



FEB 05 2014

Seth Hunter
Hunter Edison Oil Development/Vaquero Energy, Inc.
15545 Hermosa Road
Bakersfield, CA 93307

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: S-1329 & S-1509
Project Number: S-1140115 & S-1134768

Dear Mr. Hunter:

Enclosed for your review and comment is the District's analysis of Hunter Edison Oil Development/Vaquero Energy, Inc.'s application for an Authority to Construct for installing two 1600 BBL fixed roof crude oil storage tanks and reducing the throughput of tank S-1509-1, at the Common lease within the Kern County Heavy Oil Central stationary source (Section: 13, Township: 30S, Range: 29E).

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

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Steve Davidson of Permit Services at (661) 392- 5618.

Sincerely,



David Warner
Director of Permit Services

DW:SDD/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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Authority to Construct Application Review

Fixed Roof Oil Field Production Tank < 5000 BBLs
Uncontrolled Emissions Less than 6 tons/year
Heavy Oil, Not Connected to Vapor Control

Facility Name: Hunter Edison Oil Development/Vaquero Energy, Inc. Date: January 27, 2017
Mailing Address: 15545 Hermosa Road Bakersfield, CA 93307 Engineer: Steve Davidson
Lead Engineer: Allan Phillips *ASinc AOE*
Contact Person: Cameron Hunter / Nick Diercks (Envirotech)
Telephone: (661) 363-7240 / (661) 377-0073 x 13 JAN 31 2016
Fax: (661) 366-2959
E-Mail: Cameron@vaqueroenergy.com
Application #(s): S-1329-35-0 '-36-0, and S-1509-27-1
Project #: S-1140115 & S-1134768
Deemed Complete: November 27, 2013

I. Proposal

Hunter Edison Oil Development (Hunter) S-1329 and Vaquero Energy Inc (Vaquero) S-1509 request Authorities to Construct (ATC) for the installation of two 1600 BBL fixed roof crude oil storage tanks. The increase in VOC emissions will be offset by reducing the potential throughput of tank S-1509-1. The current PTO for tank S-1509-27-1 is included in Attachment A.

Please Note: Hunter Edison Oil Development/Vaquero Energy, Inc. are owned by the same person and are part of the same Kern County Heavy Oil Western oilfield stationary source

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)
Rule 2520 Federally Mandated Operating Permits (6/21/01) Rule 2530
Rule 4001 New Source Performance Standards,

Subpart Kb (Amended 4/14/99) - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) Is not applicable. This subpart does not apply to vessels with a design capacity ≤

1,589.874 m³ (≤ 420,000 gallons) used for petroleum or condensate stored, processed, or treated prior to custody transfer. The capacity of these tanks is ≤ 420,000 gallons, and they store crude oil prior to custody transfer; therefore, this subpart does not apply to the tanks in this project.

Subpart OOOO (Adopted 8/16/2012) - Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution.

Rule 4101 Visible Emissions (02/17/05)
Rule 4102 Nuisance (12/17/92)
Rule 4623 Storage of Organic Liquids (05/19/05)
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 new tanks (S-1329-35 & '-36) are located at the Common lease within the Kern County Heavy Oil Central stationary source (Section: 13, Township: 30S, Range: 29E). The existing tank (S-1509-27-1) is located at the LV Smith lease within the Kern County Heavy Oil Central stationary source (Section: 1, Township: 30S, Range: 28E). The equipment is not located within 1,000 feet of the outer boundary of any K-12 school. Therefore, pursuant to CH&SC 42301.6, California Health and Safety Code (School Notice), public notification is not required.

IV. Process Description

The applicant is proposing the installation of two 1600 BBL fixed roof, crude oil tanks with a tank pressure relief or pressure/vacuum relief devices.

The subject tanks are used to store crude oil prior to transfer offsite.

V. Equipment Listing

Pre-Project Equipment Description:

S-1509-27-0: 500 BBL FIXED ROOF CRUDE OIL PRODUCTION TANK (STOCK TANK) WITH PRESSURE RELIEF VALVE (LV SMITH LEASE)

Proposed Equipment:

- S-1329-35-0: 1600 BBL CRUDE OIL STORAGE TANK (COMMON LEASE) WITH PV VALVE
- S-1329-36-0: 1600 BBL CRUDE OIL STORAGE TANK (COMMON LEASE) WITH PV VALVE
- S-1509-27-1: MODIFICATION OF 500 BBL FIXED ROOF CRUDE OIL PRODUCTION TANK (STOCK TANK) WITH PRESSURE RELIEF VALVE (LV SMITH LEASE): REDUCE THROUGHPUT TO 785 BBLs

Post Project Equipment Description

- S-1329-35-0: 1600 BBL CRUDE OIL STORAGE TANK (COMMON LEASE) WITH PV VALVE
- S-1329-36-0: 1600 BBL CRUDE OIL STORAGE TANK (COMMON LEASE) WITH PV VALVE
- S-1509-27-1: 500 BBL FIXED ROOF CRUDE OIL PRODUCTION TANK (STOCK TANK) WITH PRESSURE RELIEF VALVE (LV SMITH LEASE)

VI. Emission Control Technology Evaluation

The tank(s) will be equipped with a pressure-vacuum (PV) relief vent valve set to within 10% of the maximum allowable working pressure of the tank. The PV-valve will reduce VOC wind-induced emissions from the tank vent.

VII. Emissions Calculations

A. Assumptions

- Facility will operate 24 hours per day, 7 days per week, and 52 weeks per year.
- The tanks emit only volatile organic compounds (VOCs),
- The tank paint conditions are good, the color is medium.
- TVP of oil = 0.5 psia (Applicant)
- Tank temperature, 140° F
- VOCs molecular weight, 100 lb/lbmol If wash tank add:

Tanks S-1329-35-0 and -36-0:

- Applicant proposes 50 bbl/day throughput

Tanks S-1509-27-1:

- Proposed throughput 765 bbl/day throughput
- Pre-project throughput is 1000 bbl/day (current Permit)

B. Emission Factors

Both the daily and annual PE's for each permit unit will be based on the results from the District's Microsoft Excel spreadsheets for Tank Emissions - Fixed Roof Crude Oil less than 26° API located in Attachment B. The spreadsheet for tanks was developed using the equations for fixed-roof tanks from EPA AP-42, Chapter 7.1.

C. Calculations

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

Permit Unit	VOC - Daily PE1 (lb/day)	VOC - Annual PE1 (lb/Year)
S-1509-27-0	51.0	18,624

2. Post Project Potential to Emit, (PE₂)

Permit Unit	VOC - Daily PE2 (lb/day)	VOC - Annual PE2 (lb/Year)
S-1329-35-0	5.8	2127
S-1329-36-0	5.8	2127
S-1509-27-1	39.3	14,336

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

The Pre-Project Stationary Source Potential to Emit (SSPE1) is summarized below (see Attachment C for details).

SSPE1 (lb/year)	
	VOC
SSPE1	405,508

Facility emissions are already above the Offset and Major Source Thresholds for VOC emissions; 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 VOC emissions; 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. For the purposes of determining major source status the following shall not be included:

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

This source is an existing Major Source for VOC emissions and will remain a Major Source for VOC. No change in other pollutants are proposed or expected as a result of this project.

Rule 2410 Major Source Determination:

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

PSD Major Source Determination (tons/year)							
	NO2	VOC	SO2	CO	PM	PM10	CO2e
Estimated Facility PE before Project Increase ¹	35.4	202.4	1.4	94.4	4.1	4.1	45,663
PSD Major Source Thresholds	250	250	250	250	250	250	100,000
PSD Major Source ? (Y/N)	N	N	N	N	N	N	N

¹See SSPE Calculations Attachment C

As shown above, the facility is not an existing major source for PSD for at any pollutant. Therefore the facility is not an existing major source for PSD.

6. Baseline Emissions (BE)

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

Pursuant to District Rule 2201, BE = PE1 for:

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

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.22

S-1329-35-0 and '-36-0:

Since S-1329-35-0 and '-36-0 are a new emissions units, the annual BE is equal to zero.

S-1509-27-1:

Pursuant to Rule 2201, Section 3.12, a Clean Emissions Unit is defined as an emissions unit that is "equipped with an emissions control technology with a minimum control efficiency of at least 95% or is equipped with emission control technology that meets the requirements

for achieved-in-practice BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application.

This tank is equipped with a PV-vent set to within 10% of maximum allowable pressure, which meets the requirements for achieved-in-practice BACT. Therefore, Baseline Emissions (BE) are equal to the Pre-Project Potential to Emit (PE1).

Permit unit	Annual PE1 (lb/Year)
S-1509-27-1	18,624

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 VOCs, 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?
VOC	18,590	50,000	No

Since SB 288 Major Modification Threshold for VOCs was not surpassed with this project, this project does not constitute a SB288 Major Modification.

8. Federal Major Modification

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

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

Step 1

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

The project's combined total emission increases are equal to PE2 for permit units S-1329-35-0 and '-36-0 and is compared to the Federal Major Modification Thresholds in the following table.

Federal Major Modification Thresholds for Emission Increases			
Pollutant	Total Emissions Increases (lb/yr)	Thresholds (lb/yr)	Federal Major Modification?
VOC*	4254	0	Yes

*If there is any emission increase in VOC, this project is 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 VI.C.5 of this document).

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.

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

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

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

PSD Major Source Determination: Potential to Emit (tons/year)							
	NO2	VOC	SO2	CO	PM	PM10	CO2e
Total PE from New and Modified Units	0	9.5	0	0	0	0	0
PSD Major Source threshold	250	250	250	250	250	250	100,000
New PSD Major Source?	N	N	N	N	N	N	N

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

10. 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 - BE, where:

- QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.
- PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.
- BE = Baseline Emissions (per Rule 2201) for each emissions unit, lb/qtr.

Quarterly NEC [QNEC]			
Permit #	PE2 (lb/qtr)	BE1 (lb/qtr)	QNEC (lb/qtr)
S-1329-35-0	532	0	532
S-1329-36-0	532	0	532
S-1509-27-1	3584	4656	-1072

VIII. Compliance

Rule 2201 - New and Modified Stationary Source Review Rule

A. BACT

1. BACT Applicability

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

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

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

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

The applicant is proposing to install a two tanks each with a PE of 5.8 lb/day for VOC as calculated in section VII.C.2. Since the daily VOC emissions are greater than 2.0 lbs/day, BACT will be required.

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**

Adjusted Increase in Permitted Emissions (AIPE)

AIPE = PE2 – HAPE where,

AIPE = Adjusted Increase in Permitted Emissions, lb/day.

- PE2 = the emission unit's post project Potential to Emit, lb/day.
HAPE = the emission unit's Historically Adjusted Potential to Emit, lb/day.

Historically Adjusted Potential to Emit (HAPE) Calculations:

HAPE = PE1 x (EF2 / EF1) where,

- PE1 = The emission unit's Potential to Emit prior to modification or relocation.
EF2 = The emission 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 emission unit's permitted emission factor for the pollutant before the modification or relocation.
EF1 = EF2

$$\begin{aligned} \text{AIPE (lb/day)} &= \text{PE2 (lb/day)} - [\text{PE1 (lb/day)} \times (\text{EF2/EF1})] \\ \text{AIPE (lb/day)} &= 40.3 - [51.0 \times (1)] \\ \text{AIPE (lb/day)} &= -10.7 \end{aligned}$$

The applicant is proposing to modify its existing tank with an AIPE of -10.7 lb/day for VOC as calculated in the previous section. Since the daily VOC emissions are less than 2.0 lbs/day, BACT will not be required.

d. ~~SB-288/Federal Major Modification~~

As discussed in Section VII.C.7 above, this project does not constitute a SB 288 Modification for VOC emissions; therefore, BACT is not triggered.

As discussed in Section VII.C.8 above, this project constitutes a Federal Major Modification for VOC emissions; therefore, BACT is triggered.

2. BACT Guidance

BACT Guideline 7.3.1, applies to Petroleum and Petrochemical Production – Fixed Roof Organic Liquid Storage or Processing Tank, < 5,000 bbl tank capacity (see Attachment D)

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.

The applicant is proposing to use PV relief valve on the tank vent set to within 10% of maximum allowable pressure. The technologically feasible option of waste gas incinerated in steam generator, heater treater, or other fired equipment; transfer of noncondensable vapors to gas pipeline; reinjection to formation (if appropriate wells are available); or equal and inspection and maintenance program at 99% control are not cost effective; the following proposed equipment satisfies the BACT requirement (see BACT Guideline 7.3.1):

VOC: pressure and vacuum (PV) relief valve on tank vent set to within 10% of maximum allowable pressure

B. Offsets

1. Offset Applicability

Pursuant to Rule 2201, 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 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 Applicability			
Pollutant	SSPE2 (lb/yr)	Offset Threshold Levels (lb/yr)	Offsets Required?
VOC	>> 20,000	20,000	Yes

2. Quantity of Offsets Required

As seen above, the facility is an existing Major Source for VOC and the SSPE2 is greater than the offset thresholds; therefore offset calculations will be required for this project.

Per Sections 4.7.1 and 4.7.3, the quantity of offsets in pounds per year for VOCs is calculated as follows for sources with an SSPE1 greater than the offset threshold levels before implementing the project being evaluated.

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

Where,

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

BE = Baseline Emissions, (lb/year)

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

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = 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)

As stated above, permit units S-1329-35-0 and '136-0 are new emissions units; therefore, the Baseline Emissions (BE) are equal to zero.

As stated above, S-1509-27-1 is a Clean Emissions Unit; therefore, the Baseline Emissions (BE) are equal to the Pre-Project Potential to Emit (PE1).

There are no increases in cargo carrier emissions; therefore offsets can be determined as follows:

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

Tank S-1329-35-0:

PE2 = 2127 lb/year

BE = 0 lb/year

Tank S-1329-35-0:

PE2 = 2127 lb/year

BE = 0 lb/year

Tank S-1509-27-1:

PE2 = 14,366 lb/year

BE = 18,624 lb/year

ICCE = 0 lb/year

$$\begin{aligned} \text{Offsets Required (lb/year)} &= ([2127 - 0] + [2127 - 0] + [14,366 - 18,624] + 0) \\ &= 0 \text{ lb VOC/year} \end{aligned}$$

As demonstrated in the calculation above, the amount of offsets is zero; therefore, offsets will not be required for this project.

C. Public Notification

1. Applicability

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB288 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 SSPE of greater than 20,000 lb/year for any pollutant.

a. New Major Sources, Federal Major Modifications, and SB288 Major Modifications

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

As demonstrated in VII.C.7, this project does not constitute a SB 288; therefore, public noticing for SB 288 is not required.

As demonstrated in VII.C.8, this project constitutes a Federal Major Modification; therefore, public noticing for Federal Major Modification purposes is required.

b. PE > 100 lb/day

Applications which include a new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. There are no new emissions units with a PE greater than 100 lb per day; therefore public noticing is not required for this project for Potential to Emit Purposes.

c. Offset Threshold

The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Threshold				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
VOC	>>20,000	>>20,000	20,000 lb/year	No

As detailed above, the VOC threshold was not 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 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:

Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice					
Pollutant	Project PE2 (lb/year)	Project PE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
VOC	18,590	18,624	-34	20,000 lb/year	No

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

2. Public Notice Action

As discussed above, public noticing is required for this project for Federal Major Modification purposes. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and EPA 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 Emissions Limits (DEL)

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.

DELs for the emission units in this project will be included on the ATCs in the form of tanks' throughput and the tank contents' maximum true vapor pressure (TVP). The permittee will be required to maintain accurate records of tank content TVP and tanks monthly average daily throughput to validate the DEL.

E. Compliance Assurance

The following measures shall be taken to ensure continued compliance with District Rules:

1. Source Testing

The permittee will be required to perform periodic TVP testing for all tanks in this project using the latest EPA and CARB approved version of the Lawrence Berkeley National Laboratory "Test Method for Vapor Pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph" to validate non-applicability of Rule 4623. The testing shall be conducted once every 24 month period or every time when the source of liquid stored is changed.

2. Monitoring

Monitoring is not required.

3. Record Keeping

Record keeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The following conditions will appear on the permits:

- Permittee shall maintain monthly records of average daily crude oil throughput and shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rule 2201] N
- All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 2201] N

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis

Section 4.14.1 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. However, since VOCs are the only criteria pollutant associated with the project and VOCs are not evaluated in an AAQA, no further review was performed for the Ambient Air Quality Analysis.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or a source undergoing a Title I Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Sections VIII-Rule 2201-C.1.a and VIII-Rule 2201-C.1.b, this facility is a new major source and this project does constitute a Title I modification, therefore this requirement is applicable. Included in **Attachment F** is Hunter Edison Oil Development/Vaquero Energy, Inc. compliance certification.

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install two new tanks and decrease the throughput of a third tank.

~~Since the project will provide oil storage and processing at the locations Hunter Edison Oil Development/Vaquero Energy, Inc. currently operates, 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

Since this facility's emissions exceed the major source thresholds of District Rule 2201, this facility is a major source. However, this facility has elected to comply with Rule 2530, exempts it from the requirements of Rule 2520.

Rule 2530 Federally Enforceable Potential to Emit

The purpose of this rule is to restrict the emissions of a stationary source so that the source may elect to be exempt from the requirements of Rule 2520. Pursuant to Rule 2530, since this facility has elected exemption from the

requirements of Rule 2520 by ensuring actual emissions from the stationary source in every 12-month periods to not exceed the following: ½ the major source thresholds for NOx, VOCs, CO, and PM₁₀; 50 tons per year SO₂; 5 tons per year of a single HAP; 12.5 tons per year of any combination of HAPs; 50 percent of any lesser threshold for a single HAP as the EPA may establish by rule; and 50 percent of the major source threshold for any other regulated air pollutant not listed in Rule 2530.

Rule 4101 - Visible Emissions

Rule 4101 states 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 as dark as, or darker than, Ringelmann 1 or 20% opacity.

As long as the equipment is properly maintained and operated, compliance with visible emissions limits is expected under normal operating conditions.

Rule 4102 - Public Nuisance

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. Compliance 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 E**), the total facility prioritization score including this project was greater than one. Therefore, a health risk assessment was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
S-1329-35-0	0.04 per million	No
S-1329-36-0	0.05 per million	No

Discussion of T-BACT

Discuss whether a T-BACT is or is not triggered and the requirements which satisfy T-BACT (if any).

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

Rule 4623, Storage of Organic Liquids

This rule applies to any tank with a capacity of 1,100 gallons or greater in which any organic liquid is placed, held, or stored.

According to the information provided by the applicant, the facility produces on average less than 6,000 barrels per day of crude oil from all operations within the county and does not engage in refining, transportation, or marketing of refined petroleum products. Therefore, under Section 3.29 of this rule and District Rule 1020, Section 3.45, this facility is a small producer. Therefore, the following condition shall be placed on the ATC:

{2491} Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623] N

According to Section 4.3, except for complying with Sections 6.3.4 and 7.2, a small producer's tank with a throughput of 50 barrels of crude oil per day or less is exempt from the requirements of this rule.

The proposed tanks has a throughput of less than 50 bbls of crude oil per day. Therefore, the following conditions shall be placed on the permit:

Crude oil throughput shall not exceed 50 barrels per day based on a monthly average. [District Rules 2201 & 4623] N

Monthly records of average daily crude oil throughput shall be submitted to the APCO 30 days prior to the expiration date indicated in the Permit to Operate. [District Rules 2201 & 4623] N

All records required to be maintained by this permit shall be maintained for a

period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 & 4623] N

Applicant has specifically requested to enter the District's "Voluntary Tank Preventions and Maintenance Program" and for the conditions to be placed on the permit; therefore, the following conditions from District Policy SSP 2215 (2-22-08), "Organic Liquid Storage Tanks – Voluntary Inspection and Maintenance Program" will be placed on the ATC:

"Organic Liquid Storage Tanks – Voluntary Inspection and Maintenance Program"

Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2080]

Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 2080]

Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rule 2080]

Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 2080]

Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 3 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that

were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 3 shall constitute a violation of this rule. [District Rule 2080]

If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 2080]

Any component found to be leaking on two consecutive annual inspections is in violation of this rule, even if covered under the voluntary inspection and maintenance program. [District Rule 2080]

Applicant has requested the District place tank gassing and cleaning conditions on the Permit; therefore, the following conditions from District Policy SSP 2210, "Organic Liquid Storage Tanks – Cleaning Requirements":

Notification Condition:

Permittee shall notify the APCO in writing at least three (3) days prior to performing tank degassing and interior tank cleaning activities. Written notification shall include the following: 1) the Permit to Operate number and physical location of the tank being degassed, 2) the date and time that tank degassing and cleaning activities will begin, 3) the degassing method, as allowed in this permit, to be used, 4) the method to be used to clean the tank, including any solvents to be used, and 5) the method to be used to dispose of any removed sludge, including methods that will be used to control emissions from the receiving vessel and emissions during transport. [District Rule 2080]

Degassing Conditions:

This tank shall not be required to de-gas before commencing cleaning activities. All other applicable requirements shall be complied with before, during, and after tank cleaning activities. [District Rule 2080]

Tank Cleaning :

While performing tank cleaning activities, operators may only use the following cleaning agents: diesel, solvents with an initial boiling point of greater than 302 degrees F, solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams of VOC per liter or less. [District Rule 2080]

Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rule 2080]

Compliance with the requirements of this rule is expected.

CH&SC 42301.6 California Health & Safety Code (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)

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 tank are equipped with a PV-vent set to within 10% of maximum allowable pressure satisfies the Best Performance Standards (BPS) for Front-line Organic Liquid Storage Tanks, Fixed Roof Tanks < 5,000 bbl. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change and no other discussion for greenhouse gas emissions is required.

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)).

The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). The District's engineering evaluation of the project (this document) demonstrates that compliance with District rules and permit conditions would reduce Stationary Source emissions from the project to levels below the District's significance thresholds for criteria pollutants. The District has determined that no additional findings are required (CEQA Guidelines §15096(h)).

IX. Recommendations

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue Authority to Construct S-1329-35-0, S-136-0, and S-1509-27-1 subject to the permit conditions on the attached draft Authority to Construct in Attachment G.

X. Billing Information

Permit Number	Fee Schedule	Fee Description	Annual Fee
S-1329-35-0	3020-5S-D	1600 BBLs	\$75
S-1329-35-0	3020-5S-D	1600 BBLs	\$75
S-1509-27-1	3020-5S-C	500 BBLs	\$63

- ATTACHMENT A: Current PTO
- ATTACHMENT B: Emissions Calculations
- ATTACHMENT C: SSPE Calculation
- ATTACHMENT D: BACT Guideline & Top down BACT Analysis
- ATTACHMENT E: Health Risk Assessment
- ATTACHMENT F: Compliance Certification
- ATTACHMENT G: Draft ATC(s)

Attachment A
Current PTO

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1509-27-0

EXPIRATION DATE: 04/30/2016

SECTION: 01 TOWNSHIP: 30S RANGE: 28E

EQUIPMENT DESCRIPTION:

500 BBL FIXED ROOF CRUDE OIL PRODUCTION TANK (STOCK TANK) WITH PRESSURE RELIEF VALVE (LV SMITH LEASE)

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. NOTE: Facilities #S-1329 and #S-1509 are both included in the same Heavy Oil Central stationary source. [District Rule 2201]
4. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
5. The tank shall be equipped with a fixed roof with no holes or openings. [District Rule 2201]
6. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623]
7. Daily average tank oil throughput shall not exceed 1,000 barrels per day. [District Rule 2201]
8. VOC emission rate from the tank shall not exceed 51.5 lb/day. [District Rule 2201]
9. This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in leak-free condition except when the operating pressure exceeds the valve's set pressure. [District Rule 2201]
10. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rule 4623]
11. The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. The permittee shall also conduct an API gravity testing. [District Rule 4623]
12. For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA. [District Rule 4623]
13. The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287 e1 "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 4623]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

14. Permittee shall submit the records of TVP and API gravity testing to the APCO within 45 days after the date of testing. The records shall include the tank identification number, Permit to Operate number, type of stored organic liquid, TVP and API gravity of the organic liquid, test methods used, and a copy of the test results. [District Rule 4623]
15. The permittee shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rule 4623]
16. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623]

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

Attachment B
Emissions Calculations

PE 1

S-1509-27-0

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1509
facility tank I.D.	--
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	0.5
liquid bulk storage temperature, Tb (°F)	140
is this a constant-level tank? {yes, no}	no
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	15
capacity of tank (bbl)	500
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
average liquid height (feet)	10
are the roof and shell the same color? {yes,no}	yes
For roof:	
color {1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White}	4
condition {1: Good, 2: Poor}	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Liquid/Nonliq Data	A	B
maximum daily fluid throughput (bbl)		1,000
maximum annual fluid throughput (bbl)	365,000	365,000
-----This row only used if flashing losses occur in this tank-----		
-----This row only used if flashing losses occur in this tank-----		
molecular weight, Mw (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, Pa (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	121.4	1.7703
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	110.6	1.3034
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	116.0	1.5288
roof outage, H _{ro} (feet)		0.1563
vapor space volume, V _v (cubic feet)		1087.90
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0081
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1166

Results	lb/yea	lb/day
Standing Storage Loss	374	1.03
Working Loss	18,250	50.00
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	18,624	51.0

Summary Table	
Permit Number	S-1509
Facility Tank I.D.	--
Tank capacity (bbl)	500
Tank diameter (ft)	15
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	1,000
Maximum Annual Fluid Throughput (bbl/year)	365,000
Maximum Daily Oil Throughput (bbl/day)	N/A
Maximum Annual Oil Throughput (bbl/year)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	51.0
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	18,624

PE2
S-1325-35-0 & 1-36-0

Tank Input Data	
permit number (S-xxxx-xx-xx)	S1329-X
facility tank I.D.	--
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	0.5
liquid bulk storage temperature, Tb (°F)	140
is this a constant-level tank? {yes, no}	no
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26.75
capacity of tank (bbl)	1,600
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
average liquid height (feet)	10
are the roof and shell the same color? {yes,no}	yes
For roof:	
color {1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White}	4
condition {1: Good, 2: Poor}	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		50
maximum annual fluid throughput (bbl)	18,250	18,250
-----This row only used if flashing losses occur in this tank-----		50
-----This row only used if flashing losses occur in this tank-----	18250	18,250
molecular weight, Mw (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, Pa (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{ix}), P _{vx} (psia)	121.4	1.7703
water vapor pressure at daily minimum liquid surface temperature (T _{in}), P _{vn} (psia)	110.6	1.3034
water vapor pressure at average liquid surface temperature (T _{ia}), P _{va} (psia)	116.0	1.5288
roof outage, H _{ro} (feet)		0.2786
vapor space volume, V _v (cubic feet)		3528.61
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0081
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1166

Results	lb/year	lb/day
Standing Storage Loss	1,214	3.33
Working Loss	913	2.50
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	2,127	5.8

Summary Table	
Permit Number	S1329-X
Facility Tank I.D.	--
Tank capacity (bbl)	1,600
Tank diameter (ft)	26.75
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	50
Maximum Annual Fluid Throughput (bbl/year)	18,250
Maximum Daily Oil Throughput (bbl/day)	N/A
Maximum Annual Oil Throughput (bbl/year)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	5.8
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	2,127

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1509
facility tank I.D.	--
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	0.5
liquid bulk storage temperature, Tb (°F)	140
is this a constant-level tank? {yes, no}	no
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	15
capacity of tank (bbl)	500
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
average liquid height (feet)	10
are the roof and shell the same color? {yes,no}	yes
For roof:	
color {1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White}	4
condition {1: Good, 2: Poor}	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		765
maximum annual fluid throughput (bbl)	279,225	279,225
-----This row only used if flashing losses occur in this tank-----		760
-----This row only used if flashing losses occur in this tank-----	277400	277,400
molecular weight, Mw (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T _{lx}), P _{vx} (psia)	121.4	1.7703
water vapor pressure at daily minimum liquid surface temperature (T _{ln}), P _{vn} (psia)	110.6	1.3034
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	116.0	1.5288
roof outage, H _{ro} (feet)		0.1563
vapor space volume, V _v (cubic feet)		1087.90
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0081
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1166

Results	lb/year	lb/day
Standing Storage Loss	374	1.03
Working Loss	13,961	38.25
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	14,336	39.3

Summary Table	
Permit Number	S-1509
Facility Tank I.D.	--
Tank capacity (bbl)	500
Tank diameter (ft)	15
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	765
Maximum Annual Fluid Throughput (bbl/year)	279,225
Maximum Daily Oil Throughput (bbl/day)	N/A
Maximum Annual Oil Throughput (bbl/year)	N/A
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	39.3
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	14,336

Attachment C
SSPE Calculation

Green House Gas SSPE

<u>Permit #</u>	<u>MMBtu Rating</u>	<u>HP Rating</u>
S-1329-3-8	49.0	
S-1329-22-9	18	
S-1329-25-0		230 (diesel)
S-1329-30-0		277 (diesel)
S-1509-29-1	18	
<hr/>		
Total	85 MMBtu	507 BHP

Natural gas:

$$(85 \text{ MMBtu/hr}) \times (117 \text{ lb-CO}_2\text{e- /MMBtu}) \times (8760 \text{ Hr/yr}) \times (\text{ton}/2000 \text{ lb}) = 43,065 \text{ ton/yr}$$

Diesel:

$$(507 \text{ BHP}) \times (1.17 \text{ lb-CO}_2\text{e/HP}) \times (8760 \text{ Hr/yr}) \times (\text{ton}/2000 \text{ lb}) = 2598 \text{ tons/year}$$

Total CO2e

$$43,065 \text{ ton/yr} + 2598 \text{ tons/year} = 45,663 \text{ tons-CO}_2\text{e /year}$$

Detailed SSPE Report

Region	Facility	Unit	Mod	NOx	SOx	PM10	CO	VOC	Number of Outstanding ATCs
S	1329	0	0						0
S	1329	3	8	29188	1223	3434	158819	27042	0
S	1329	4	1	0	0	0	0	30638	0
S	1329	5	1	0	0	0	0	38308	0
S	1329	6	2	0	0	0	0	339	1 *
S	1329	7	2	0	0	0	0	167	0 *
S	1329	8	2	0	0	0	0	47	0 *
S	1329	10	2	0	0	0	0	47	0 *
S	1329	11	2	0	0	0	0	47	0 *
S	1329	12	2	0	0	0	0	47	0 *
S	1329	13	1	0	0	0	0	29932	0
S	1329	14	1	0	0	0	0	29932	0
S	1329	15	1	0	0	0	0	29932	0
S	1329	20	1	0	0	0	0	14281	0
S	1329	21	1	0	0	0	0	14281	0
S	1329	22	9	1927	701	2400	14717	491	0
S	1329	24	2	0	0	0	0	14340	0
S	1329	25	0	23986	23	888	2221	1333	1
S	1329	26	1	0	0	0	0	601	0
S	1329	27	1	0	0	0	0	1887	0
S	1329	30	0	14091	451	53	1372	501	0
S	1329	31	2	0	0	0	0	47	0 *
S	1509	0	0						0
S	1509	7	1	0	0	0	0	26280	0
S	1509	8	1	0	0	0	0	486	0
S	1509	9	1	0	0	0	0	27681	0

Saturday, December 07, 2013

Page 1 of 2

Notes:

Blank values for a particular permit unit do not necessarily reflect zero emissions. For units with blank values, the PE must still be determined based on physical PE or as limited by permit condition.

For permits that show outstanding ATCs, consult PAS ATC Emission Profile records to determine what the highest PE is for each pollutant.

ATCs for new units (e.g. S-XXXX-X-0) must be added in separately.

ERC's for onsite reductions must be added in separately per Rule 2201 as well.

Region	Facility	Unit	Mod	NOx	SOx	PM10	CO	VOC	Number of Outstanding ATCs
S	1509	10	1	0	0	0	0	486	0
S	1509	11	1	0	0	0	0	27861	0
S	1509	12	1	0	0	0	0	9611	0
S	1509	13	1	0	0	0	0	486	0
S	1509	14	1	0	0	0	0	18736	0
S	1509	18	1	0	0	0	0	18736	0
S	1509	19	2	0	0	0	0	2081	0
S	1509	22	1	0	0	0	0	183	0
S	1509	27	0	0	0	0	0	18797	0
S	1509	28	0	0	0	0	0	18797	0
S	1509	29	1	1734	449	1466	11668	867	0

SSPE (lbs)

70926

2847

8241

188797

405508

* MINUS PUGITIVE EMISSION (MARKED BY *) - 741
404,767

Saturday, December 07, 2013

Page 2 of 2

Notes:

Blank values for a particular permit unit do not necessarily reflect zero emissions. For units with blank values, the PE must still be determined based on physical PE or as limited by permit condition.

For permits that show outstanding ATCs, consult PAS ATC Emission Profile records to determine what the highest PE is for each pollutant.

ATCs for new units (e.g. S-XXXX-X-0) must be added in separately.

ERC's for onsite reductions must be added in separately per Rule 2201 as well.

Attachment D
BACT Guideline and Top down BACT Analysis

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 7.3.1*

Last Update 10/1/2002

**Petroleum and Petrochemical Production - Fixed Roof Organic
Liquid Storage or Processing Tank, < 5,000 bbl Tank capacity ****

Pollutant	Achieved In Practice or contained In the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	PV-vent set to within 10% of maximum allowable pressure	99% control (Waste gas incinerated in steam generator, heater treater, or other fired equipment and inspection and maintenance program; transfer of noncondensable vapors to gas pipeline; reinjection to formation (if appropriate wells are available); or equal).	

** Converted from Determinations 7.1.11 (10/01/02).

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**

Top Down BACT Analysis (S-1329-35-0 & '36-0)

VOC emissions may occur when the produced fluids from the crude oil production wells enter the oil storage tanks.

Step 1 - Identify All Possible Control Technologies

BACT Guideline 7.3.1 lists the controls that are considered potentially applicable to fixed-roof organic liquid storage or processing tank <5,000 bbl tank capacity. The VOC control measures are summarized below.

Technologically feasible:

99% control (Waste gas incinerated in steam generator, heater treater, or other fired equipment and inspection and maintenance program,

Transfer of uncondensed vapors to gas pipeline or reinjection to formation (if appropriate wells are available).

Achieved in Practice:

PV vent set to within 10% of maximum allowable pressure.

Step 2 - Eliminate Technologically Infeasible Options

All of the above identified control options are technologically feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. Transfer of uncondensed vapors to gas pipeline or reinjection to formation (if appropriate wells are available).
2. Waste gas incinerated in steam generator, heater treater, or other fired equipment and inspection and maintenance program at 99% control, or
3. PV vent set to within 10% of maximum allowable pressure.

Step 4 - Cost Effectiveness Analysis

Applicant has provided a quote of \$70,715.80 for the installation of a vapor control (see below).

Annualized Capital Cost:

AP = (P) $\{[(i) (1 + i)^n]/[(1 + i)^n - 1]\}$, where

AP = Equivalent Annual Capital Cost of Control Equip.

P = Present value of the control equipment, including installation cost.
\$70,715.80

i = interest rate (use 10% per policy)

n = equipment life (assume 10 years per policy)

AP = (P) $\{[(0.1) (1 + 0.1)^{10}]/[(1 + 0.1)^{10} - 1]\}$

AP = (P) x (0.16274) = (\$70,715) (0.1627) = \$11,505.33/year

Annual Maintenance Cost:

\$12,000/year (\$1000/month contract)

Annual Electrical Cost:

\$7200/year — \$600 month (Applicant estimate)

Total Annual Cost

\$11,505/year + \$12,000/year + \$7200/year = \$30,705

For calculation of the amount of VOCs removed from each tank (emissions unit) with the vapor control system, 99% control is assumed. The VOCs removed annually are

2127 lb/year x 99% = 2106 lb-VOC/year

Tons/yr = 2106 lb/yr/2000 lb/ton = 1.05 tons/yr

Annualized cost = \$30,705/yr/1.05 tons/yr
=\$29,243/ton

This exceeds the cost effectiveness threshold for VOCs of \$17,500/ton. Therefore the vapor control system is not cost effective.

Step 5 - Select BACT

PV vent set to within 10% of maximum allowable pressure.

Attachment E
Health Risk Assessment

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Steve Davidson – Permit Services
 From: Yu Vu – Technical Services
 Date: January 18, 2014
 Facility Name: Hunter Edison Oil Development (S-1329)/Vaquero Energy (S-1509)
 Location: S-1329: SW/4 Sec 13, T30S, R29E; S-1509: Sec 1, T30S, 28E
 Application #(s): S-1329-35-0 and -36-0; S-1509-27-1
 Project #: S-1140115 (S-1329) and S-1134768 (S-1509)

A. RMR SUMMARY

RMR Summary							
Categories	Crude Oil Storage Tank (Unit S-1329-35-0)	Crude Oil Storage Tank (Unit S-1329-36-0)	Crude Oil Storage Tank (Unit S-1509-27-1)	Project Totals S-1329	Facility Totals S-1329	Project Totals S-1509	Facility Totals S-1509
Prioritization Score	0.01	0.01	0.13	0.01	>1	0.13	>1
Acute Hazard Index	0.01	0.01	N/A ¹	0.02	0.03	N/A	0.00
Chronic Hazard Index	0.00	0.00	N/A ¹	0.00	0.00	N/A	0.00
Maximum Individual Cancer Risk (10 ⁻⁶)	0.04	0.05	N/A ¹	0.09	8.48	N/A	1.39
T-BACT Required?	No	No	No				
Special Permit Conditions?	No	No	No				

¹ This unit was not evaluated for risk since there was no increase in emissions associated with it. The unit was evaluated solely for updating its prioritization score.

1. Proposed Permit Conditions

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

Units # S-1329-35-0 and S-1329-36-0

1. VOC emissions shall not exceed 0.2 lb/hr and 2127 lb/yr. [District Rule 2201]

B. RMR REPORT

I. Project Description

Technical Services received a request on January 17, 2014, to perform a Risk Management Review for a proposed installation of a two crude oil storage tanks (units S-1329-35-0 and S-1329-36-0) and a reduction of throughput for unit S-1509-27-1. This project also triggers a public notice, however, the only emissions associated with this project are VOC emissions, so an Ambient Air Quality Analysis was not performed (there are currently no VOC standards). Unit S-1509-27-1 did not have any emissions increase associated with it, it was evaluated solely for updating its prioritization score.

II. Analysis

Technical Services performed a health risk assessment using the District approved emission factors for oilfield fugitives. The cumulative prioritization scores were greater than 1.0, thus modeling was conducted using the AERMOD model, with the parameters outlined below and meteorological data for 2005-2009 from Bakersfield to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid.

Analysis Parameters Unit s-1329-35-0 and -36-0				
Source Type	Circular Area	Location Type	Rural	
Radius of Circular Area (m)	4.572	Closest Receptor (m)	~400	
		Type of Receptor	Business	
Release Height (m)	4.877	Pollutant Type	VOC	
			Emission Rate (g/sec-m ²)	0.0134

III. Conclusion

The acute and chronic indices are below 1.0 and the cancer risk factor associated with project S-1140115 is less than 1.0 in a million. There is no risk associated with project S-1134768. **In accordance with the District's Risk Management Policy, the projects are 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 proposed unit.

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

IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer

- C. Toxic emissions summary
- D. Prioritization score
- E. Facility Summary

**Attachment F
Compliance Certification**

December 10, 2013

Mr. Leonard Scandura
Permit Services Manager
San Joaquin Valley Unified
Air Pollution Control District
34946 Flyover Ct.
Bakersfield, CA 93308

Subject: Federal Major Modification Compliance Certification – S-1327/S-1509

Dear Mr. Scandura:

I hereby certify that all major Stationary Sources owned or operated by such person (or by any entity controlling, controlled by, or under common control with such person) in California, which are subject to emission limitations, are in compliance or on a schedule for compliance with all applicable emission limitations and standards.



Signature

Compliance Specialist

Title

Attachment G
Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: S-1329-35-0

LEGAL OWNER OR OPERATOR: HUNTER EDISON OIL DEVELOPMENT
MAILING ADDRESS: C/O VAQUERO ENERGY
P.O. BOX 13550
BAKERSFIELD, CA 93389

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: 13 TOWNSHIP: 30S RANGE: 29E

EQUIPMENT DESCRIPTION:
1600 BBL CRUDE OIL STORAGE TANK (COMMON LEASE) WITH PV VALVE

CONDITIONS

1. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
2. VOC emission rate from the tank shall not exceed 5.8 lb/day. [District Rule 2201]
3. Crude oil throughput shall not exceed 50 barrels per day based on a monthly average. [District Rule 2201 and 4623]
4. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 2201]
5. The tank shall be equipped with a fixed roof with no holes or openings. [District Rule 2201]
6. This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions. [District Rule 2201]
7. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2080]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (861) 392-6500 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-1329-35-0: Jan 31 2014 9:24AM - DAVIDSON - Joint Inspection NOT Required

8. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 2080]
9. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rule 2080]
10. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 2080]
11. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 3 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 3 shall constitute a violation of this rule. [District Rule 2080]
12. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 2080]
13. Any component found to be leaking on two consecutive annual inspections is in violation of this rule, even if covered under the voluntary inspection and maintenance program. [District Rule 2080]
14. Permittee shall notify the APCO in writing at least three (3) days prior to performing tank degassing and interior tank cleaning activities. Written notification shall include the following: 1) the Permit to Operate number and physical location of the tank being degassed, 2) the date and time that tank degassing and cleaning activities will begin, 3) the degassing method, as allowed in this permit, to be used, 4) the method to be used to clean the tank, including any solvents to be used, and 5) the method to be used to dispose of any removed sludge, including methods that will be used to control emissions from the receiving vessel and emissions during transport. [District Rule 2080]
15. This tank shall not be required to de-gas before commencing cleaning activities. All other applicable requirements shall be complied with before, during, and after tank cleaning activities. [District Rule 2080]
- ~~16. While performing tank cleaning activities, operators may only use the following cleaning agents: diesel, solvents with an initial boiling point of greater than 302 degrees F, solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams of VOC per liter or less. [District Rule 2080]~~
17. Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rule 2080]
18. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank upon initial start-up, at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rule 2201]
19. The permittee shall conduct an API gravity testing upon initial start-up. [District Rule 2201]
20. The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. [District Rule 2201]
21. For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "Test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA [District Rule 2201]
22. The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287 e1 "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 2201]

DRAFT
CONDITIONS CONTINUE ON NEXT PAGE

23. Permittee shall maintain monthly records of average daily crude oil throughput and shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rules 2201 and 4623]
24. Monthly records of average daily crude oil throughput shall be submitted to the APCO 30 days prior to the expiration date indicated in the Permit to Operate. [District Rules 2201 and 4623]
25. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 2201]
26. ATC S-1509-27-1 shall be implemented prior to or concurrent with this ATC. [District Rule 2201]

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT
ISSUANCE DATE: DRAFT

PERMIT NO: S-1329-36-0

LEGAL OWNER OR OPERATOR: HUNTER EDISON OIL DEVELOPMENT
MAILING ADDRESS: C/O VAQUERO ENERGY
P.O. BOX 13550
BAKERSFIELD, CA 93389

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: 13 TOWNSHIP: 30S RANGE: 29E

EQUIPMENT DESCRIPTION:
1600 BBL CRUDE OIL STORAGE TANK (COMMON LEASE) WITH PV VALVE

CONDITIONS

1. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
2. VOC emission rate from the tank shall not exceed 5.8 lb/day. [District Rule 2201]
3. Crude oil throughput shall not exceed 50 barrels per day based on a monthly average. [District Rule 2201 and 4623]
4. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 2201]
5. The tank shall be equipped with a fixed roof with no holes or openings. [District Rule 2201]
6. This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions. [District Rule 2201]
7. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2080]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director, APCO

DRAFT

DAVID WARNER, Director of Permit Services
S-1329-36-0 : Jan 31 2014 9:24AM - DAVID308 : Joint Inspection NOT Required

8. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 2080]
9. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rule 2080]
10. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 2080]
11. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 3 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 3 shall constitute a violation of this rule. [District Rule 2080]
12. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 2080]
13. Any component found to be leaking on two consecutive annual inspections is in violation of this rule, even if covered under the voluntary inspection and maintenance program. [District Rule 2080]
14. Permittee shall notify the APCO in writing at least three (3) days prior to performing tank degassing and interior tank cleaning activities. Written notification shall include the following: 1) the Permit to Operate number and physical location of the tank being degassed, 2) the date and time that tank degassing and cleaning activities will begin, 3) the degassing method, as allowed in this permit, to be used, 4) the method to be used to clean the tank, including any solvents to be used, and 5) the method to be used to dispose of any removed sludge, including methods that will be used to control emissions from the receiving vessel and emissions during transport. [District Rule 2080]
15. This tank shall not be required to de-gas before commencing cleaning activities. All other applicable requirements shall be complied with before, during, and after tank cleaning activities. [District Rule 2080]
- ~~16. While performing tank cleaning activities, operators may only use the following cleaning agents: diesel, solvents with an initial boiling point of greater than 302 degrees F, solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams of VOC per liter or less. [District Rule 2080]~~
17. Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rule 2080]
18. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank upon initial start-up, at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rule 2201]
19. The permittee shall conduct an API gravity testing upon initial start-up. [District Rule 2201]
20. The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. [District Rule 2201]
21. For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "Test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA [District Rule 2201]
22. The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287 e1 "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 2201]

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CONDITIONS CONTINUE ON NEXT PAGE

23. Permittee shall maintain monthly records of average daily crude oil throughput and shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rules 2201 and 4623]
24. Monthly records of average daily crude oil throughput shall be submitted to the APCO 30 days prior to the expiration date indicated in the Permit to Operate. [District Rules 2201 and 4623]
25. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 2201]
26. ATC S-1509-27-1 shall be implemented prior to or concurrent with this ATC. [District Rule 2201]

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: S-1509-27-1

LEGAL OWNER OR OPERATOR: VAQUERO ENERGY, INC.
MAILING ADDRESS: P.O. BOX 13550
BAKERSFIELD, CA 93389

LOCATION: HEAVY OIL CENTRAL
KERN COUNTY, CA

SECTION: 01 TOWNSHIP: 30S RANGE: 28E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 500 BBL FIXED ROOF CRUDE OIL PRODUCTION TANK (STOCK TANK) WITH PRESSURE RELIEF VALVE (LV SMITH LEASE): REDUCE THROUGHPUT TO 785 BBLs

CONDITIONS

1. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
4. The tank shall be equipped with a fixed roof with no holes or openings. [District Rule 2201]
5. VOC emission rate from the tank shall not exceed 40.3 lb/day. [District Rule 2201]
6. {2480} This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623]
7. Daily average tank oil throughput shall not exceed 785 barrels per day. [District Rule 2201]
8. This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director, APCO

DAVID WARNER, Director of Permit Services

6-1800-27-1 | Jan 31 2014 9:00AM - DAVID008 | Joint Inspection NOT Required

Southern Regional Office • 34946 Flyover Court • Bakersfield, CA 93308 • (661) 392-5500 • Fax (661) 392-5585

9. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2080]
10. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 2080]
11. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rule 2080]
12. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 2080]
13. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 3 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 3 shall constitute a violation of this rule. [District Rule 2080]
14. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 2080]
15. Any component found to be leaking on two consecutive annual inspections is in violation of this rule, even if covered under the voluntary inspection and maintenance program. [District Rule 2080]
16. Permittee shall notify the APCO in writing at least three (3) days prior to performing tank degassing and interior tank cleaning activities. Written notification shall include the following: 1) the Permit to Operate number and physical location of the tank being degassed, 2) the date and time that tank degassing and cleaning activities will begin, 3) the degassing method, as allowed in this permit, to be used, 4) the method to be used to clean the tank, including any solvents to be used, and 5) the method to be used to dispose of any removed sludge, including methods that will be used to control emissions from the receiving vessel and emissions during transport. [District Rule 2080]
17. This tank shall not be required to de-gas before commencing cleaning activities. All other applicable requirements shall be complied with before, during, and after tank cleaning activities. [District Rule 2080]
18. While performing tank cleaning activities, operators may only use the following cleaning agents: diesel, solvents with an initial boiling point of greater than 302 degrees F, solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams of VOC per liter or less. [District Rule 2080]
19. Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rule 2080]
20. {2910} Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rule 4623]
21. {2911} The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. The permittee shall also conduct an API gravity testing. [District Rule 4623]
22. {2483} For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA. [District Rule 4623]

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CONDITIONS CONTINUE ON NEXT PAGE

23. {2482} The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287 e1 "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 4623]
24. {2912} Permittee shall submit the records of TVP and API gravity testing to the APCO within 45 days after the date of testing. The records shall include the tank identification number, Permit to Operate number, type of stored organic liquid, TVP and API gravity of the organic liquid, test methods used, and a copy of the test results. [District Rule 4623]
25. {2913} The permittee shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rule 4623]
26. {2490} All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623]
27. NOTE: Facilities #S-1329 and #S-1509 are both included in the same Heavy Oil Central stationary source. [District Rule 2201]
28. This ATC shall be implemented prior to or concurrent with ATCs S-1329-35-0 and '1-36-0. [District Rule 2201]

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