



OCT 1 8 2012

James Leal PROs Inc PO Box 20996 Bakersfield, CA 93390

**Notice of Preliminary Decision - Authority to Construct** Re:

Project Number: S-1123618

Dear Mr. Leal:

Enclosed for your review and comment is the District's analysis of PROs Inc's application for an Authority to Construct for a multiple use transportable flare, at various unspecified locations, SJVAPCD.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. Please submit your written comments on this project within the 30-day public comment period which begins on the date of publication of the public notice.

Thank you for your cooperation in this matter. If you have any guestions regarding this matter, please contact Mr. Richard Edgehill of Permit Services at (661 392-5617.

Sincerely,

David Warner

**Director of Permit Services** 

DW: RUE/cm

**Enclosures** 





OCT 1 8 2012

Mike Tollstrup, Chief Project Assessment Branch Stationary Source Division California Air Resources Board PO Box 2815 Sacramento, CA 95812-2815

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Enclosed for your review and comment is the District's analysis of PROs Inc's application for an Authority to Construct for a multiple use transportable flare, at various unspecified locations, SJVAPCD.

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Sincerely,

David Warner

Director of Permit Services

DW: RUE/cm

Enclosure

Southern Region

#### Bakersfield Californian

# 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 PROs Inc for a multiple use transportable flare, at various unspecified locations, SJVAPCD.

The analysis of the regulatory basis for this proposed action, Project #S-1123618, is available for public inspection at http://www.valleyair.org/notices/public\_notices\_idx.htm and the District office at the address below. Written comments on this project must be submitted within 30 days of the publication date of this notice 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

Portable Well Test Flare

Facility Name: PROS, Inc. Date: October 16, 2012

Mailing Address: P.O. Box 20996 Engineer: Richard Edgehill

Bakersfield, CA 93390 Lead Engineer: Richard Karrs

Contact Person: James Leal Mike Cline

Telephone: 661-589-5400/Wkd: 661-343-2842 Wkd: 661-201-3446

Fax: 661-589-5228

E-Mail: jimmy@proswelltesting.com

Application #(s): S-7045-20-0

Project #: S-1123618

Deemed Complete: October 2, 2012

#### I. Proposal

PROS, Inc. (Pros) has requested an Authority to Construct (ATC) for a transportable flare for multiple uses including well testing, mitigation of gas kicks during drilling operations, equipment depressurization for maintenance purposes, flaring of gas at production sources where no gas handling, gas injection, or gas transmission facilities exist, and pipeline pigging. The flare will be authorized to operate at various unspecified locations, SJVAPCD. Flared gas flow rate will be limited to 3 MMscf/day and 288 MMscf/yr.

Please note that District Policy SSP 1915 requires that transportable flares be permitted according to District Policy APR 1020 which states that "an emissions unit with various <u>unspecified locations</u> must be prevented (by permit condition) from becoming part of another separate stationary source." The following condition from APR 1020 will be placed on the permit to reflect this requirement:

Unit must not be located and operated at an existing facility or operation such that it becomes part of an existing stationary source as defined by District Rule 2201. [District Rule 2201]

PROs facility S-7045 includes PTOs S-7045-1-0 through '-15-0 and ATCs S-7045-16-0 through '-19-0 for transportable well testing operations with flares. Each of these operations is considered as a separate stationary source and therefore two or more S-7045 units may not be operated at the same location simultaneously.

The following condition will be placed on the ATC:

Flare shall not be operated at any location in conjunction with any other flare or combustion equipment operated by PROs Inc. [District Rule 2201] N

The project requires BACT and public notice. Offsets are not required.

## II. Applicable Rules

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### III. Project Location

The equipment will be authorized to operate at various unspecified locations within the District. However, the equipment is restricted by permit condition not to be 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

As stated in the proposal section the flare will be used for well testing, mitigation of gas kicks during drilling mud recirculation, equipment depressurization for maintenance purposes, flaring of gas at production sources where no gas handling, gas injection, or gas transmission facilities exist, and pipeline pigging.

The flare is equipped with a continuous propane pilot and automatic ignition.

A photograph and diagrams of the flare are included in **Attachment I**.

#### V. Equipment Listing

Post Project Equipment Description:

S-7045-20-0: TRANSPORTABLE 125 MMBTU/HR FLARE WITH OPTIONAL AIR-ASSIST FOR MULTIPLE USES INCLUDING WELL TESTING AND DRILLING OPERATIONS, EQUIPMENT DEPRESSURIZATION, AND PIPELINE PIGGING OPERATED AT VARIOUS UNSPECIFIED LOCATIONS, SJVAPCD

## VI. Emission Control Technology Evaluation

Emissions from the flare include oxides of nitrogen (NOx), carbon monoxide (CO), oxides of sulfur (SOx), volatile organic compounds (VOCs), and particulate emissions less than 10 micron (PM10).

#### Air Assist

Smoking may result from incomplete combustion due to the quantity and distribution of combustion air. Air assist ensures that the flare has enough air and turbulence to completely combust the gases for smokeless operation.

### Propane Pilot and Automatic Ignition System

The flare will operate with a continuous propane/natural gas pilot and an automatic ignition system.

#### Sulfur Emissions

Sulfur emissions from the flare are expected not to exceed 5.0 gr S/100 scf. Therefore sulfur scrubbing is not required.

#### Visibility and VOC Control

Flares typically operate at 99% control efficiency for VOC. The well test flare being authorized by this project will be equipped with a shroud to reduce flame visibility, improve thermal destruction efficiency, and to prevent down drafts from extinguishing the flame.

#### VII. General Calculations

#### A. Assumptions

- Heating value of flared gas is 1,000 Btu/scf (proposed and APR 1720)
- The flared natural gas will have a H<sub>2</sub>S content less than 5 gr/100 scf, measured as sulfur (proposed)
- Fugitive emissions are considered to be negligible compared to combustion VOC emissions from the flare.
- Flow rate of propane pilot gas is 1080 scf/day (email 10-2-12). However, pilot gas combustion emissions are assumed to be negligible when compared to emissions resulting from combustion of produced gas.
- The maximum quantity of flared gas is 0.125 MMscf/hr (125 MMBtu/hr), 3 MMscf/day (3000 MMBtu/day), 288 MMscf/yr (288,000 MMBtu/yr)

### **B.** Emission Factors

	Flare Emission Factors					
	lb/MMBtu	Source				
NO <sub>X</sub>	0.068	FYI 83 (AP 42 Sec 13.5)				
*SO <sub>X</sub>	0.0143	Mass Balance Equation				
PM <sub>10</sub>	0.008	FYI 83 (AP 42 Sec 13.5), Applicant Proposed				
СО	0.37	FYI 83 (AP 42 Sec 13.5)				
VOC	0.063	FYI 83 (AP 42 Sec 13.5)				

$$\star \frac{5\,gr \cdot S}{100\,dscf} \left(\frac{dscf}{1,000\,Btu}\right) \frac{10^6\,Btu}{MMBtu} \left(\frac{1lb}{7,000\,gr}\right) \frac{64\,lb \cdot SO_2}{32\,lb \cdot S} = 0.0143 \frac{lb \cdot SO_2}{MMBtu}$$

### C. Calculations

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

The proposed flare is new and therefore PE1 = 0.

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

,,,,		Da	ily PE2	fig. 5
Pollutant	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE2 (lb/day)
NO <sub>X</sub>	0.068	125	24	204.0
SO <sub>X</sub>	0.01430	125	24	42.9
PM <sub>10</sub>	0.0080	125	24	24.0
СО	0.370	125	24	1,110.0
VOC	0.0630	125	24	189.0

,		Annual PE2	
Pollutant	EF2 (lb/MMBtu)	Heat Input (MMBtu/year)	Annual PE2 (lb/year)
NO <sub>X</sub>	0.068	288,000	19,584
so <sub>x</sub>	0.01430	288,000	4,118
PM <sub>10</sub>	0.0080	288,000	2,304
CO	0.370	288,000	106,560
Voc	0.0630	288,000	18,144

The emissions profile is included in Attachment II.

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

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (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 that have occurred at the source, and which have not been used on-site.

Since the flare is new and considered its own stationary source, SSPE1 is zero.

Pre Project Stationary Source Potential to Emit [SSPE1] (lb/year)						
Permit Unit	NO <sub>X</sub>	SO <sub>X</sub>	PM <sub>10</sub>	СО	VOC	
S-7045-20-0	0	0	0	0	0	
Pre Project SSPE (SSPE1)	0	0	0	0	0	

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

Pursuant to Section 4.10 of District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) 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 that have occurred at the source, and which have not been used on-site. Since each flare is considered its own stationary source, the SSPE2 will be calculated for each unit.

Post Project Stationary Source Potential to Emit [SSPE2] (lb/year)							
Permit Unit	NO <sub>X</sub>	SO <sub>X</sub>	PM <sub>10</sub>	CO	VOC		
S-7045-20-0	19,584	4,118	2,304	106,560	18,144		
Post Project SSPE (SSPE2)	19,584	4,118	2,304	106,560	18,144		

#### 5. Major Source Determination

Pursuant to Section 3.25 of District Rule 2201, a major source is a stationary source with post-project emissions or a Post Project Stationary Source Potential to Emit (SSPE2), equal to or exceeding one or more of the following threshold values. However, Section 3.25.2 states, "for the purposes of determining major source status, the SSPE2 shall not include the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

Major Source Determination (lb/year)						
	NO <sub>X</sub>	SO <sub>X</sub>	PM <sub>10</sub>	CO	VOC	
Pre-Project SSPE (SSPE1)	0	0	0	0	0	
Post Project SSPE (SSPE2)	19,584	4,118	2,304	106,560	18,144	
Major Source Threshold	50,000	140,000	140,000	200,000	50,000	
Major Source?	No	No	No	No	No	

As seen in the table above, the well test flare is not a Major Source.

#### 6. Baseline Emissions (BE)

BE = Pre-project Potential to Emit for:

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

otherwise.

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.23

As shown in Section VII.C.5 above, the facility is not a Major Source for any criteria pollutant.

Therefore Baseline Emissions (BE) are equal to the Pre-Project Potential to Emit (PE1).

Since the unit is a new emissions unit, BE = PE1 = 0 for all criteria pollutants.

## 7. SB 288 Major Modification

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

Since this facility is not a major source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification.

## 8. Federal Major Modification

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

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification. Additionally, since the facility is not a major source for PM<sub>10</sub> (140,000 lb/year), it is not a major source for PM2.5 (200,000 lb/year).

## 9. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen.

QNEC (lb/qtr) = PE2 (lb/qtr) - QBE (lb/qtr)

Quarterly NEC						
Pollutant	PE2 (lb/qtr)	QBE (lb/qtr)	QNEC (lb/qtr)			
NO <sub>x</sub> 4896		0	4896			
SO <sub>x</sub>	1030	0	1030			
PM <sub>10</sub>	576	0	576			
СО	26,640	0	26,640			
VOC	4536	0	4536			

#### VIII. Compliance

#### **Rule 2020 Exemptions**

Section 6.14 states that "fugitive emissions sources and pressure vessels that are associated with an emissions unit for which a written permit is required shall be included as part of such emissions unit. A separate permit for the fugitive source or pressure vessel is not required. Therefore the three phase separator does not require a separate permit.

Compliance is expected.

## Rule 2201 New and Modified Stationary Source Review Rule

#### A. Best Available Control Technology (BACT)

Rule 1020, Section 3.46 excludes air pollution abatement operations from the definition of "source operation". Since the well test flare is designed to control the VOC and  $H_2S$  emissions from the well, the flare is considered an air pollution abatement operation and is not an emissions unit. Therefore, the well drilling and testing operation may be subject to BACT, but the flare used as a control device is not.

#### 1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following\*:

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

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

## a. New emissions units - PE > 2 lb/day

As seen in Section VII.C.2 of this evaluation, the applicant is proposing to install a well drilling and testing operation with PE greater than 2 lb/day for  $NO_X$ ,  $SO_X$ ,  $PM_{10}$ , CO, and VOC. As discussed in Section VI above, the flare is a VOC control device (not emissions units) and therefore BACT is triggered only for VOC only.

## b. Relocation of emissions units - PE > 2 lb/day

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

## c. Modification of emissions units - AIPE > 2 lb/day

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

## d. Major Modification

As discussed in Section VII.C.7 above, this project does not constitute a Major Modification; therefore BACT is not triggered.

#### 2. BACT Guideline

BACT Guideline 1.4.7 applies to [Waste Gas Flare – Oilfield Well Drilling and Testing Operation, < 50 MMscf/day].

BACT Guideline 7.1.13 applies to [Petroleum Storage Tank and Pipeline Degassing – Mobile Operation].

#### See Attachment III.

## 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 **Attachment IV**), BACT has been satisfied with the following:

NO<sub>X</sub>: Not applicable SO<sub>X</sub>: Not applicable PM<sub>10</sub>: Not applicable

VOC: Elevated flare with automatic ignition system (equivalent to propane fueled pilot light) – for well testing

98% or greater control efficiency with flare - for equipment depressurization

#### B. Offsets

## 1. Offset Applicability

Pursuant to Section 4.5.3, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post Project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 or Rule 2201.

The following table compares the post-project facility-wide annual emissions in order to determine if offsets will be required for this project.

Offset Determination (lb/year)					
	NO <sub>X</sub>	SO <sub>X</sub>	PM <sub>10</sub>	СО	VOC
Post Project SSPE (SSPE2)	19,584	4,118	2,304	106,560	18,144
Offset Threshold	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	No

## 2. Quantity of Offsets Required

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

#### C. Public Notification

## 1. Applicability

Public noticing is required for:

- a. New Major Sources and Major Modifications
- b. Applications which include a new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Modifications that increase the Stationary Source Potential to Emit (SSPE1) from a level below the emissions offset threshold level to a level exceeding the emissions offset threshold level for one or more pollutants;
- d. New stationary sources with a post-project Stationary Source Potential to Emit (SSPE2) exceeding the emissions offset threshold level for one or more pollutants;

e. Any permitting action resulting in a Stationary Source Project Increase in Permitted Emissions (SSIPE) exceeding 20,000 lb/year per 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. As shown in Section VII.C.5 above, the SSPE2 is not greater than the Major Source threshold for any pollutant. Therefore, public noticing is not required for this project for new Major Source purposes.

As demonstrated in VII.C.7, this project does not constitute an SB 288 or Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is not required.

## b. PE > 100 lb/day

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

PE > 100 lb/day Public Notice Thresholds					
Pollutant	PE2	Public Notice	Public Notice		
1 Ollutarit	(lb/day)	Threshold	Triggered?		
NO <sub>X</sub>	204.0	100 lb/day	Yes		
SO <sub>X</sub>	42.9	100 lb/day	No		
PM <sub>10</sub>	24.0	100 lb/day	No		
CO	1,110.0	100 lb/day	Yes		
VOC	189.0	100 lb/day	Yes		

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

#### c. Offset Threshold

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

	Offset Thresholds							
Pollutant	SSPE1	SSPE2	Offset	Public Notice				
Ponutant	(lb/year)	(lb/year)	Threshold	Required?				
NO <sub>X</sub>	0	19,584	20,000 lb/year	No				
SO <sub>X</sub>	0	4,118	54,750 lb/year	No				
PM <sub>10</sub>	0	2,304	29,200 lb/year	No				
CO	0	106,560	200,000 lb/year	No				
VOC	0	18,144	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.

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

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. SSIPE = SSPE2 – SSPE1. The values for SSPE2 and SSPE1 are calculated according to Rule 2201, Sections 4.9 and 4.10, respectively. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table:

Stational	Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice							
Dellutont	SSPE2	SSPE1	SSIPE	SSIPE Public	Public Notice			
Pollutant	(lb/year)	(lb/year)	(lb/year)	Notice Threshold	Required?			
NO <sub>x</sub>	19,584	0	19,584	20,000 lb/year	No			
SO <sub>x</sub>	4,118	0	4,118	20,000 lb/year	No			
PM <sub>10</sub>	2,304	0	2,304	20,000 lb/year	No			
СО	106,560	0	106,560	20,000 lb/year	Yes			
VOC	18,144	0	18,144	20,000 lb/year	No			

As demonstrated above, the SSIPE for CO 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 daily emissions in excess of 100 lb/day and SSIPE greater than 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 ATCs for this equipment.

#### D. Daily Emission Limits (DELs)

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.15 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.15.1 and 3.15.2, 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:

Emission rates shall not exceed any of the following: 0.008 lb-PM10/Mscf, 0.068 lb-NOx/Mscf (as NO2), 0.063 lb-VOC/Mscf, or 0.37 lb-CO/Mscf. [District Rule 2201]

Sulfur compound concentration of gas flared shall not exceed 5 gr/100 scf. [District Rule 2201]

Daily and annual amounts of gas flared shall not exceed 3.0 MMscf/day and 288 MMscf/yr. [District rule 2201]

## E. Compliance Assurance

### 1. Source Testing

The following testing condition is included on the proposed ATC:

Permittee shall document compliance with well gas sulfur compound concentration limit by performing sulfur content analysis of well gas upon startup at each new location of operation of flare. [District Rule 2201] N

Permittee shall document compliance with well gas sulfur compound concentration limit by performing sulfur content analysis of well gas upon startup at each new location of operation of flare. [District Rule 2201] N

### 2. Monitoring

The following monitoring condition is included:

Permittee shall inspect the flare in operation for visible emissions no less frequently than once every two weeks. If visible emissions are observed, corrective action shall be taken. If visible emissions persist, an EPA Method 9 test shall be performed within 72 hours. [District Rule 2201] N

#### 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) will appear on the permit to operate:

Permittee shall maintain accurate daily records indicating flare location, flared gas sulfur content at each location, and daily and annual rates of gas flared; and such records shall be made readily available for District inspection upon request for a minimum of 5 years. [District Rule 2201] N

#### 4. Reporting

The facility is required to report the location at which the flare is operating. The following condition will be placed on the permit to show compliance with this section.

Permittee shall notify the District Compliance Division of each location at which the operation is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 2201]

## F. Ambient Air Quality Analysis

Section 4.14 of this Rule requires that an ambient air quality analysis (AAQA) 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. Technical Services Division performed modeling for criteria pollutants CO, NOx, SOx and PM10. The results from the Criteria Modeling are as follows:

The results from the Criteria Pollutant Modeling are as follows:

#### Criteria Pollutant Modeling Results\*

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

<sup>\*</sup>Results were taken from the attached PSD spreadsheet.

As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for  $NO_X$ , CO, PM10, or  $SO_X$ . Refer to **Attachment V** of this document for the full AAQA report from Technical Services.

## Rule 2520 Federally Mandated Operating Permits

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

#### Rule 4101 Visible Emissions

Per Section 5.0, no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). Per FYI 83, when BACT is required for PM<sub>10</sub> the visible emissions will be limited to less than Ringelmann ¼ and less than 5% opacity. As long as the flaring system (with air assist) is operating correctly, compliance with this rule is expected.

#### Rule 4102 Nuisance

Section 4.0 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 (**Attachment V**), 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:

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

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

HRA Summary		š.,
Unit	Cancer Risk	T-BACT Required
S-7045-20	1.2 per million	Yes

#### 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 required for this project because the HRA indicates that the risk is above the District's thresholds for triggering T-BACT requirements.

For this project T-BACT is triggered for PM10 and VOC. T-BACT is satisfied with BACT for PM10 and VOC which is an air assisted flare (BACT Guideline 2.4.2 "Waste Gas Flare – Incinerating Produced Gas"-Attachment III).

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

#### Unit # 20-0

- The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
- 2. Flare shall not be operated at any location in conjunction with any other flare or combustion equipment operated by PROs Inc. [District Rule 2201] N
- 3. Flare shall always operate at least 30.5 meters away from any property boundary and at least 457 meters away from a receptor. [District Rule 4102] N

The results of the HRA is included in **Attachment V**.

#### 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. For natural gas the EPA F-factor (adjusted to 60°F) is 8710 dscf/MMBtu (40 CFR 60 Appendix B).

PM<sub>10</sub> Emission Factor: 0.008 lb-PM<sub>10</sub>/MMBtu

Percentage of PM as PM<sub>10</sub> in Exhaust: 100% Exhaust Oxygen (O<sub>2</sub>) Concentration: 3%

Excess Air Correction to F Factor = 20.9 = 1.17

$$GL = \left(\frac{0.008 \ lb - PM}{MMBtu} \times \frac{7,000 \ grain}{lb - PM}\right) / \left(\frac{8,710 \ ft^3}{MMBtu} \times 1.17\right)$$

 $GL = 0.0055 \ grain/dscf < 0.1 \ grain/dscf$ 

#### Rule 4311 Flares

This rule limits VOC and NOx emissions from flares. The flare is a separate stationary source which has a potential to emit less than 10 tons/yr NOx and 10 tons/yr VOCs. Therefore the facility is exempt from all requirements of the rule except the record-keeping requirements of Section 6.2.4. Section 6.2.4 states that "beginning January 1, 2007 facilities claiming an exemption pursuant to Section 4.3 shall record annual throughput, material usage, or other information necessary to demonstrate an exemption under that section." Facility will keep records of annual volumes of gas combusted in the flares to ensure that NOx and VOC emissions remain below 10 tons/yr. Therefore compliance is expected.

## Rule 4801 Sulfur Compounds

Rule 4801 requires that a person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: two-tenths (0.2) percent by volume calculated as sulfur dioxide (SO2), on a dry basis averaged over 15 consecutive minutes.

Emission calculations were calculated using a fuel with a 5 gr/100 dscf sulfur content. Therefore, the maximum SO<sub>x</sub> ppmv are calculated to be:

 $SO_x$  = (5 gr/100 dscf fuel) x (1 lb/7000 gr S) x (1 mol/32 lb S) x (379.5 dscf S/1 mol S) x (1 dscf fuel/1000 Btu) x (1 x 10<sup>6</sup> Btu/8710 dscf) x (1 x 10<sup>6</sup>) = **9.7 ppmv** < 2,000 ppmv

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

Pursuant to California Health and Safety Code 42301.6, a school notice is required for sites located within 1,000 of a school. This flare will be operating at various sites throughout the District. To insure that the flare is not located within 1,000 feet of a school the following condition will be placed on the permits,

The equipment shall not be located within 1000 ft. of any K-12 school. [District Rule 2201]

## California Environmental Quality ACT (CEQA)

The California Environmental Quality Act (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 San Joaquin Valley Unified Air Pollution Control District (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.

• 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.

The District performed an Engineering Evaluation (this document) for the proposed project and determined that the project consists of issuing a permit for a piece of <u>transportable equipment</u> to be used at various locations within the District. The District makes the following findings regarding this project: 1) Issuance of the permit does not have a significant environmental impact. 2) Assessment of potential environmental effects resulting from the use of the permitted transportable equipment is the responsibility of the Lead Agency approving the specific project, and will be determined on a project specific basis. The District has determined that no additional findings are required.

#### IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue Authority to Construct S-7045-20-0 subject to the permit conditions on the attached draft Authority to Construct in **Attachment VI**.

## X. Billing Information

The fee schedule is based on the proposed throughput of the flare.

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-7045-20-0	3020-02-H	125 MMBtu/hr	\$1030.00

#### **Attachments**

I: Photograph and Diagrams of Flare

II: Emissions Profiles

III: BACT Guidelines

IV: Top Down BACT AnalysisV: AAQA and HRA Summary

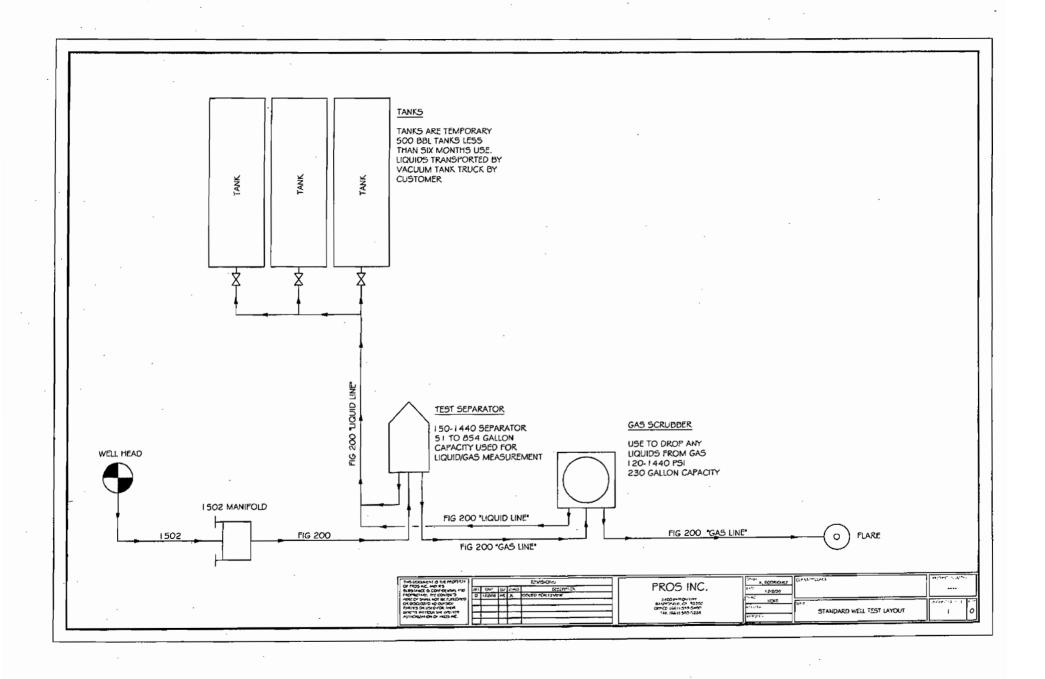
VI: Draft ATCs

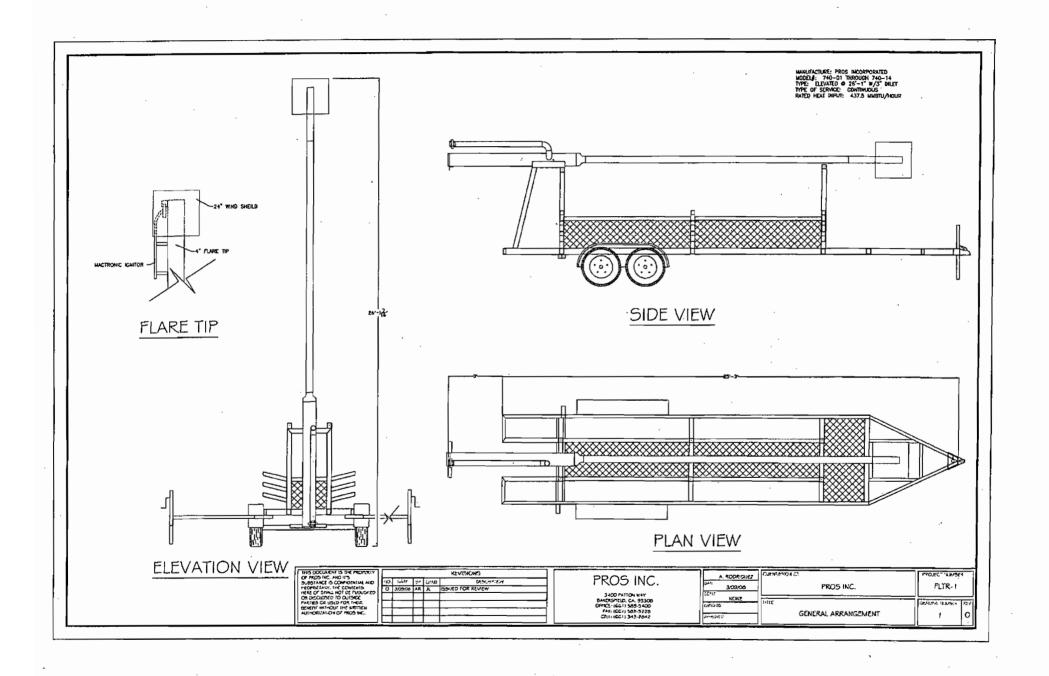
## **ATTACHMENT I**

Photograph and Diagrams of Flare

PROS, Inc. Portable Flare







## **ATTACHMENT II**

**Emissions Profile** 

Permit #: S-7045-20-0

Last Updated

Offset Ratio

Q3: Q4:

Quarterly Offset Amounts (lb/Qtr)
Q1:
Q2:

Facility: PROS INC

10/05/2012 EDGEHILR

ipment Pre-Baselined: NO	NOX	sox	PM10	CO	voc
Potential to Emit (lb/Yr):	19584.0	4118.0	2304.0	106560.0	18144.0
Daily Emis. Limit (lb/Day)	204.0	42.9	24.0	1110.0	189.0
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	4896.0	1029.0	576.0	26640.0	4536.0
Q2:	4896.0	1029.0	576.0	26640.0	4536.0
Q3:	4896.0	1030.0	576.0	26640.0	4536.0
Q4:	4896.0	1030.0	576.0	26640.0	4536.0
Check if offsets are triggered but exemption applies	N	N	N	N	N

## **ATTACHMENT III**

BACT Guidelines

## San Joaquin Valley Unified Air Pollution Control District

## Best Available Control Technology (BACT) Guideline 7.1.13\*

Last Update 5/24/2002

### Petroleum Storage Tank and Pipeline De-Gassing - Mobile Operation

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC		98% Destruction of exhausted vapors (Thermal or catalytic oxidizer, or equal)	

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 s 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

## San Joaquin Valley Unified Air Pollution Control District

## Best Available Control Technology (BACT) Guideline 1.4.7\*

Last Update 8/27/1999

## Waste Gas Flare - Oilfield Well Drilling and Testing Operation, < 50 MMscf/day

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Elevated Flare with propane fueled pilot light		

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 s 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

## San Joaquin Valley Unified Air Pollution Control District

## Best Available Control Technology (BACT) Guideline 1.4.2\*

Last Update 12/31/1998

## Waste Gas Flare - Incinerating Produced Gas

Poliutant	Achleved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
со	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	Precombustion SOx scrubbing system (non-emergency flares only.)	
	Pilot Light fired solely on LPG or natural gas.		
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 s 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

## ATTACHMENT IV

**BACT Analysis** 

## Top Down BACT Analysis for NO<sub>x</sub>, SO<sub>x</sub> and PM<sub>10</sub>

Rule 1020, Section 3.46 excludes air pollution abatement operations from the definition of "source operation". Since the flare is designed to control the VOC and  $H_2S$  emissions, the flare is considered an air pollution abatement operation and is exempt from the definition of emissions unit. Even though the proposed operations (well test, degassing, etc) may be subject BACT, the control device selected as BACT is not. Therefore, BACT is not required for  $NO_x$ ,  $SO_x$  and  $PM_{10}$ .

## Top Down BACT Analysis for VOC

## 1. Well Testing

## a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse Guideline 1.4.7, 1st quarter 2006, identifies technologically feasible and achieved in practice BACT for VOC emissions from Waste Gas Flares – Oilfield well drilling and testing operation < 50 MMscf/day, as follows:

- 1. Elevated Flare with propane fueled pilot light
- b. Step 2 Eliminate technologically infeasible options

There are no technologically feasible options.

- c. Step 3 Rank remaining options by control effectiveness
  - 1. Elevated Flare with propane fueled pilot light
- d. Step 4 Cost effectiveness analysis

Because the applicant is proposing the control technology shown to be effective in step 3 above, a cost effectiveness analysis is not required.

#### e. Step 5 - Select BACT

VOC emissions control using Elevated Flare with propane fueled pilot light control method is selected as BACT.

## 2. Tank Degassing/Equipment Depressurization/Pigging, etc

Volatile organic compounds are emitted from degassing tanks, pipelines, and other storage vessels, and pipeline pigging. The applicable BACT Guideline is Guideline 7.1.13, applies to the Petroleum Storage Tank and Pipeline De-Gassing-Mobile Operation.

## a. Step 1 - Identify all Possible VOC Control Technologies.

98% destruction of exhausted vapors (Thermal or catalytic oxidizer, or equal) - Technologically feasible

### b. Step 2 - Eliminate Technologically Infeasible Options

All options are feasible.

## c. Step 3 - Rank Remaining Control Technologies by Control Effectiveness

98% destruction of exhausted vapors (Thermal or catalytic oxidizer, or equal) - Technologically feasible

## d. Step 4 - Cost Effectiveness Analysis

The applicant is proposing 98% or greater control efficiency with a flare. Therefore a cost analysis is not required.

#### e. Step 5 - Select BACT

98% or greater control efficiency with flare

## **ATTACHMENT V**

HRA/AAQA

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

To:

Richard Edgehill - Permit Services

From:

Suzanne Medina - Technical Services

Date:

October 15, 2012

Facility Name:

Pros Inc.

Location:

Multiple Unspecified Locations

Application #(s):

S-7045-20-0

Project #:

S-1123618

#### A. RMR SUMMARY

RMR Summary				
Categories	288 MMSCF/yr Flare (Unit 20-0)	Project Totals	Facility Totals	
Prioritization Score	>1.0	>1.0	>1.0	
Acute Hazard Index	0.00	0.00	0.00	
Chronic Hazard Index	0.08	0.08	0.08	
Maximum Individual Cancer Risk (10 <sup>-6</sup> )	1.2	1.2	1.2	
T-BACT Required?	Yes (VOC)			
Special Permit Conditions?	Yes			

<sup>&</sup>lt;sup>1</sup> This unit is considered its own facility therefore the risk associated with this project will not be summed with other permitted units at this facility.

#### **Proposed Permit Conditions**

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

#### Unit # 20-0

- The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
- 2. Flare shall not be operated at any location in conjunction with any other flare or combustion equipment operated by PROs Inc. [District Rule 2201] N
- 3. Flare shall always operate at least 30.5 meters away from any property boundary and at least 457 meters away from a receptor. [District Rule 2201] N

#### Criteria Pollutant Modeling Results\*

Diesel ICE	1 Hour	3 Hours	8 Hours.	24 Hours	Annual
CO	Pass P.	X	Pass	X	X
NO <sub>x</sub>	Pass	X	X	X	Passi
SO <sub>x</sub>	. Pass ∴	∵ Pass'⊩	X	Dass.	Pass
PM <sub>10</sub>	X	X	X	Pass :	™Pass <sup>2</sup>
PM <sub>2,5</sub>	X	X	X	Pass <sup>2</sup>	- Pass <sup>2</sup>

<sup>\*</sup>Results were taken from the attached PSD spreadsheet.

#### III. Conclusion

The acute and chronic indices are below 1.0 and the cancer risk associated with the project is greater than 1.0 in a million, but less than 10 in a million. In accordance with the District's Risk Management Policy, the project is approved with 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 proposed unit.

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

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

#### IV. Attachments

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

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

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

## **ATTACHMENT VI**

Draft ATCs

# San Joaquin Valley Air Pollution Control District

**AUTHORITY TO CONSTRUCT** 

PERMIT NO: S-7045-20-0

LEGAL OWNER OR OPERATOR: PROS INC

MAILING ADDRESS:

P O BOX 20996

BAKERSFIELD, CA 93390-0996

LOCATION:

VARIOUS LOCATIONS, SJVUAPCD

#### **EQUIPMENT DESCRIPTION:**

TRANSPORTABLE 125 MMBTU/HR FLARE WITH OPTIONAL AIR-ASSIST FOR MULTIPLE USES INCLUDING WELL TESTING AND DRILLING OPERATIONS, EQUIPMENT DEPRESSURIZATION, AND PIPELINE PIGGING OPERATED AT VARIOUS UNSPECIFIED LOCATIONS, SJVAPCD

## CONDITIONS

- 1. The equipment shall not be located within 1000 ft. of any K-12 school. [CH&SC 42301.6]
- 2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
- 3. Permittee shall notify the District Compliance Division of each location at which the operation is located in excess of 24 hours. Such notification shall be made no later than 48 hours after starting operation at the location. [District Rule 2201]
- 4. Flare shall not be operated at any location in conjunction with any other flare or combustion equipment operated by PROs Inc. [District Rule 2201]
- 5. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
- 6. Flare shall always operate at least 30.5 meters away from any property boundary and at least 457 meters away from a receptor. [District Rule 4102]
- 7. Unit S-7045-20-0 must not be located and operated at an existing facility or operation such that it becomes part of an existing stationary source as defined by District Rule 2201. [District Rule 2201]
- 8. This permit shall not authorize the utilization of any IC engine, or other combustion device requiring a separate permit, for powering the air assist to the flare. [District Rule 2201]
- 9. Flare shall be equipped with continuos pilot and operational automatic re-ignition provisions. [District Rule 2201] CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Directory APCO

DAVID WARNER, Director of Permit Services

- 10. Gas line to flare shall be equipped with operational, volumetric flow rate indicator. [District Rule 2201]
- 11. Daily and annual amounts of gas flared shall not exceed 3 MMscf/day nor 288 MMscf/yr. [District Rules 2201 and 4102]
- 12. Flare air assist shall be used as necessary such that visible emissions do not exhibit Ringelmann 1/4 or greater or equivalent 5% opacity or greater for more than three minutes in any one hour. [District Rule 2201]
- 13. Sulfur compound concentration of gas flared shall not exceed 5 gr/100 scf. [District Rules 2201 and 4801]
- 14. Emission rates shall not exceed any of the following: 0.008 lb-PM10/MMBtu, 0.068 lb-NOx/MMBtu (as NO2), 0.063 lb-VOC/MMBtu, or 0.37 lb-CO/MMBtu. [District Rules 2201 and 4201]
- 15. The flare shall be operated according to the manufacturer's specifications, a copy of which shall be maintained on site. [District Rule 2201]
- 16. Permittee shall inspect the flare in operation for visible emissions no less frequently than once every two weeks. If visible emissions are observed, corrective action shall be taken. If visible emissions persist, an EPA Method 9 test shall be performed within 72 hours. [District Rule 2201]
- 17. Permittee shall document compliance with well gas sulfur compound concentration limit by performing sulfur content analysis of well gas upon startup at each new location of operation of flare. [District Rule 2201]
- 18. The following test methods shall be used for well gas sulfur content: ASTM D3246 or double GC for H2S and mercaptan. [District Rule 1081]
- 19. Permittee shall maintain accurate daily records indicating flare location, flared gas sulfur content at each location, and daily and annual rates of gas flared; and such records shall be made readily available for District inspection upon request for a minimum of 5 years. [District Rules 2201 and 4311]

