066	80,000	Y
PM ₁₀	566	30,000	N
VOC	1372	50,000	N

Since the project's PE2 surpasses the SB 288 Major Modification Thresholds for (SO_x), the Net Emissions Increase (NEI) will be compared to the SB 288 Major Modification thresholds in order to determine if this project constitutes an SB 288 Major Modification.

The NEI is the total of emission increases for every permit unit addressed in this project and is calculated as follows:

$$NEI = PE2 - BAE$$

Where: PE2 = the sum of all the PE2s for each permit unit in this project
 BAE = for units that are fully offset, the BAE = the PE1 for every unit, otherwise, the BAE is the actual annual emissions averaged over the baseline period for every unit.

The baseline period is the two year period preceding the application (or another time period within the previous 5 or 10 yrs (5 yrs for electric utility steam generating unit) determined by the District to be more representative of normal operation. The operator has selected the below BAE which is based on the flare's pilot and purge emissions:

BAE (lb/year)			
NO _x	SO _x	PM ₁₀	VOC
348	15	133	322

The BAE is used to calculate the NEI and make the SB 288 Major Modification determination in the following table.

SB 288 Major Modification Calculation and Determination					
Pollutant	PE2 (lb/yr)	BAE (lb/yr)	NEI (lb/yr)	Thresholds (lb/yr)	SB 288 Major Modification?
NO _x	1481	348	1,133	50,000	N
SO _x	281,066	15	281,051	80,000	Y
PM ₁₀	566	133	433	30,000	N
VOC	1372	322	1,050	50,000	N

As demonstrated in the preceding table, this project does 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 existing emissions units, the increase in emissions is calculated as follows.

$$\text{Emission Increase} = \text{PAE} - \text{BAE} - \text{UBC}$$

Where: PAE = Projected Actual Emissions, and
 BAE = Baseline Actual Emissions
 UBC = Unused baseline capacity

If there is no increase in design capacity or potential to emit, the PAE is equal to the annual emission rate at which the unit is projected to emit in any one year, selected by the operator, within 5 years after the unit resumes normal operation. If detailed PAE are not provided, the PAE is equal to the PE2 for each permit unit.

The operator has selected PE2 as the flare's PAE:

PAE (lb/year)			
NO _x	SO _x	PM ₁₀	VOC
1,481	281,066	566	1,372

The BAE is calculated based on historical emissions and operating records for any 24 month period, selected by the operator, within the previous 10 year period. The BAE must be adjusted to exclude any non-compliant operation emissions and emissions that are no longer allowed due to lower applicable emission limits that were in effect when this application was deemed complete.

The operator has selected the below BAE which is based on the flare's pilot and purge emissions:

BAE (lb/year)			
NO _x	SO _x	PM ₁₀	VOC
348	15	133	322

Since this project does not result in an increase in design capacity, and it does not impact the ability of the emission unit to operate at a higher utilization rate, the UBC is the portion of PAE that the emission units could have accommodated during the baseline period.

UBC (lb/year)				
	NO _x	SO _x	PM ₁₀	VOC
UBC	1,133	225,167	433	1,050

The project's combined total emission increases are calculated as follows and compared to the Federal Major Modification Thresholds in the following table.

$$\text{Emission Increase} = \text{PAE} - \text{BAE} - \text{UBC}$$

Total Emissions Increases (lb/year)				
	NO _x	SO _x	PM ₁₀	VOC
PAE	1,481	281,066	566	1,372
BAE	-348	-15	-133	-322
UBC	-1,133	-225,167	-433	-1,050
Total Emissions Increases	0	55,884	0	0

Federal Major Modification Thresholds for Emission Increases			
Pollutant	Total Emissions Increases (lb/yr)	Thresholds (lb/yr)	Federal Major Modification?
NO _x *	0	0	N
VOC*	0	0	N
PM ₁₀	0	30,000	N
PM _{2.5}	0	20,000	N
SO _x	55,884	80,000	N

Since none of the Federal Major Modification Thresholds are being surpassed with this project, this project does not constitute a Federal Major Modification and no further analysis is required.

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, CH₄, HFCs, PFCs, and SF₆

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.

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)						
	NO2	SO2	CO	PM	PM10	CO2e
Total PE from New and Modified Units	0.7	140.5	4.0	0.3	0.3	75
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000
PSD Significant Emission Increase?	n	y	n	n	n	n

As demonstrated above, because the project has a total potential to emit from all new and modified emission units greater than PSD significant emission increase thresholds, further analysis is required to determine if the project has an emission increase greater than the PSD significant emission increase thresholds, see step below.

b. Emission Increase for Each Attainment/Unclassified Pollutant with a Significant Emission Increase vs PSD Significant Emission Increase Thresholds

In this step, the emission increase for each attainment/unclassified pollutant is compared to the PSD significant emission increase thresholds, and if emission increase for each attainment pollutant is below this threshold, no further analysis is needed.

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

For existing emissions units, the increase in emissions is calculated as follows:

$$\text{Emission Increase} = \text{PAE} - \text{BAE} - \text{UBC}$$

Where: PAE = Projected Actual Emissions, and
BAE = Baseline Actual Emissions
UBC = Unused baseline capacity

If there is no increase in design capacity or potential to emit, the PAE is equal to the annual emission rate at which the unit is projected to emit in any one year, selected by the operator, within 5 years after the unit resumes normal operation. If detailed PAE are not provided, the PAE is equal to the PE2 for each permit unit.

The operator has selected PE2 as the flare's PAE:

PAE (tons/year)					
NOX	SOX	PM	PM10	CO	CO2e
0.74	140.53	0.28	0.28	4.03	24,307

The BAE is calculated based on historical emissions and operating records for any 24 month period, selected by the operator, within the previous 10 year period. The BAE must be adjusted to exclude any non-compliant operation emissions and emissions that are no longer allowed due to lower applicable emission limits that were in effect when this application was deemed complete.

The operator has selected the below BAE which is based on the flare's pilot and purge emissions:

BAE (tons/year)					
NO _x	SO _x	PM	PM ₁₀	CO	CO2e
0.17	0.01	0.07	0.07	0.95	307.04

Since this project does not result in an increase in design capacity, and it does not impact the ability of the emission unit to operate at a higher utilization rate, the UBC is the portion of PAE that the emission units could have accommodated during the baseline period.

UBC (tons/year)					
NO _x	SO _x	PM	PM ₁₀	CO	CO2e
0.57	112.58	0.21	0.21	3.08	23,999.96

The project's combined total emission increases are calculated as follows and compared to the Federal Major Modification Thresholds in the following table.

$$\text{Emission Increase} = \text{PAE} - \text{BAE} - \text{UBC}$$

Total Emissions Increases (tons/year)						
	NO _x	SO _x	PM	PM ₁₀	CO	CO _{2e}
PAE	0.74	140.53	0.28	0.28	4.03	24,307
BAE	-0.17	-0.01	-0.07	-0.07	-0.95	-307.04
UBC	-0.57	-112.58	-0.21	-0.21	-3.08	-23999.96
Total Emissions Increases	0.0	27.4	0.0	0.0	0.0	0.0
PSD Significant Emission Increase Thresholds	40	40	25	15	100	75,000
PSD Significant Emission Increase?	n	n	n	n	n	n

As shown in the table above, the project emission increase, for all new and modified emission units, does not exceed any of the PSD significant emission increase thresholds. Therefore the project does not result in a PSD major modification due to a significant emission increase and no further discussion is required.

10. 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*:

- 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

- 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 discussed in Section I above, there are no new emissions units associated with this project. Therefore BACT for new units with PE > 2 lb/day purposes is not triggered.

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

$$\text{AIPE} = \text{PE}_2 - \text{HAPE}$$

Where,

AIPE = Adjusted Increase in Permitted Emissions, (lb/day)

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

HAPE = Historically Adjusted Potential to Emit, (lb/day)

$$\text{HAPE} = \text{PE}_1 \times (\text{EF}_2/\text{EF}_1)$$

Where,

PE₁ = The emissions unit's PE prior to modification or relocation, (lb/day)

EF₂ = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF₂ is greater than EF₁ then EF₂/EF₁ shall be set to 1

EF₁ = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

$$\text{AIPE} = \text{PE}_2 - (\text{PE}_1 * (\text{EF}_2 / \text{EF}_1))$$

PE₁ = PE₂ and EF₁ = EF₂ for NO_x, PM₁₀, CO and VOC; therefore, the AIPEs for NO_x, PM₁₀, CO and VOC equal zero

For SO_x, EF₂ is greater than EF₁; therefore, EF₂/EF₁ is set to 1

$$\begin{aligned} \text{AIPE} &= 33,728 \text{ lb-SO}_x/\text{day} - (27,020 \text{ lb-SO}_x/\text{day} * (1)) \\ &= 6708 \text{ lb-SO}_x/\text{day} * 1 \\ &= 6708 \text{ lb-SO}_x/\text{day} \end{aligned}$$

As demonstrated above, the AIPE is greater than 2.0 lb/day for SO_x emissions. Therefore BACT is triggered for SO_x.

d. SB 288/Federal Major Modification

As discussed in Sections VII.C.7 and VII.C.8 above, this project does constitute a SB 288 Major Modification for SO_x emissions. Therefore BACT is triggered for SO_x.

2. BACT Guideline

BACT Guideline 1.4.2 applies to Waste Gas Flare – Incinerating Produced Gas (see Appendix C)

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:

SO_x: air-assisted when steam unavailable and pilot light fired solely on LPG or natural gas

B. Offsets

1. Offset Applicability

Pursuant to section 4.6.2 of Rule 2201, *emergency equipment* is not subject to offset requirements; therefore, offset calculations are not required.

C. Public Notification

1. Applicability

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Any project which results in the offset thresholds being surpassed, and/or
- d. Any project with an SSIP 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 constitute a SB 288 Major Modification; therefore, public noticing for SB 288 Modification purposes is required.

b. PE > 100 lb/day

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. There are no new emissions units associated with this project. Therefore public noticing is not required for this project for PE > 100 lb/day.

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	>20,000	>20,000	20,000 lb/year	No
SO _x	>54,750	>54,750	54,750 lb/year	No
PM ₁₀	>29,200	>29,200	29,200 lb/year	No
CO	>200,000	>200,000	200,000 lb/year	No
VOC	>20,000	>20,000	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	1481	1481	0	20,000 lb/year	No
SO _x	281,066	225,181	55,885	20,000 lb/year	Yes
PM ₁₀	566	566	0	20,000 lb/year	No
CO	8060	8060	0	20,000 lb/year	No
VOC	1372	1372	0	20,000 lb/year	No

As demonstrated above, the SSIPE for SO_x 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 for a SB 288 Major Modification and a SO_x emissions increase excess of 20,000 lb/year. 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:

- Maximum daily gas flow to flare shall not exceed any of the following limits: 14,020 scf pilot and purge gas combined; or 4,000,000 scf TVR/produced gas during non-emergency testing and maintenance. [District Rule 2201] Y
- Emissions from pilot fuel and purge gas shall not exceed any of the following limits: NO_x (as NO₂): 0.068 lb/MM Btu; VOC: 0.063 lb/MM Btu; CO: 0.37 lb/MM Btu; PM₁₀: 0.026 lb/MM Btu; or SO_x (as SO₂): 0.00285 lb/MM Btu. [District Rule 2201] Y
- Emissions from TVR/produced gas during non-emergency testing and maintenance shall not exceed any of the following limits: NO_x (as NO₂): 0.068 lb/MM Btu; VOC: 0.063 lb/MM Btu; CO: 0.37 lb/MM Btu; PM₁₀: 0.026 lb/MM Btu; or SO_x (as SO₂): 16.864 lb/MM Btu. [District Rule 2201] Y
- Total sulfur content, as H₂S, of TVR/produced gas introduced to flare shall not exceed 50,000 ppmv. [District Rule 2201] Y

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

- Permittee shall, at least annually, measure and record sulfur content of pilot/purge gas. [District Rule 2201] Y
- Hydrogen sulfide content of vent gas shall be determined daily, on days when flaring occurs, using a calorimetric tube system and ASTM Method D 1945-96, ASTM Method UOP 539-97, ASTM Method D 4084-94, or ASTM Method D 4810-88. [District Rule 4311, 6.3.4.2 and 6.6.5] Y

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:

- All in-line continuous analyzer and flow monitoring data shall be continuously recorded by an electronic data acquisition system capable of one-minute averages. Flow monitoring data shall be recorded as one-minute averages. [District Rule 4311, 6.9.4] Y
- Permittee shall maintain accurate records of sulfur content and daily volume of TVR/produced gas, pilot gas, and purge gas introduced to flare. [District Rule 1070] Y
- Permittee shall maintain accurate records of the hours of operation and the amount of TVR/produced gas combusted during maintenance and testing. [District Rule 1070] Y
- The following records shall be maintained, retained on-site for a minimum of five years, and made available to the APCO, ARB, and EPA upon request: 1) A copy of the compliance determination conducted pursuant to Section 6.4.1, 2) For flares used during an emergency, record of the duration of flare operation, amount of gas burned, and the nature of the emergency situation, 3) A copy of the approved flare minimization plan pursuant to Section 6.5, 4) On and after July 1, 2012, where applicable, a copy of annual reports submitted to the APCO pursuant to Section 6.2, and 5) Where applicable, monitoring data collected pursuant to Sections 5.10, 6.6, 6.7, and 6.9. [District Rule 4311, 6.1] Y
- Records shall be retained for a minimum of 5 years and shall be made readily available for District inspection upon request. [District Rule 1070] Y

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}.

H. Alternate Siting Analysis

The project involves an existing flare; therefore, 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 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit.

In accordance with Rule 2520, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
 - a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
 - b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

As discussed above, the facility has not applied for a Certificate of Conformity (COC). Therefore, the facility must apply to modify their Title V permit with a minor modification, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility may construct/operate under the ATC upon submittal of the Title V administrative amendment/minor modification application.

Rule 4101 Visible Emissions

District Rule 4101, Section 5.0, indicates that 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 dark or darker than Ringlemann 1 or equivalent to 20% opacity.

The flare is currently in compliance with this rule and the proposed modification is not expected to affect compliance.

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:

RMR Summary			
Categories	Waste Gas Flare (Unit 513-8)	Project Totals	Facility Totals
Prioritization Score	0.00 ¹	0.00	>1.0
Acute Hazard Index	N/A	N/A	0.04
Chronic Hazard Index	N/A	N/A	0.04
Maximum Individual Cancer Risk (10⁻⁶)	N/A	N/A	1.05E-06
T-BACT Required?	No		
Special Permit Conditions?	Yes		

¹A prioritization was not performed after determining no increases to H2S emissions associated with this project. No further analysis was required.

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

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.

$$\begin{aligned}
 \text{PM concentration} &= (\text{emission rate}) \times (\text{lb to grain conversion}) / \text{F factor} \\
 &= (0.026 \text{ lb/MMBtu}) \times (7,000 \text{ grains/lb}) \times / (10,110 \text{ dscf/MMBtu}) \\
 &= 0.018 \text{ grain/dscf}
 \end{aligned}$$

Therefore, continued compliance is expected.

Rule 4311 Flares

This rule limits the emissions of volatile organic compounds (VOC), oxides of nitrogen (NOx), and sulfur oxides (SOx) from the operation of flares.

Section 5.1

Section 5.1 states that flares permitted to operate only during an emergency are not subject to the requirements of Sections 5.6 and 5.7. The flare is operated only during emergency situations, therefore, the requirements of 5.6 and 5.7 do not apply.

Even though this flare is permitted for up to 200 hours of operation (NSR definition of emergency), it is still considered an emergency flare for the purpose of determining Rule 4311 applicability as well. The following condition ensures compliance:

Flare shall operate only in emergencies except for pilot and purge gas and up to 200 hours per year of flare testing and maintenance. [District Rules 2201 and 4311, 5.1]

Sections 5.2 through 5.3

Section 5.2 requires that a flame be present at all times when combustible gases are vented through the flare. Section 5.3 requires automatic re-ignition or a pilot flame present when flaring. The flare is equipped with a continuous pilot flame and a flame ionization monitoring device that will ensure that a flame is present at all times when combustion gasses are vented to the flare. Therefore, continued compliance is expected. The following existing conditions assure compliance:

Flare shall be equipped with purge gas and a continuous pilot, both using PUC quality natural gas consisting primarily of methane containing no more than 5% by weight hydrocarbons heavier than butane. [District Rule 2201 and 4311, 5.3]

Flare shall operate with a pilot flame present at all times when combustible gases are introduced to the flare. [District Rule 4311, 5.3]

Section 5.4

Section 5.4 requires that a flow sensing ignition system, a heat sensing device, or alternate equivalent, or flare flame be present be installed and operated. The flare is equipped with a continuous pilot flame and a flame ionization monitoring device that will ensure that a flame is present at all times when combustion gasses are vented to the flare. Therefore, continued compliance is expected. The following existing condition assures compliance:

A heat sensing device such as a thermocouple, ultraviolet beam sensor, or an equivalent device, capable of continuously detecting at least one pilot flame or the flare flame is present shall be installed and operated. [District Rule 4311, 5.4]

Section 5.5

Section 5.5 requires that flares using flow-sensing automatic ignition systems and which do not use a continuous flame pilot shall use purge gas for purging. Flare S-1141-513 is not

equipped with a flow-sensing automatic ignition system, therefore this section does not apply to this flare.

Sections 5.6 and 5.7, 6.1.1, 6.1.2, 6.2.1, 6.2.2, and 6.2.3

Section 5.6 requires open flares with a flare gas pressure less than 5 psig be operated per the requirements of 40 CFR 60.18.

Section 5.7 sets forth additional requirements for ground-level enclosed flares.

Emergency flares are not required to meet the requirements of Section 5.6 or 5.7 as per discussion in previous Section 5.1.

The administrative requirements of Sections 6.1.1, 6.1.2, 6.2.1, 6.2.2, and 6.2.3 apply to flares subject to Sections 5.6 and 5.7. Therefore, these sections are not applicable.

Section 5.8

Section 5.8 requires a flare minimization plan be submitted pursuant to Section 6.5, and that the permit holder meet the commitments listed in the plan (and approved by the District). Chevron has a District approved Flare Management Plan (FMP).

Section 5.9

Section 5.9 is for refinery flares, and therefore does not apply to this flare.

Section 5.10

Section 5.10 requires flares subject to a flare minimization plan (FMP) to monitor vent gas flow rate. Operator is required to keep records pursuant to Section 6.1.7.

Monitoring requirements and associated condition(s) are discussed in section 6 compliance.

Section 5.11

Section 5.11 requires flares with a capacity ≥ 50 MMBtu/hr to monitor the flare pursuant to Sections 6.6, 6.7, ~~6.8~~, 6.9, and ~~6.10~~ (6.8 and 6.10 do not apply to this emergency flare). The specific monitoring required is discussed in those sections.

Section 6.0 Administrative

Section 6.1 Recordkeeping

Section 6.1 sets forth requirements for records, which are to be maintained, retained on site for a minimum of 5 years, and made available to the District upon request. The following condition addresses all of the Section 6.1 requirements (each subsection and corresponding wording discussed and highlighted as follows):

The following records shall be maintained, retained on-site for a minimum of five years, and made available to the APCO, ARB, and EPA upon request: 1) A copy of the compliance determination conducted pursuant to Section 6.4.1, 2) For flares used during an emergency, record of the duration of flare operation, amount of gas burned, and the nature of the emergency situation, 3) A copy of the approved flare minimization plan pursuant to Section 6.5, 4)

On and after July 1, 2012, where applicable, a copy of annual reports submitted to the APCO pursuant to Section 6.2, and 5) Where applicable, monitoring data collected pursuant to Sections 5.10, 6.6, 6.7, and 6.9. [District Rule 4311, 6.1]

Sections 6.1.1 and 6.1.2

These sections are for demonstrating compliance with the requirements of Sections 5.6 and 5.7. Since permit unit S-1141-513 is an emergency flare, the requirements of these two sections do not apply.

Section 6.1.3

Requires records be kept for flares used during an emergency, including duration of flare operation, amount of gas burned, and the nature of the emergency situation.

The following records shall be maintained, retained on-site for a minimum of five years, and made available to the APCO, ARB, and EPA upon request: 1) A copy of the compliance determination conducted pursuant to Section 6.4.1, 2) *For flares used during an emergency, record of the duration of flare operation, amount of gas burned, and the nature of the emergency situation*, 3) A copy of the approved flare minimization plan pursuant to Section 6.5, 4) On and after July 1, 2012, where applicable, a copy of annual reports submitted to the APCO pursuant to Section 6.2, and 5) Where applicable, monitoring data collected pursuant to Sections 5.10, 6.6, 6.7, and 6.9. [District Rule 4311, 6.1]

Section 6.1.4

Section 6.1.4 requires recordkeeping associated with equipment claiming exemption under Section 4.3. This flare is not exempt pursuant to 4.3, therefore this section does not apply.

Section 6.1.5

Section 6.1.5 requires keeping a copy of the approved FMP pursuant to Section 6.5.

The following records shall be maintained, retained on-site for a minimum of five years, and made available to the APCO, ARB, and EPA upon request: 1) A copy of the compliance determination conducted pursuant to Section 6.4.1, 2) For flares used during an emergency, record of the duration of flare operation, amount of gas burned, and the nature of the emergency situation, 3) *A copy of the approved flare minimization plan pursuant to Section 6.5*, 4) On and after July 1, 2012, where applicable, a copy of annual reports submitted to the APCO pursuant to Section 6.2, and 5) Where applicable, monitoring data collected pursuant to Sections 5.10, 6.6, 6.7, and 6.9. [District Rule 4311, 6.1]

Section 6.1.6

Section 6.1.6 requires keeping a copy of the annual reports submitted to the District pursuant to Section 6.2.

The following records shall be maintained, retained on-site for a minimum of five years, and made available to the APCO, ARB, and EPA upon request: 1) A copy of the compliance determination conducted pursuant to Section 6.4.1, 2) For flares used during an emergency, record of the duration of flare operation, amount of gas burned, and the nature of the emergency situation, 3) A copy of the approved flare minimization plan pursuant to Section 6.5, 4) *On and after July 1,*

2012, where applicable, a copy of annual reports submitted to the APCO pursuant to Section 6.2, and 5) Where applicable, monitoring data collected pursuant to Sections 5.10, 6.6, 6.7, and 6.9. [District Rule 4311, 6.1]

Section 6.1.7

Section 6.1.7 requires keeping records, where applicable, to sections 5.10, 6.6, 6.7, ~~6.8~~, 6.9 and ~~6.10~~.

The following records shall be maintained, retained on-site for a minimum of five years, and made available to the APCO, ARB, and EPA upon request: 1) A copy of the compliance determination conducted pursuant to Section 6.4.1, 2) For flares used during an emergency, record of the duration of flare operation, amount of gas burned, and the nature of the emergency situation, 3) A copy of the approved flare minimization plan pursuant to Section 6.5, 4) On and after July 1, 2012, where applicable, a copy of annual reports submitted to the APCO pursuant to Section 6.2, and 5) *Where applicable, monitoring data collected pursuant to Sections 5.10, 6.6, 6.7, and 6.9.* [District Rule 4311, 6.1]

Section 6.2 Flare Reporting

Section 6.2 establishes reporting requirements for flares during an emergency.

Section 6.2.1 Unplanned Flaring Event

This section requires operator to report an unplanned flaring event (e.g. breakdown) within 24 hours after the start of the next business day or 24 hours of their discovery, whichever occurs first. The notification must include flare identification, start date and time, and the end date and time. The following condition ensures compliance with unplanned flaring event reporting:

The operator of a flare subject to flare minimization plans pursuant to Section 5.8 of Rule 4311 shall notify the APCO of an unplanned flaring event within 24 hours after the start of the next business day or within 24 hours of their discovery, whichever occurs first. The notification shall include the flare source identification, the start date and time, and the end date and time. [District Rule 4311, 6.2.1]

Section 6.2.2 Reportable Flaring Event

Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to Section 5.8 (FMP) shall submit an annual report to the APCO that summarizes all Reportable Flaring Events that occurred during the previous 12 month period. The report is to be submitted within 30 days following the end of the 12 month period of the previous year. Report must include the following:

- 6.2.2.1 Results of investigation to determine primary cause and contributing factors;
- 6.2.2.2 Any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures considered but not implemented.
- 6.2.2.3 If appropriate, an explanation why flaring was an emergency and necessary to prevent accident, hazard or release of vent gas to the atmosphere..., and
- 6.2.2.4 The date, time, and duration of the flaring event.

The following condition ensures compliance with unplanned flaring event reporting:

Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare minimization plans pursuant to Section 5.8 shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in Section 3.0 that occurred during the previous 12 month period. The report shall be submitted within 30 days following the end of the twelve month period of the previous year. The report shall include, but is not limited to all of the following: 1) The results of an investigation to determine the primary cause and contributing factors of the flaring event; 2) Any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented; 3) If appropriate, an explanation of why the flaring was an emergency and necessary to prevent accident, hazard or release of vent gas to the atmosphere, or where, due to a regulatory mandate to vent a flare, it cannot be recovered, treated and used as a fuel gas at the facility; and 4) The date, time, and duration of the flaring event. [District Rule 4311, 6.2.2]

Section 6.2.3 Annual Monitoring Reporting

Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to Section 5.10, 6.6, 6.7, ~~6.8~~, 6.9, and ~~6.10~~, as appropriate, shall submit an annual report to the APCO within 30 days following the end of each 12 month period. The report must include the following:

- 6.2.3.1 Total volumetric flow of vent gas in standard cubic feet for each day.
- 6.2.3.2 Hydrogen sulfide content, methane content, and hydrocarbon content of vent gas composition pursuant to Section 6.6
- 6.2.3.3 and 6.2.3.4 are not applicable. No continuous analyzer or flow monitor used pursuant to Section 5.10 which measures molecular weight.
- 6.2.3.5 For any pilot and purge gas used, the type of gas used, the volumetric flow for each day and for each month, and the means to determine the flow.
- 6.2.3.6 Flare monitoring system downtime periods, including dates and times.
- 6.2.3.7 Daily and monthly calculated sulfur dioxide emissions.
- 6.2.3.8 A flow verification report for each flare subject to this rule. The flow verification report shall include flow verification testing per Section 6.3.5.

Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare monitoring requirements pursuant to Rule 4311, Sections 5.10, 6.6, 6.7, 6.8, 6.9, and 6.10, as appropriate, shall submit an annual report to the APCO within 30 days following the end of each 12 month period. The report shall include the following: 1) The total volumetric flow of vent gas in standard cubic feet for each day, 2) Hydrogen sulfide content of vent gas composition pursuant to Section 6.6, 3) For any pilot and purge gas used, the type of gas used, the volumetric flow for each day and for each month, and the means used to determine flow, 4) Flare monitoring system downtime periods, including dates and times, 5) For each day and for each month provide calculated sulfur dioxide emissions, and 6) A flow verification report for each flare subject to this rule. The flow verification report shall include flow verification testing pursuant to Section 6.3.5. [District Rule 4311, 6.2.3 and 6.3.5]

Section 6.3 Test Methods

Any testing performed to show compliance with the Rule will be performed using the test methods identified in the Rule. The rule allows for alternate equivalent test methods provided the test methods have been approved by the APCO and EPA.

Section 6.3.1 through 6.3.3

These sections do not apply because no compliance testing (Section 6.4.2) is required for this flare. Compliance testing (6.4.2) only applies to flares subject to 5.7 (ground level enclosed flares). Emergency flares not subject to 5.6 or 5.7 (pursuant to Section 5.1), and source testing is only required for ground level enclosed flares (this flare does not meet the definition).

Section 6.3.4 Testing and Sampling Methods for flare monitoring:

Operators subject to Section 6.6 monitoring, shall use the following test methods as appropriate, or by an alternate method by the APCO, ARB and EPA:

- 6.3.4.1 Total hydrocarbon content and methane content of vent gas shall be determined using ASTM Method D 1945-96, ASTM Method UOP 539-97, EPA Method 18, or EPA Method 25A or 25B.

This flare is not subject to Sections 5.6, 5.7, therefore no hydrocarbon or methane content testing is required.

- 6.3.4.2 Hydrogen sulfide content of vent gas shall be determined using ASTM Method D-1945-96, ASTM Method UOP 539-97, ASTM Method D 4084-94, or ASTM Method D 4810-88.

This Section (test method) applies and will be listed in Section 6.6.5 imposed daily H₂S compliance monitoring condition.

- 6.3.4.3 and 6.3.4.4 apply to flares which monitor gas composition with a continuous analyzer, and are therefore not applicable to this flare.

Section 6.3.5 Flow verification Test Methods:

For the purposes of the flow verification report required by section 6.2.3.8 (for section 6.6, 6.7 and 6.9). Shall be determined using one of the following methods, or by any alternate method approved by the APCO, ARB and EPA:

- 6.3.5.1 EPA Methods 1 and 2;

- 6.3.5.2 A verification method recommended by the manufacturer of the flow monitoring equipment installed pursuant to section 5.10.

- 6.3.5.3 Tracer gas dilution or velocity.

- 6.3.5.4 Other flow monitors or process monitors that can provide comparison data on a vent stream that is being directed past the ultrasonic flow meter.

Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare monitoring requirements pursuant to Rule 4311, Sections 5.10, 6.6, 6.7, 6.8, 6.9, and 6.10, as appropriate, shall submit an annual report to the APCO within 30 days following the end of each 12 month period. The report shall include the following: 1) The total volumetric flow of vent gas in

standard cubic feet for each day, 2) Hydrogen sulfide content of vent gas composition pursuant to Section 6.6, 3) For any pilot and purge gas used, the type of gas used, the volumetric flow for each day and for each month, and the means used to determine flow, 4) Flare monitoring system downtime periods, including dates and times, 5) For each day and for each month provide calculated sulfur dioxide emissions, and 6) *A flow verification report for each flare subject to this rule. The flow verification report shall include flow verification testing pursuant to Section 6.3.5.* [District Rule 4311, 6.2.3 and 6.3.5]

Section 6.4 Compliance Determination

The requirements listed in sections 6.4.1 and 6.4.2 apply to flares subject to sections 5.6 and 5.7. This emergency flare is not subject to sections 5.6 or 5.7, therefore the requirements of 6.4.1 and 6.4.2 do not apply to this flare¹.

Section 6.5 Flare Minimization Plan

Section 6.5.1

Section 6.5.1 requires that by July 1, 2010, the operator of a petroleum refinery flare or any flare greater than 5.0 MMBtu/hr submit a flare minimization plan (FMP) to the APCO for approval. Chevron has a District approved FMP on file with the District.

Sections 6.5.2 and 6.5.3

Section 6.5.2 and 6.5.3 require an updated FMP be submitted every five years after the initial submittal, and with any new or modified equipment which results in an impact to emissions from the flare. The following condition ensures compliance:

Permittee shall submit an updated Flare Minimization Plan (FMP) 1) every five years after the initial FMP submittal, and 2) prior to installing new or modified equipment subject to 6.5.3.1 through 6.5.3.3. [District Rule 4311, 6.5]

Section 6.6 Vent Gas Composition Monitoring

Monitoring of vent gas composition using one of the methods listed in Sections 6.6.1 – 6.6.5 (as appropriate) is required for petroleum refinery flares or any flare \geq 50 MMBtu/hr.

Chevron has chosen the monitoring listed in Section 6.6.5

Section 6.6.5

Section 6.6.5 requires daily monitoring of sulfur content using a colorimetric tube system, and weekly monitoring of vent gas hydrocarbon pursuant to a method in 6.3.4. Hydrocarbon and methane content testing are not required by Sections 5.6 or 5.7, therefore hydrocarbon and methane content testing are not required.

Hydrogen sulfide testing is required. The following condition requires H₂S monitoring:

¹ Sections 5.6 and 5.7 would not apply even if the flare were not an emergency flare. Section 5.6 applies to flares operating at < 5 psig (this flare operates \geq 5 psig) and Section 5.7 applies to ground level enclosed flares (this flare is not an enclosed ground level flare as defined in Rule 4311).

Hydrogen sulfide content of vent gas shall be determined daily, on days when flaring occurs, using a calorimetric tube system and ASTM Method D 1945-96, ASTM Method UOP 539-97, ASTM Method D 4084-94, or ASTM Method D 4810-88. [District Rule 4311, 6.3.4.2 and 6.6.5]

Section 6.7 Pilot and Purge Gas Monitoring

Section 6.7 requires monitoring the volumetric flows of purge and pilot gases with flow measuring devices or other parameters. The flare is equipped with pilot and flare gas meters.

Flare shall be equipped with operational volumetric flow rate meter for each of the flared gas, pilot gas, and purge gas lines. [District Rules 2201 and 4311, 6.7]

Section 6.8 Water Seal Monitoring

Section 6.8 does not apply to this flare which does not have a water seal.

Section 6.9 General Monitoring

Section 6.9 includes general monitoring requirements for petroleum refinery flares or any flare with a capacity ≥ 50 MMBtu/hr, as applicable.

Section 6.9.1

Section 6.9.1 requires reporting of flow meter inoperation (if greater than 24 continuous hours) by the following working day. Total inoperation cannot exceed 14 days in any 18-consecutive-month period. Periods of flare monitoring system inoperation do not include the periods when the system feeding the flare is not operating.

The following condition ensures compliance:

Periods of flare monitoring system inoperation greater than 24 continuous hours shall be reported by the following working day, followed by notification of resumption of monitoring. Periods of inoperation of monitoring equipment shall not exceed 14 days per any 18-consecutive-month period. Periods of flare monitoring system inoperation do not include the periods when the system feeding the flare is not operating. [District Rule 4311, 6.9.1]

Section 6.9.2

Section 6.9.2 includes requirements for flares with continuous analyzers or auto-samplers. This flare does not have continuous analyzers or auto-samplers, therefore this section is not applicable.

Section 6.9.3

Section 6.9.3 requires monitors and recording devices to be maintained and calibrated in accordance with the Manufacturer's specifications.

All required monitors and recording devices shall be maintained in accordance with the applicable manufacturer's specifications. [District Rule 4311, 6.9.3]

Section 6.9.4

Section 6.9.4 requires all in-line continuous analyzers and flow monitoring data to be continuously recorded by a data acquisition system capable of one-minute averages. Flow monitoring data shall be recorded as one-minute averages.

The following condition ensures compliance:

All in-line continuous analyzer and flow monitoring data shall be continuously recorded by an electronic data acquisition system capable of one-minute averages. Flow monitoring data shall be recorded as one-minute averages. [District Rule 4311, 6.9.4]

Section 6.10 Video Monitoring

Section 6.10 applies to video monitoring of petroleum refinery flares. This section is not applicable to the emergency flare.

Compliance with Rule 4311 is expected.

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 (SO₂), on a dry basis averaged over 15 consecutive minutes, are not expected by the calculations shown below:

The discussion for Rule 4801 compliance for this flare, copied from previously approved District project S-1063949, is shown below:

The amount of air required to combust a waste gas stream is dependent on the type of gas combusted. Flare manufacturers either specify combustion air ranges consistent with AP-42, Section 13.5 and/or cite the results provided in USEPA document "Flare Efficiency Study", EPA-600/2-83-052; July 1983

Pursuant to USEPA document "Flare Efficiency Study" EPA-600/2-83-052; July 1983, EPA conducted physical testing/measurement to determine the amount of excess air available for air-assisted flares. Results of the study indicated that 19% to 20% oxygen is available in the air immediately adjacent to the flame front for open air flares. Accordingly, a calculation was performed at 19% oxygen level.

Worse case SO₂ emissions burning the proposed waste gas were calculated in the emissions calculations section as 33,728 lb-SO_x/day.

SO_x ppmvd @ 19% Oxygen (Per EPA-600/2-83-052; July 1983)

$$\text{ppmvd (SO}_2\text{)} = \frac{[(16.86 \text{ lb/MMBtu}) \times (379.5 \text{ cf/lb-mol}) \times (20.9 - 19.0) \times (10^6)]}{[(2000 \text{ dscf/MMBtu}) \times (64 \text{ lb/lb-mol}) \times (20.9)]}$$

$$\text{ppmvd (SO}_2\text{)} = \mathbf{1259 \text{ ppmvd}}$$

As demonstrated above, sulfur compounds emissions at the point of discharge is not expected to exceed 0.2 percent by volume, 2,000 ppmv, calculated as sulfur dioxide (SO₂), on a dry basis averaged over 15 consecutive minutes.

Continued compliance with Rule 4801 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.

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-1141-513-8 subject to the permit conditions on the attached draft ATC in Appendix E.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-1141-513-8	3020-02 H	167,000 KBtu/hr	1030\$

APPENDIX A
Quarterly Net Emissions Change (QNEC)

Permit #: S-1141-513-8	Last Updated
Facility: CHEVRON USA INC	07/18/2013 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):	1481.0	281066.0	566.0	8060.0	1372.0
Daily Emis. Limit (lb/Day)	137.0	33728.0	52.4	745.2	126.9
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	13971.0	0.0	0.0	0.0
Q2:	0.0	13971.0	0.0	0.0	0.0
Q3:	0.0	13971.0	0.0	0.0	0.0
Q4:	0.0	13971.0	0.0	0.0	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:					

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:

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

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

QNEC					
	PE1 (lb/yr)	PE1 (lb/qtr)	PE2 (lb/yr)	PE2 (lb/qtr)	QNEC (lb/qtr)
NOx	1,481	370	1,481	370	0
SOx	281,066	70,267	225,181	56,295	13,971
PM10	566	142	566	142	0
CO	8,060	2,015	8,060	2,015	0
VOC	1,372	343	1,372	343	0

APPENDIX B
PTO S-1141-513-7

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1141-513-7

EXPIRATION DATE: 02/29/2016

SECTION: SW9 TOWNSHIP: 32S RANGE: 23E

EQUIPMENT DESCRIPTION:

167 MM BTU/HR DUAL BLOWER AIR-ASSISTED EMERGENCY GROUND FLARE WITH KALDAIR AZDAIR PLA-12 FLARE TIP AND 9' DIA X 40' TALL FLAME ENCLOSURE SERVING TANK VAPOR RECOVERY EQUIPMENT LISTED ON S-1141-127, STATION 109

PERMIT UNIT REQUIREMENTS

1. Flare shall be equipped with operational volumetric flow rate meter for each of the flared gas, pilot gas, and purge gas lines. [District Rules 2201 and 4311, 6.7] Federally Enforceable Through Title V Permit
2. A heat sensing device such as a thermocouple, ultraviolet beam sensor, or an equivalent device, capable of continuously detecting at least one pilot flame or the flare flame is present shall be installed and operated. [District Rule 4311, 5.4] Federally Enforceable Through Title V Permit
3. A flame shall be present at all times when combustible gases are introduced to the flare. [District Rule 4311, 5.2] Federally Enforceable Through Title V Permit
4. Flare shall operate with a pilot flame present at all times when combustible gases are introduced to the flare. [District Rule 4311, 5.3] Federally Enforceable Through Title V Permit
5. 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 1/4 or 5% opacity. [District Rule 2010] Federally Enforceable Through Title V Permit
6. Flare shall be equipped with a purge gas and a continuous pilot, using solely PUC quality natural gas consisting primarily of methane containing no more than 5% by weight hydrocarbons heavier than butane. [District Rules 2201 and 4311, 5.3] Federally Enforceable Through Title V Permit
7. The total sulfur content of the pilot/purge gas shall not exceed 1.0 grain S/100 scf. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [District Rule 4801] Federally Enforceable Through Title V Permit
9. Flare shall operate only in emergencies except for pilot and purge gas and up to 200 hours per year of flare testing and maintenance. [District Rule 2201 and 4311, 5.1] Federally Enforceable Through Title V Permit
10. Maximum daily gas flow to flare shall not exceed any of the following limits: 14,020 scf pilot and purge gas combined; or 4,000,000 scf TVR/produced gas during non-emergency testing and maintenance. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Emissions from pilot fuel and purge gas shall not exceed any of the following limits: NO_x (as NO₂): 0.068 lb/MM Btu; VOC: 0.063 lb/MM Btu; CO: 0.37 lb/MM Btu; PM₁₀: 0.026 lb/MM Btu; or SO_x (as SO₂): 0.00285 lb/MM Btu. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Emissions from TVR/produced gas during non-emergency testing and maintenance shall not exceed any of the following limits: NO_x (as NO₂): 0.068 lb/MM Btu; VOC: 0.063 lb/MM Btu; CO: 0.37 lb/MM Btu; PM₁₀: 0.026 lb/MM Btu; or SO_x (as SO₂): 13.51 lb/MM Btu. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

13. Total sulfur content, as H₂S, of TVR/produced gas introduced to flare shall not exceed 40,000 ppmv. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Permittee shall, at least annually, measure and record sulfur content of pilot/purge gas. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Pilot/purge gas sulfur content shall be determined using method ASTM D 1072, grab sample analysis by GC-FPD/TCD performed in the laboratory, or by certified copies of the gas sulfur content from the gas supplier. [District Rule 1081] Federally Enforceable Through Title V Permit
16. The operator of a flare subject to flare minimization plans pursuant to Section 5.8 of Rule 4311 shall notify the APCO of an unplanned flaring event within 24 hours after the start of the next business day or within 24 hours of their discovery, whichever occurs first. The notification shall include the flare source identification, the start date and time, and the end date and time. [District Rule 4311, 6.2.1] Federally Enforceable Through Title V Permit
17. Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare minimization plans pursuant to Section 5.8 shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in Section 3.0 that occurred during the previous 12 month period. The report shall be submitted within 30 days following the end of the twelve month period of the previous year. The report shall include, but is not limited to all of the following: 1) The results of an investigation to determine the primary cause and contributing factors of the flaring event; 2) Any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented; 3) If appropriate, an explanation of why the flaring was an emergency and necessary to prevent accident, hazard or release of vent gas to the atmosphere, or where, due to a regulatory mandate to vent a flare, it cannot be recovered, treated and used as a fuel gas at the facility; and 4) The date, time, and duration of the flaring event. [District Rule 4311, 6.2.2] Federally Enforceable Through Title V Permit
18. Effective on and after July 1, 2012, and annually thereafter, the operator of a flare subject to flare monitoring requirements pursuant to Rule 4311, Sections 5.10, 6.6, 6.7, 6.8, 6.9, and 6.10, as appropriate, shall submit an annual report to the APCO within 30 days following the end of each 12 month period. The report shall include the following: 1) The total volumetric flow of vent gas in standard cubic feet for each day, 2) Hydrogen sulfide content of vent gas composition pursuant to Section 6.6, 3) For any pilot and purge gas used, the type of gas used, the volumetric flow for each day and for each month, and the means used to determine flow, 4) Flare monitoring system downtime periods, including dates and times, 5) For each day and for each month provide calculated sulfur dioxide emissions, and 6) A flow verification report for each flare subject to this rule. The flow verification report shall include flow verification testing pursuant to Section 6.3. [District Rule 4311, 6.2.3 and 6.3.5] Federally Enforceable Through Title V Permit
19. Permittee shall submit an updated Flare Minimization Plan (FMP) 1) every five years after the initial FMP submittal, and 2) prior to installing new or modified equipment subject to 6.5.3.1 through 6.5.3.3. [District Rule 4311, 6.5] Federally Enforceable Through Title V Permit
20. Hydrogen sulfide content of vent gas shall be determined daily, on days when flaring occurs, using a calorimetric tube system and ASTM Method D 1945-96, ASTM Method UOP 539-97, ASTM Method D 4084-94, or ASTM Method D 4810-88. [District Rule 4311, 6.3.4.2 and 6.6.5] Federally Enforceable Through Title V Permit
21. Periods of flare monitoring system inoperation greater than 24 continuous hours shall be reported by the following working day, followed by notification of resumption of monitoring. Periods of inoperation of monitoring equipment shall not exceed 14 days per any 18-consecutive-month period. Periods of flare monitoring system inoperation do not include the periods when the system feeding the flare is not operating. [District Rule 4311, 6.9.1] Federally Enforceable Through Title V Permit
22. All required monitors and recording devices shall be maintained in accordance with the applicable manufacturer's specifications. [District Rule 4311, 6.9.3] Federally Enforceable Through Title V Permit
23. All in-line continuous analyzer and flow monitoring data shall be continuously recorded by an electronic data acquisition system capable of one-minute averages. Flow monitoring data shall be recorded as one-minute averages. [District Rule 4311, 6.9.4] Federally Enforceable Through Title V Permit
24. Permittee shall maintain accurate records of sulfur content and daily volume of TVR/produced gas, pilot gas, and purge gas introduced to flare. [District Rule 1070] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

25. Permittee shall maintain accurate records of the hours of operation and the amount of TVR/produced gas combusted during maintenance and testing. [District Rule 1070] Federally Enforceable Through Title V Permit
26. The following records shall be maintained, retained on-site for a minimum of five years, and made available to the APCO, ARB, and EPA upon request: 1) A copy of the compliance determination conducted pursuant to Section 6.4.1, 2) For flares used during an emergency, record of the duration of flare operation, amount of gas burned, and the nature of the emergency situation, 3) A copy of the approved flare minimization plan pursuant to Section 6.5, 4) On and after July 1, 2012, where applicable, a copy of annual reports submitted to the APCO pursuant to Section 6.2, and 5) Where applicable, monitoring data collected pursuant to Sections 5.10, 6.6, 6.7, and 6.9. [District Rule 4311, 6.1] Federally Enforceable Through Title V Permit
27. Records shall be retained for a minimum of 5 years and shall be made readily available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.

APPENDIX C

BACT Guideline and Top-Down BACT Analysis

**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 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 scrubbing system (non-emergency flares only.)	SOx (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. For background information, see Permit Specific BACT Determinations on Details Page.

Top Down BACT Analysis for SOx

Step 1 - Identify All Control Technologies

Steam assisted or air-assisted or Coanda effect burner, when steam unavailable
(Achieved in Practice)

Pilot light fired solely on LPG or natural gas (Achieved in Practice)

Precombustion SOx scrubbing system (non-emergency flares only)-Technologically
feasible

Step 2 - Eliminate Technologically Infeasible Options

The unit is an emergency flare; therefore, precombustion SOx scrubbing is eliminated

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Steam assisted or air-assisted or Coanda effect burner, when steam unavailable
(Achieved in Practice)

Pilot light fired solely on LPG or natural gas (Achieved in Practice)

Step 4 - Cost Effectiveness Analysis

The applicant has proposed the remaining options from Step 3; air-assisted when
steam unavailable and pilot light fired solely on LPG or natural gas. Therefore, a cost
analysis is not required.

Step 5 - Select BACT

air-assisted when steam unavailable and pilot light fired solely on LPG or natural
gas

**APPENDIX D
HRA and AAQA**

San Joaquin Valley Air Pollution Control District

Risk Management Review

To: David Torii – Permit Services
 From: Kyle Melching – Technical Services
 Date: July 17, 2013
 Facility Name: Chevron USA Inc.
 Location: SW Sec. 9, T32S, R23E
 Application #(s): S-1141-513-8
 Project #: S-1132787

A. RMR SUMMARY

RMR Summary			
Categories	Waste Gas Flare (Unit 513-8)	Project Totals	Facility Totals
Prioritization Score	0.00 ¹	0.00	>1.0
Acute Hazard Index	N/A	N/A	0.04
Chronic Hazard Index	N/A	N/A	0.04
Maximum Individual Cancer Risk (10 ⁻⁶)	N/A	N/A	1.05E-06
T-BACT Required?	No		
Special Permit Conditions?	Yes		

¹A prioritization was not performed after determining no increases to H2S emissions associated with this project. No further analysis was required.

Proposed Permit Conditions

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

Unit # 513-8

1. The flare is limited to 200 hours for testing and maintenance annually.
2. This unit must be at least **1000 feet** away from the property boundary.
3. The flare's destruction efficiency for H2S is 100%.

B. RMR REPORT

I. Project Description

Technical Services received a request on July 5, 2013, to perform an Ambient Air Quality Analysis and a Risk Management Review for an increase in flare S-1141-513's fuel H2S concentration limit. The flare has a 100% destruction efficiency for H2S.

II. Analysis

After reviewing the information provided in the Risk Management Review request for the proposed flare, Technical Services determined that since there no increases in H2S emissions associated with this project; no further analysis or prioritization was required for this project.

The following parameters were used for the review:

Analysis Parameters Unit 513-8			
Source Type	Point	Location Type	Rural
Stack Height (m)	12.2	Closest Receptor (m)	914
Stack Diameter. (m)	2.74	Type of Receptor	Residential/ Business
Stack Exit Velocity (m/s)	9.63	Max Hours per Year	200
Stack Exit Temp. (°K)	1273	Fuel Type	Waste gas

Technical Services performed modeling for criteria pollutants CO, NO_x, SO_x and PM₁₀. The emission rates used for criteria pollutant modeling were 0 lb/yr CO, 0 lb/yr NO_x, 56,252 lb/yr SO_x, and 0 lb/yr PM₁₀. Per Leland, the acceptable Analysis Parameters for the flare are seen above.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Emergency Flare	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	N/A ¹	X	N/A ¹	X	X
NO _x	N/A ¹	X	X	X	Pass
SO _x	N/A ¹	N/A ¹	X	N/A ¹	Pass
PM ₁₀	X	X	X	N/A ¹	Pass ²
PM _{2.5}	X	X	X	N/A ¹	Pass ²

*Results were taken from the attached PSD spreadsheet.

¹ The project is an intermittent source as defined in APR-1920. In accordance with APR-1920, compliance with short-term (i.e., 1-hour, 3-hour, 8-hour, and 24-hour) standards is not required.

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

III. Conclusion

The proposed project will not contribute to the facility's risk. 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.

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

IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Flare Modeling Parameter Estimator
- D. Facility Summary
- E. AAQA Summary

APPENDIX E
Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-1141-513-8

ISSUANCE DATE: DRAFT

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

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
CA

SECTION: SW9 TOWNSHIP: 32S RANGE: 23E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 167 MM BTU/HR DUAL BLOWER AIR-ASSISTED EMERGENCY GROUND FLARE WITH KALDAIR AZDAIR PLA-12 FLARE TIP AND 9' DIA X 40' TALL FLAME ENCLOSURE SERVING TANK VAPOR RECOVERY EQUIPMENT LISTED ON S-1141-127, STATION 109: INCREASE WASTE GAS H2S CONCENTRATION LIMIT

CONDITIONS

1. This unit must be at least 1000 feet away from the property boundary. [District Rule 4102]
2. Flare shall be equipped with operational volumetric flow rate meter for each of the flared gas, pilot gas, and purge gas lines. [District Rules 2201 and 4311, 6.7] Federally Enforceable Through Title V Permit
3. A heat sensing device such as a thermocouple, ultraviolet beam sensor, or an equivalent device, capable of continuously detecting at least one pilot flame or the flare flame is present shall be installed and operated. [District Rule 4311, 5.4] Federally Enforceable Through Title V Permit
4. A flame shall be present at all times when combustible gases are introduced to the flare. [District Rule 4311, 5.2] Federally Enforceable Through Title V Permit
5. Flare shall operate with a pilot flame present at all times when combustible gases are introduced to the flare. [District Rule 4311, 5.3] Federally Enforceable Through Title V Permit
6. 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 1/4 or 5% opacity. [District Rule 2010] Federally Enforceable Through Title V Permit

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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-1141-513-8 : Aug 2 2013 12:08PM - TORID : Joint Inspection Required with TORID

7. Flare shall be equipped with a purge gas and a continuous pilot, using solely PUC quality natural gas consisting primarily of methane containing no more than 5% by weight hydrocarbons heavier than butane. [District Rules 2201 and 4311, 5.3] Federally Enforceable Through Title V Permit
8. The total sulfur content of the pilot/purge gas shall not exceed 1.0 grain S/100 scf. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Sulfur compound emissions shall not exceed 0.2% by volume, 2000 ppmv, on a dry basis averaged over 15 consecutive minutes. [District Rule 4801] Federally Enforceable Through Title V Permit
10. Flare shall operate only in emergencies except for pilot and purge gas and up to 200 hours per year of flare testing and maintenance. [District Rule 2201 and 4311, 5.1] Federally Enforceable Through Title V Permit
11. Maximum daily gas flow to flare shall not exceed any of the following limits: 14,020 scf pilot and purge gas combined; or 4,000,000 scf TVR/produced gas during non-emergency testing and maintenance. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Emissions from pilot fuel and purge gas shall not exceed any of the following limits: NO_x (as NO₂): 0.068 lb/MM Btu; VOC: 0.063 lb/MM Btu; CO: 0.37 lb/MM Btu; PM₁₀: 0.026 lb/MM Btu; or SO_x (as SO₂): 0.00285 lb/MM Btu. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Emissions from TVR/produced gas during non-emergency testing and maintenance shall not exceed any of the following limits: NO_x (as NO₂): 0.068 lb/MM Btu; VOC: 0.063 lb/MM Btu; CO: 0.37 lb/MM Btu; PM₁₀: 0.026 lb/MM Btu; or SO_x (as SO₂): 16.864 lb/MM Btu. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Total sulfur content, as H₂S, of TVR/produced gas introduced to flare shall not exceed 50,000 ppmv. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Permittee shall, at least annually, measure and record sulfur content of pilot/purge gas. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Pilot/purge gas sulfur content shall be determined using method ASTM D 1072, grab sample analysis by GC-FPD/TCD performed in the laboratory, or by certified copies of the gas sulfur content from the gas supplier. [District Rule 1081] Federally Enforceable Through Title V Permit
17. The operator of a flare subject to flare minimization plans pursuant to Section 5.8 of Rule 4311 shall notify the APCO of an unplanned flaring event within 24 hours after the start of the next business day or within 24 hours of their discovery, whichever occurs first. The notification shall include the flare source identification, the start date and time, and the end date and time. [District Rule 4311, 6.2.1] Federally Enforceable Through Title V Permit
18. The operator shall submit an annual report to the APCO that summarizes all Reportable Flaring Events as defined in Section 3.0 that occurred during the previous 12 month period. The report shall be submitted within 30 days following the end of the twelve month period of the previous year. The report shall include, but is not limited to all of the following: 1) The results of an investigation to determine the primary cause and contributing factors of the flaring event; 2) Any prevention measures considered or implemented to prevent recurrence together with a justification for rejecting any measures that were considered but not implemented; 3) If appropriate, an explanation of why the flaring was an emergency and necessary to prevent accident, hazard or release of vent gas to the atmosphere, or where, due to a regulatory mandate to vent a flare, it cannot be recovered, treated and used as a fuel gas at the facility; and 4) The date, time, and duration of the flaring event. [District Rule 4311, 6.2.2] Federally Enforceable Through Title V Permit
19. The operator shall submit an annual report to the APCO within 30 days following the end of each 12 month period. The report shall include the following: 1) The total volumetric flow of vent gas in standard cubic feet for each day, 2) Hydrogen sulfide content of vent gas composition pursuant to Section 6.6, 3) For any pilot and purge gas used, the type of gas used, the volumetric flow for each day and for each month, and the means used to determine flow, 4) Flare monitoring system downtime periods, including dates and times, 5) For each day and for each month provide calculated sulfur dioxide emissions, and 6) A flow verification report for each flare subject to this rule. The flow verification report shall include flow verification testing pursuant to Section 6.3. [District Rule 4311, 6.2.3 and 6.3.5] Federally Enforceable Through Title V Permit
20. Permittee shall submit an updated Flare Minimization Plan (FMP) 1) every five years after the initial FMP submittal, and 2) prior to installing new or modified equipment subject to 6.5.3.1 through 6.5.3.3. [District Rule 4311, 6.5] Federally Enforceable Through Title V Permit

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21. Hydrogen sulfide content of vent gas shall be determined daily, on days when flaring occurs, using a calorimetric tube system and ASTM Method D 1945-96, ASTM Method UOP 539-97, ASTM Method D 4084-94, or ASTM Method D 4810-88. [District Rule 4311, 6.3.4.2 and 6.6.5] Federally Enforceable Through Title V Permit
22. Periods of flare monitoring system inoperation greater than 24 continuous hours shall be reported by the following working day, followed by notification of resumption of monitoring. Periods of inoperation of monitoring equipment shall not exceed 14 days per any 18-consecutive-month period. Periods of flare monitoring system inoperation do not include the periods when the system feeding the flare is not operating. [District Rule 4311, 6.9.1] Federally Enforceable Through Title V Permit
23. All required monitors and recording devices shall be maintained in accordance with the applicable manufacturer's specifications. [District Rule 4311, 6.9.3] Federally Enforceable Through Title V Permit
24. All in-line continuous analyzer and flow monitoring data shall be continuously recorded by an electronic data acquisition system capable of one-minute averages. Flow monitoring data shall be recorded as one-minute averages. [District Rule 4311, 6.9.4] Federally Enforceable Through Title V Permit
25. Permittee shall maintain accurate records of sulfur content and daily volume of TVR/produced gas, pilot gas, and purge gas introduced to flare. [District Rule 1070] Federally Enforceable Through Title V Permit
26. Permittee shall maintain accurate records of the hours of operation and the amount of TVR/produced gas combusted during maintenance and testing. [District Rule 1070] Federally Enforceable Through Title V Permit
27. The following records shall be maintained, retained on-site for a minimum of five years, and made available to the APCO, ARB, and EPA upon request: 1) A copy of the compliance determination conducted pursuant to Section 6.4.1, 2) For flares used during an emergency, record of the duration of flare operation, amount of gas burned, and the nature of the emergency situation, 3) A copy of the approved flare minimization plan pursuant to Section 6.5, 4) On and after July 1, 2012, where applicable, a copy of annual reports submitted to the APCO pursuant to Section 6.2, and 5) Where applicable, monitoring data collected pursuant to Sections 5.10, 6.6, 6.7, and 6.9. [District Rule 4311, 6.1] Federally Enforceable Through Title V Permit
28. Records shall be retained for a minimum of 5 years and shall be made readily available for District inspection upon request. [District Rule 1070] Federally Enforceable Through Title V Permit

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