



JUL 08 2013

Mr. Jerry Frost  
Vintage Production California  
9600 Ming Ave  
Bakersfield, CA 93311

**Re: Proposed Authority to Construct/Certificate of Conformity (Minor Mod)  
District Facility # S-1327  
Project # 1132362**

Dear Mr. Frost:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. You requested that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. Vintage Production California, LLC is applying for Authority to Construct (ATC) permits for the installation of six fixed roof 500 bbl crude oil tanks.

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

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

**Seyed Sadredin**  
Executive Director/Air Pollution Control Officer

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**Northern Region**  
4800 Enterprise Way  
Modesto, CA 95356-8718  
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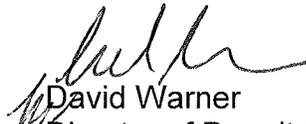
**Southern Region**  
34946 Flyover Court  
Bakersfield, CA 93308-9725  
Tel: 661-392-5500 FAX: 661-392-5585

JUL 08 2013

Mr. Jerry Frost  
Page 2

Thank you for your cooperation in this matter.

Sincerely,

  
David Warner  
Director of Permit Services

Enclosures

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



## VINTAGE PRODUCTION CALIFORNIA, LLC, 1132362, S-1327

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

Rule 4101 Visible Emissions (2/17/05)  
Rule 4102 Nuisance (12/17/92)  
Rule 4201 Particulate Matter Concentration (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**

Tanks S-1327-202, '203 and '204 will be located at the Band Fee Lease and tanks S-1327-205, '206 and '207 will be located at the Midway Pacific Lease all within Section 24, Township 31S, Range 22E near Fellows, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

### **IV. Process Description**

The tanks will receive production from Band Fee and Midway Pacific leases the prior to transport to the next location. Please see process flow diagrams in Appendix B.

### **V. Equipment Listing**

Tanks Proposed for Surrender (see PTOs in Appendix C):

S-1327-188: ONE 161 BBL FIXED ROOF PETROLEUM STORAGE TANK #TRFI  
S-1327-189: ONE 1,600 BBL FIXED ROOF PETROLEUM STORAGE TANK #9825  
S-1327-190: ONE 1,600 BBL FIXED ROOF PETROLEUM STORAGE TANK #9824  
S-1327-191: ONE 796 BBL FIXED ROOF PETROLEUM STORAGE TANK #BFWI  
S-1327-194: ONE 1,044 BBL FIXED ROOF PETROLEUM STORAGE TANK #10172  
S-1327-195: ONE 1,987 BBL FIXED ROOF PETROLEUM STORAGE TANK #10173

Proposed ATCs:

S-1327-202-0: 500 BBL FIXED ROOF CRUDE OIL WASH TANK WITH PV VALVE (BAND FEE LEASE)  
S-1327-203-0: 500 BBL FIXED ROOF CRUDE OIL TANK WITH PV VALVE (BAND FEE LEASE)

**VINTAGE PRODUCTION CALIFORNIA, LLC, 1132362, S-1327**

S-1327-204-0: 500 BBL FIXED ROOF CRUDE OIL TANK WITH PV VALVE (BAND FEE LEASE)

S-1327-205-0: 500 BBL FIXED ROOF CRUDE OIL WASH TANK WITH PV VALVE (TANK MIDWAY PACIFIC LEASE)

S-1327-206-0: 500 BBL FIXED ROOF CRUDE OIL TANK WITH PV VALVE (MIDWAY PACIFIC LEASE)

S-1327-207-0: 500 BBL FIXED ROOF CRUDE OIL TANK WITH PV VALVE (MIDWAY PACIFIC LEASE)

**VI. Emission Control Technology Evaluation**

The tank(s) are/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. General 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 gray, and the shade is medium.
- TVP of oil for existing tanks= 1.5 psia (Applicant)
- TVP of oil for proposed tanks= 0.5 psia (Applicant)
- Tank temperature, 120° F (unheated)
- Fluid throughput existing tanks = 50 bbl/day (PTO crude throughput limit)
- Fluid throughput proposed tanks 200 bbl/day (Applicant)

**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. The spreadsheet 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)**

**VINTAGE PRODUCTION CALIFORNIA, LLC, 1132362, S-1327**

<b>PE1</b>		
	Daily Emissions (lb-VOC/day)	Annual Emissions (lb-VOC/year)
S-1327-188	6.3	2292
S-1327-189	11.9	4359
S-1327-190	11.9	4359
S-1327-191	10.5	3821
S-1327-194	7.7	2826
S-1327-195	16.4	5975
<b>Total:</b>		<b>23,632</b>

See calculation spreadsheets in Appendix D

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

<b>PE2</b>		
	Daily Emissions (lb-VOC/day)	Annual Emissions (lb-VOC/year)
S-1327-202-0	4.6	1672
S-1327-203-0	11.2	4096
S-1327-204-0	11.2	4096
S-1327-205-0	4.6	1672
S-1327-206-0	11.2	4096
S-1327-207-0	11.2	4096
<b>Total:</b>		<b>19,728</b>

See calculation spreadsheets in Appendix E

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

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

Facility emissions are already above the Offset and Major Source Thresholds for 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.

Since facility emissions are already above the Offset and Major Source Thresholds for VOC emissions, 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							>100,000
PSD Major Source Thresholds	250	250	250	250	250	250	100,000
PSD Major Source ? (Y/N)							y

As shown above, the facility is an existing major source for PSD for at least one pollutant. Therefore the facility is an existing major source for PSD.

**6. Baseline Emissions (BE)**

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

Pursuant to 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,

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

Since tank S-1327-188, '189, '190, '191, '194 and '195 has a pressure/vacuum relief device, it is considered a Clean Emissions Units.

Since tanks S-1327-202-0, '203-0, '204-0, '205-0, '206-0 and '207-0 are new emissions units, BE = PE1 = 0 for all pollutants.

**7. SB 288 Major Modification**

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

Since this facility is a major source for VOC, the project's PE2 is compared to the SB 288 Major Modification Thresholds in the following table in order to determine if the SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO <sub>x</sub>		50,000	
SO <sub>x</sub>		80,000	
PM <sub>10</sub>		30,000	
VOC	19,728	50,000	no

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

**8. Federal Major Modification**

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

**Step 1**

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

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

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

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

If there is no increase in design capacity or potential to emit, the PAE is equal to the annual emission rate at which the unit is projected to emit in any one year, selected by

the operator, within 5 years after the unit resumes normal operation (10 years for existing units with an increase in design capacity or potential to emit). If detailed PAE are not provided, the PAE is equal to the PE2 for each permit unit.

The BAE is calculated based on historical emissions and operating records for any 24 month period, selected by the operator, within the previous 10 year period (5 years for electric utility steam generating units). The BAE must be adjusted to exclude any non-compliant operation emissions and emissions that are no longer allowed due to lower applicable emission limits that were in effect when this application was deemed complete.

Pursuant to section 40 CFR 51.165(a)(1)(vii)(B) a “replacement unit” is considered to be an “existing emissions unit”; therefore, the replacement tanks’ BAE will be based on the existing tanks’ BAE.

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

$$\text{Net Emission Increase (NEI)} = \text{PAE} - \text{BAE} - \text{UBC} = 0$$

Therefore, there is no emission increase, the project is not 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:

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

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

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

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

**VINTAGE PRODUCTION CALIFORNIA, LLC, 1132362, S-1327**

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

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

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

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

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

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

<b>PSD Significant Emission Increase Determination: Potential to Emit (tons/year)</b>						
	NO2	SO2	CO	PM	PM10	CO2e
Total PE from New and Modified Units	0	0	0	0	0	207
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000
PSD Significant Emission Increase?	n	n	n	n	n	n

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

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

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

**VIII. Compliance**

**Rule 2201 New and Modified Stationary Source Review Rule**

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

## 1. BACT Applicability

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

- 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 new tanks each with a PE greater than 2 lb-VOC/day as calculated in section VII.C.2. Since the daily VOC emissions are greater than 2.0 lbs/day, BACT will be required for each new tank.

## 2. BACT Guideline

Per District Policy APR 1305, Section IX, "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 for source categories or classes covered in the BACT Clearinghouse, relevant information under each of the following steps may be simply cited from the Clearinghouse without further analysis."

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 Appendix F)

### 3. Top-Down BACT Analysis

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

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

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

## B. Offsets

### 1. Offset Applicability

**VINTAGE PRODUCTION CALIFORNIA, LLC, 1132362, S-1327**

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

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

<b>Offset Determination (lb/year)</b>					
	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	CO	VOC
SSPE2	--	--	--	--	>20,000
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	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.

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

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

Where,

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

BE = Baseline Emissions, (lb/year)

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

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

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

otherwise,

BE = HAE

As calculated in Section VII.C.6 above, the BE from the units equals PE1 since the units are Clean Emissions Units. Therefore offsets can be determined as follows:

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

PE2 (VOC) = 19,728 lb/year

BE (VOC) = 23,632 lb/year

ICCE = 0 lb/year

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$$\begin{aligned} \text{Offsets Required (lb/year)} &= ([19,728 - 23,632] + 0) \times \text{DOR} \\ &= 0 \text{ lb VOC/year} \end{aligned}$$

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

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

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

As demonstrated in Sections VII.C.7 and VII.C.8, this project does not constitute an SB 288 or Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is not required.

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

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. As seen in Section VII.C.2 above, this project does not include a new emissions unit which has daily emissions greater than 100 lb/day for any pollutant, therefore public noticing for PE > 100 lb/day purposes is not required.

**c. Offset Threshold**

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

<b>Offset Thresholds</b>				
<b>Pollutant</b>	<b>SSPE1 (lb/year)</b>	<b>SSPE2 (lb/year)</b>	<b>Offset Threshold</b>	<b>Public Notice Required?</b>
NO <sub>x</sub>			20,000 lb/year	No
SO <sub>x</sub>			54,750 lb/year	No
PM <sub>10</sub>			29,200 lb/year	No
CO			200,000 lb/year	No
VOC	>20,000	>20,000	20,000 lb/year	No

**VINTAGE PRODUCTION CALIFORNIA, LLC, 1132362, S-1327**

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

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

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

<b>SSIPE Public Notice Thresholds</b>					
<b>Pollutant</b>	<b>SSPE2 (lb/year)</b>	<b>SSPE1 (lb/year)</b>	<b>SSIPE (lb/year)</b>	<b>SSIPE Public Notice Threshold</b>	<b>Public Notice Required?</b>
NO <sub>x</sub>				20,000 lb/year	No
SO <sub>x</sub>				20,000 lb/year	No
PM <sub>10</sub>				20,000 lb/year	No
CO				20,000 lb/year	No
VOC	19,728	23,632	0	20,000 lb/year	No

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

**2. Public Notice Action**

As discussed above, this project will not result in emissions, for any pollutant, which would subject the project to any of the noticing requirements listed above. Therefore, public notice will not be required for this project.

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

Daily Emission Limits, DELs, are required by Rule 2201 Section 5.7.2. 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**

**1. Source Testing**

Pursuant to District Policy APR 1705, source testing is not required to demonstrate compliance with Rule 2201.

**2. Monitoring**

No monitoring is required to demonstrate compliance with Rule 2201.

**3. Recordkeeping**

## VINTAGE PRODUCTION CALIFORNIA, LLC, 1132362, S-1327

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

- Permittee shall maintain monthly records of average daily fluid 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] N
- {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] 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 and 4623] N

### **4. Reporting**

No reporting is required to demonstrate compliance with Rule 2201.

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

This facility is subject to this Rule, and has received their Title V Operating Permit. A significant permit modification is defined as a “permit amendment that does not qualify as a minor permit modification or administrative amendment.”

Minor permit modifications are not Federal Major Modifications. As a result, the proposed project constitutes a Significant Modification to the Title V Permit.

### **Rule 4001 New Source Performance Standards (NSPS)**

This rule incorporates the New Source Performance Standards from 40 CFR Part 60. 40 CFR Part 60, Subparts, K, Ka, Kb, and OOOO and could potentially apply to the storage tanks located at this facility.

40 CFR Part 60, Subparts, K, Ka, and Kb could potentially apply to the storage tanks located at this facility. However, pursuant to 40 CFR 60.110 (b), 60.110(a) (b), and 60.110(b) (b), these subparts do not apply to storage vessels less than 10,000 bbls, used for petroleum or condensate, that is stored, processed, and/or treated at a drilling and production facility prior to custody transfer.

40 CFR Part 60, Subpart OOOO—Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution (constructed, reconstructed, or modified after 8/23/11) applies to single storage vessel, located in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment. The subject tanks are subject to this subpart. However, Subpart OOOO has no standards for tanks with annual VOC emissions less than 6 tons per year. Therefore, the subject tanks are not an affected facility and subpart OOOO does not apply.

Therefore, the requirements of this subpart are not applicable to this project.

VINTAGE PRODUCTION CALIFORNIA, LLC, 1132362, S-1327

**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 Nuisance**

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

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

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

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

The cancer risk for this project is shown below:

<b>RMR Summary</b>								
<b>Categories</b>	<b>Tank Unit 202</b>	<b>Tank Unit 203</b>	<b>Tank Unit 204</b>	<b>Tank Unit 205</b>	<b>Tank Unit 206</b>	<b>Tank Unit 207</b>	<b>Project Totals</b>	<b>Facility Totals</b>
<b>Prioritization Score</b>	0.0 <sup>1</sup>	0.0	>1					
<b>Acute Hazard Index</b>	2.32E-3	2.32E-3	2.32E-3	6.2E-4	6.2E-4	6.2E-4	8.82E-3	0.011
<b>Chronic Hazard Index</b>	7.9E-5	7.9E-5	7.9E-5	5.7E-6	5.7E-6	5.7E-6	2.54E-4	0.0008
<b>Individual Cancer Risk (10<sup>-6</sup>)</b>	0.15	0.15	0.15	0.01	0.01	0.01	0.48	0.49
<b>T-BACT Required?</b>	<b>No</b>							
<b>Special Permit Conditions?</b>	<b>No</b>							

<sup>1</sup>Facility total prioritization score was greater than 1.0.

**Discussion of T-BACT**

## VINTAGE PRODUCTION CALIFORNIA, LLC, 1132362, S-1327

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

### **Rule 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 Section 4.4, tanks exclusively receiving and or storing organic liquids with a TVP less than 0.5 psia are exempt from this rule except for complying with Sections 6.2, 6.3.6, 6.4 and 7.2.

Therefore the following conditions will apply:

- 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 Rules 2201 and 4623] N
- 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 Rules 2201 and 4623] N
- 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 Rules 2201 and 4623] N
- Permittee shall maintain monthly records of average daily crude oil throughput and shall submit such information to the APCO 30 days prior to the expiration date indicated in the Permit to Operate. [District Rules 2201 and 4623] N
- The permittee 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] 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 and 4623] N

Compliance with the requirements of this rule is expected.

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

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

### **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.

Consistent with California Environmental Quality Act (CEQA) and CEQA Guidelines requirements, the San Joaquin Valley Air Pollution Control District (District) has adopted procedures and guidelines for implementing CEQA. The District's Environmental Review Guidelines (ERG) establishes procedures for avoiding unnecessary delay during the District's permitting process while ensuring that significant environmental impacts are thoroughly and consistently addressed. The ERG includes policies and procedures to be followed when processing permits for projects that are exempt under CEQA.

The State Legislature granted a number of exemptions from CEQA, including projects that require only ministerial approval. Based upon analysis of its own laws and consideration of CEQA provisions, the District has identified a limited number of District permitting activities considered to be ministerial approvals. As set forth in §4.2.1 of the ERG, projects permitted consistent with the District's *Guidelines for Expedited Application Review* (GEAR) are standard application reviews in which little or no discretion is used in issuing Authority to Construct (ATC) documents.

For the proposed project, the District performed an Engineering Evaluation (this document) and determined that the project qualifies for processing under the procedures set forth in the District's Permit Services Procedures Manual in the Guidelines for Expedited Application Review (GEAR). Thus, as discussed above, this issuance of such ATC(s) is a ministerial approval for the District and is not subject to CEQA provisions.

## **IX. Recommendation**

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATCs S-1327-202-0, '203-0, '204-0, '205-0, '206-0 and '207-0 subject to the permit conditions on the attached draft ATCs in **Appendix H**.

## **X. Billing Information**

**VINTAGE PRODUCTION CALIFORNIA, LLC, 1132362, S-1327**

<b>Annual Permit Fees</b>			
<b>Permit Number</b>	<b>Fee Schedule</b>	<b>Fee Description</b>	<b>Annual Fee</b>
S-1327-202-0	3020-05 C	21,000 gallons	\$135
S-1327-203-0	3020-05 C	21,000 gallons	\$135
S-1327-204-0	3020-05 C	21,000 gallons	\$135
S-1327-205-0	3020-05 C	21,000 gallons	\$135
S-1327-206-0	3020-05 C	21,000 gallons	\$135
S-1327-207-0	3020-05 C	21,000 gallons	\$135

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

Permit #: S-1327-202-0	Last Updated
Facility: VINTAGE PRODUCTION CALIFORNIA	06/22/2013 TORID

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	1672.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	4.6
Quarterly Net Emissions Change (lb/Qtr)					
Q1:					418.0
Q2:					418.0
Q3:					418.0
Q4:					418.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-1327-203-0	<b>Last Updated</b>
Facility: VINTAGE PRODUCTION CALIFORNIA	06/22/2013 TORID

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	5982.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	16.4
Quarterly Net Emissions Change (lb/Qtr)					
Q1:					1024.0
Q2:					1024.0
Q3:					1024.0
Q4:					1024.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-1327-204-0	Last Updated
Facility: VINTAGE PRODUCTION CALIFORNIA	06/22/2013 TORID

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	4096.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	11.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:					1024.0
Q2:					1024.0
Q3:					1024.0
Q4:					1024.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-1327-205-0	<b>Last Updated</b>
Facility: VINTAGE PRODUCTION CALIFORNIA	06/22/2013 TORID

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	1672.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	4.6
Quarterly Net Emissions Change (lb/Qtr)					
Q1:					418.0
Q2:					418.0
Q3:					418.0
Q4:					418.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-1327-206-0	<b>Last Updated</b>
Facility: VINTAGE PRODUCTION CALIFORNIA	06/22/2013 TORID

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	4096.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	11.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:					1024.0
Q2:					1024.0
Q3:					1024.0
Q4:					1024.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-1327-207-0	<b>Last Updated</b>
Facility: VINTAGE PRODUCTION CALIFORNIA	06/22/2013 TORID

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	4096.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	11.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:					1024.0
Q2:					1024.0
Q3:					1024.0
Q4:					1024.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

## Quarterly Net Emissions Change (QNEC)

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

QNEC = PE2 - PE1, where:

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

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

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

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

VOC Quarterly NEC [QNEC]					
	PE2 (lb/yr)	PE2 (lb/qtr)	PE1 (lb/yr)	PE1 (lb/qtr)	QNEC (lb/qtr)
S-1327-202-0	1672	418	0	0	418
S-1327-203-0	4096	1024	0	0	1024
S-1327-204-0	4096	1024	0	0	1024
S-1327-205-0	1672	418	0	0	418
S-1327-206-0	4096	1024	0	0	1024
S-1327-207-0	4096	1024	0	0	1024

# **APPENDIX B**

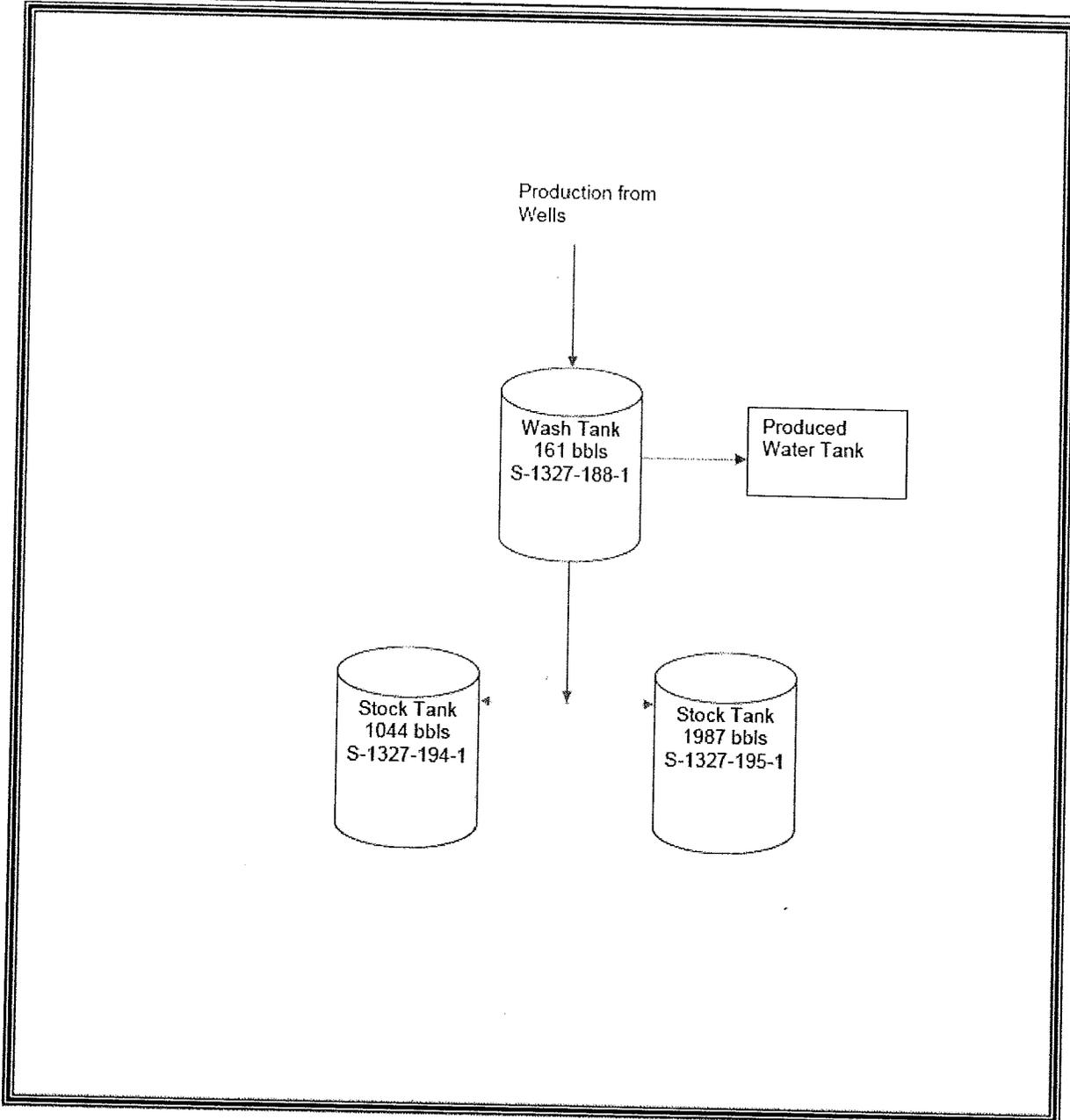
## **Process Flow Diagrams**

# Vintage Production CA



BUSINESS NAME: Midway-Pacific Tank Farm  
SCALE: NONE

## Pre-project Facility Diagram

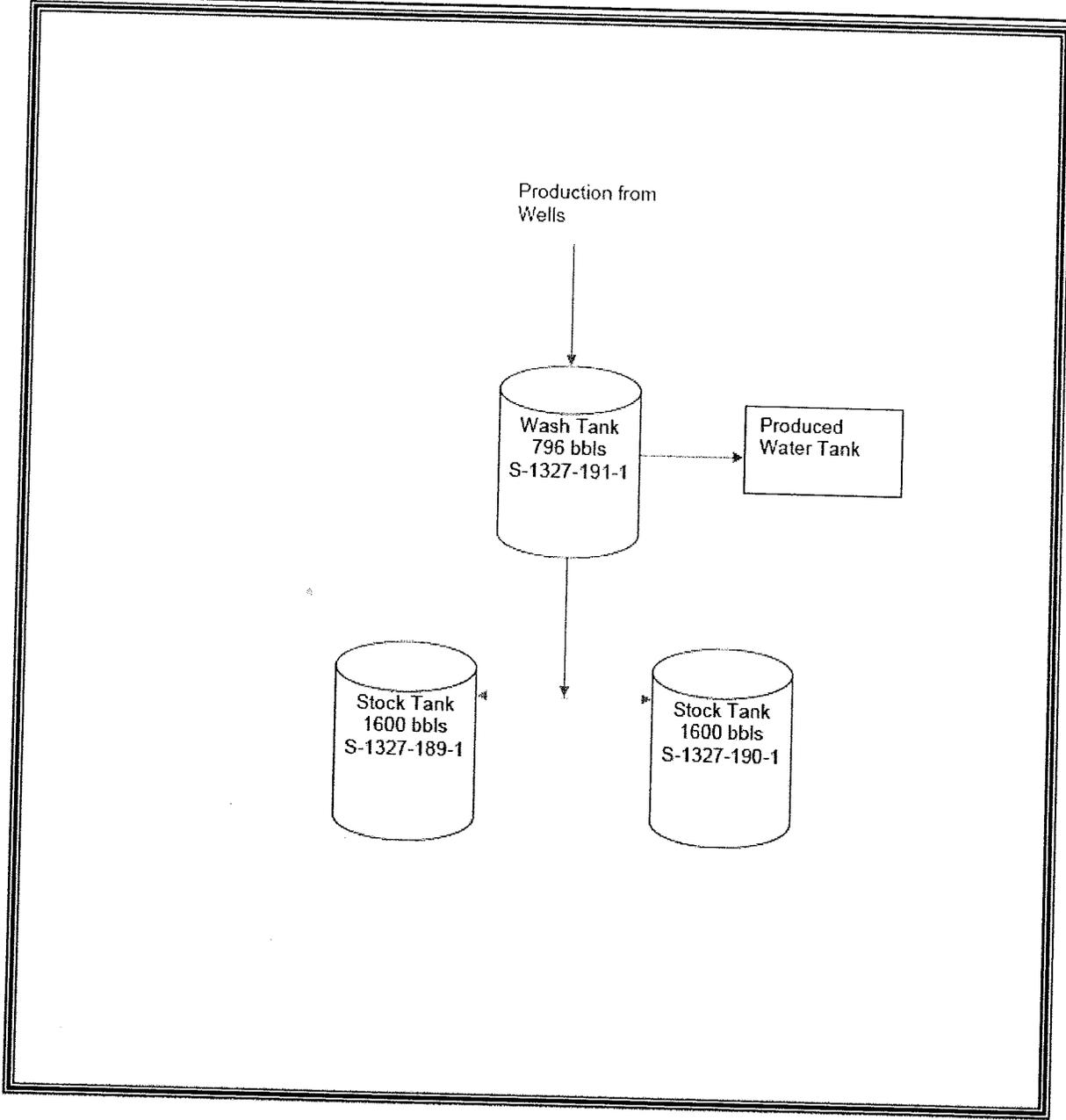


# Vintage Production CA



BUSINESS NAME: Band Fee Tank Farm  
SCALE: NONE

## Pre-project Facility Diagram

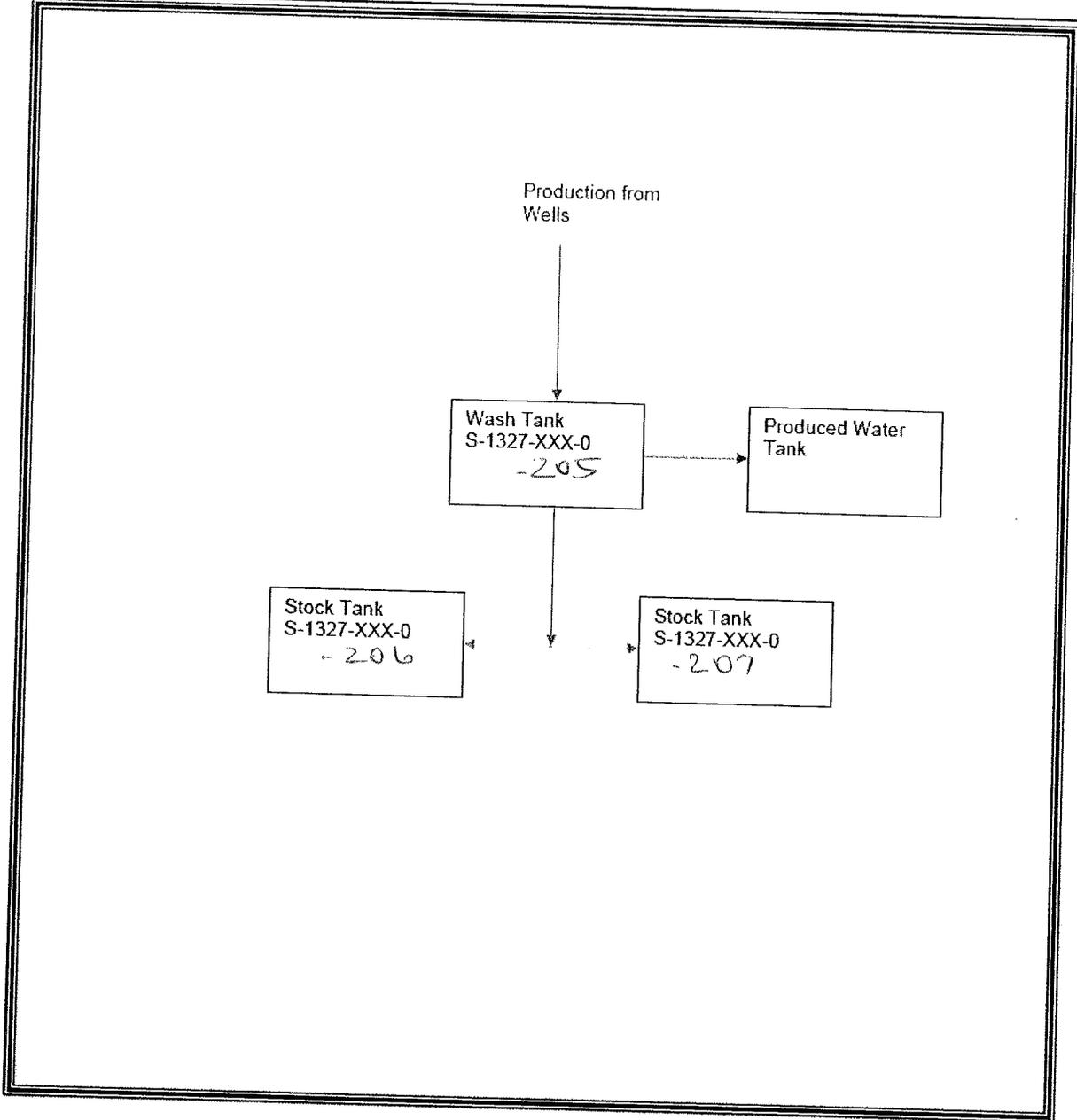


# Vintage Production CA



BUSINESS NAME: Midway-Pacific Tank Farm  
SCALE: NONE

## Post-project Facility Diagram

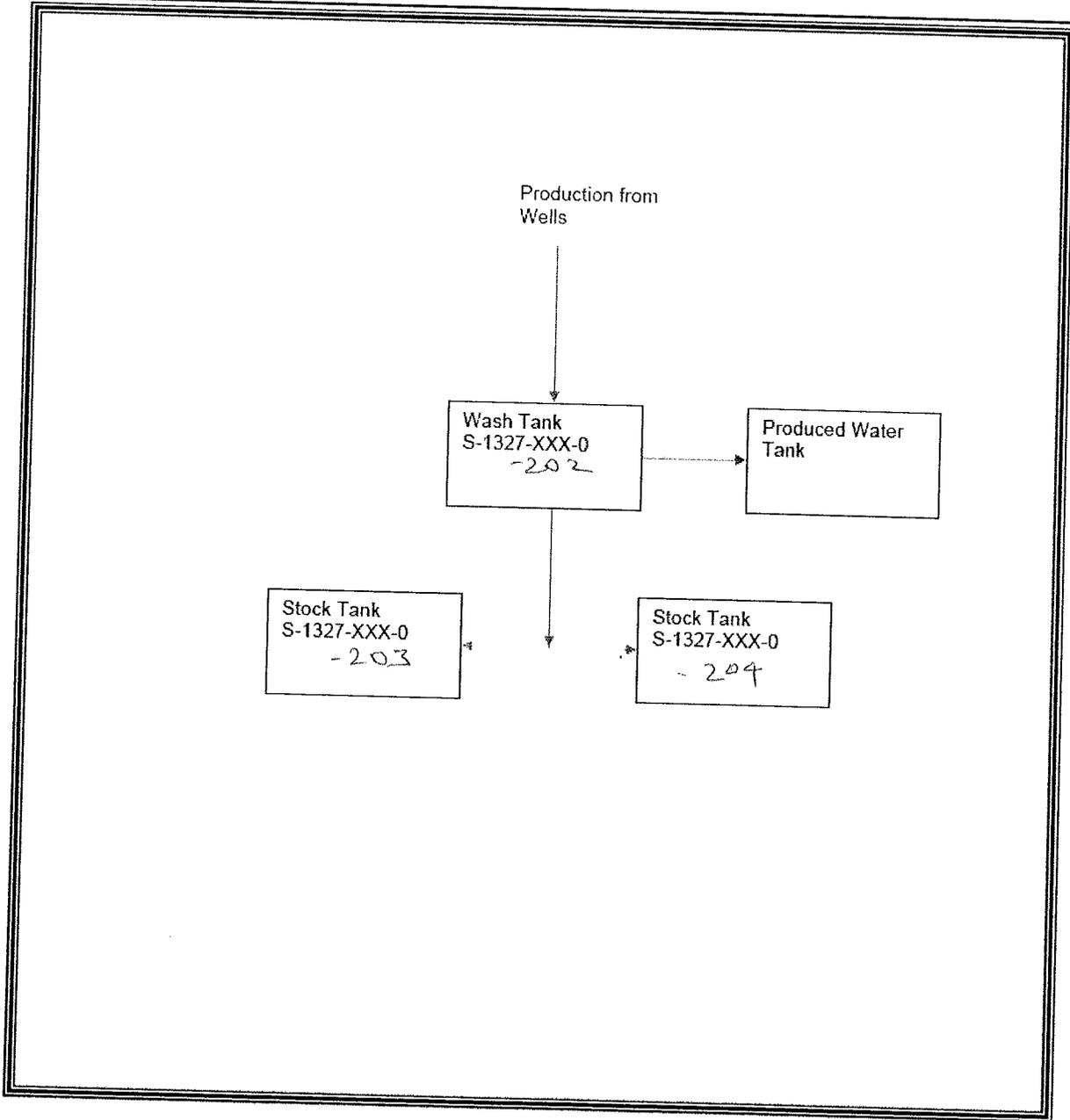


# Vintage Production CA



BUSINESS NAME: Band Fee Tank Farm  
SCALE: NONE

## Post-project Facility Diagram



**APPENDIX C**  
**PTOs S-1327-188, '189, '190, '191, '194 and '195**

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-1327-188-0

**EXPIRATION DATE:** 02/28/2017

**SECTION:** 24 **TOWNSHIP:** 31S **RANGE:** 22E

**EQUIPMENT DESCRIPTION:**

ONE 161 BBL FIXED ROOF PETROLEUM STORAGE TANK #TRFI

## PERMIT UNIT REQUIREMENTS

---

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. 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 gas-tight condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623]
3. This tank shall be in a leak-free condition. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623. [District Rule 4623]
4. True vapor pressure (TVP) of liquids stored in the tank shall not exceed 1.5 psia. [District Rule 2201]
5. Crude oil throughput shall not exceed 50 barrels per day based on a monthly average. [District Rule 2080]
6. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rule 4623]
7. Any component found to be leaking on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rule 4623]
8. 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]
9. 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]
10. 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]
11. 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]
12. 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]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

13. 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 4623]
14. 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.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-1327-189-0

**EXPIRATION DATE:** 02/28/2017

**SECTION:** 24 **TOWNSHIP:** 31S **RANGE:** 22E

**EQUIPMENT DESCRIPTION:**

ONE 1,600 BBL FIXED ROOF PETROLEUM STORAGE TANK #9825

## PERMIT UNIT REQUIREMENTS

---

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. 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 gas-tight condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623]
3. This tank shall be in a leak-free condition. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623. [District Rule 4623]
4. True vapor pressure (TVP) of liquids stored in the tank shall not exceed 1.5 psia. [District Rule 2201]
5. Crude oil throughput shall not exceed 50 barrels per day based on a monthly average. [District Rule 2080]
6. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rule 4623]
7. Any component found to be leaking on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rule 4623]
8. 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]
9. 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]
10. 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]
11. 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]
12. 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]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

13. 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 4623]
14. 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.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-1327-190-0

**EXPIRATION DATE:** 02/28/2017

**SECTION:** 24 **TOWNSHIP:** 31S **RANGE:** 22E

**EQUIPMENT DESCRIPTION:**

ONE 1,600 BBL FIXED ROOF PETROLEUM STORAGE TANK #9824

## PERMIT UNIT REQUIREMENTS

---

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. 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 gas-tight condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623]
3. This tank shall be in a leak-free condition. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623. [District Rule 4623]
4. True vapor pressure (TVP) of liquids stored in the tank shall not exceed 1.5 psia. [District Rule 2201]
5. Crude oil throughput shall not exceed 50 barrels per day based on a monthly average. [District Rule 2080]
6. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rule 4623]
7. Any component found to be leaking on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rule 4623]
8. 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]
9. 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]
10. 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]
11. 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]
12. 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]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

13. 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 4623]
14. 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.

# San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1327-191-0

EXPIRATION DATE: 02/28/2017

SECTION: 24 TOWNSHIP: 31S RANGE: 22E

**EQUIPMENT DESCRIPTION:**

ONE 796 BBL FIXED ROOF PETROLEUM STORAGE TANK #BFWI

## PERMIT UNIT REQUIREMENTS

---

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. 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 gas-tight condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623]
3. This tank shall be in a leak-free condition. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623. [District Rule 4623]
4. True vapor pressure (TVP) of liquids stored in the tank shall not exceed 1.5 psia. [District Rule 2201]
5. Crude oil throughput shall not exceed 50 barrels per day based on a monthly average. [District Rule 2080]
6. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rule 4623]
7. Any component found to be leaking on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rule 4623]
8. 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]
9. 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]
10. 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]
11. 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]
12. 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]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

13. 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 4623]
14. 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.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-1327-194-0

**EXPIRATION DATE:** 02/28/2017

**SECTION:** 24 **TOWNSHIP:** 31S **RANGE:** 22E

**EQUIPMENT DESCRIPTION:**

ONE 1,044 BBL FIXED ROOF PETROLEUM STORAGE TANK #10172

## PERMIT UNIT REQUIREMENTS

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. 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 gas-tight condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623]
3. This tank shall be in a leak-free condition. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623. [District Rule 4623]
4. True vapor pressure (TVP) of liquids stored in the tank shall not exceed 1.5 psia. [District Rule 2201]
5. Crude oil throughput shall not exceed 50 barrels per day based on a monthly average. [District Rule 2080]
6. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rule 4623]
7. Any component found to be leaking on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rule 4623]
8. 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]
9. 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]
10. 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]
11. 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]
12. 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]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

13. 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 4623]
14. 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.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** S-1327-195-0

**EXPIRATION DATE:** 02/28/2017

**SECTION:** 24 **TOWNSHIP:** 31S **RANGE:** 22E

**EQUIPMENT DESCRIPTION:**

ONE 1,987 BBL FIXED ROOF PETROLEUM STORAGE TANK #10173

## PERMIT UNIT REQUIREMENTS

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. 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 gas-tight condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623]
3. This tank shall be in a leak-free condition. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623. [District Rule 4623]
4. True vapor pressure (TVP) of liquids stored in the tank shall not exceed 1.5 psia. [District Rule 2201]
5. Crude oil throughput shall not exceed 50 barrels per day based on a monthly average. [District Rule 2080]
6. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rule 4623]
7. Any component found to be leaking on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rule 4623]
8. 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]
9. 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]
10. 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]
11. 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]
12. 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]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

13. 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 4623]
14. 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.

**APPENDIX D**  
**Pre-Project Emission Calculations**

<b>Tank Input Data</b>	
permit number (S-xxxx-xx-xx)	<b>S-1327-188</b>
facility tank I.D.	<b>wash</b>
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	<b>1</b>
tank ROC vapor pressure (psia)	<b>1.5</b>
liquid bulk storage temperature, Tb (°F)	<b>125</b>
is this a constant-level tank? {yes, no}	<b>yes</b>
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	<b>yes</b>
breather vent pressure setting range (psi)	<b>0.06</b>
diameter of tank (feet)	<b>9</b>
capacity of tank (bbl)	<b>161</b>
conical or dome roof? {c, d}	<b>c</b>
shell height of tank (feet)	<b>16</b>
average liquid height (feet)	<b>13</b>
are the roof and shell the same color? {yes,no}	<b>yes</b>
For roof: color {1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White}	<b>4</b>
condition {1: Good, 2: Poor}	<b>1</b>
-----This row only used if shell is different color from roof-----	<b>3</b>
-----This row only used if shell is different color from roof-----	<b>1</b>

<b>Liquid Input Data</b>	<b>A</b>	<b>B</b>
maximum daily fluid throughput (bbl)		<b>50</b>
maximum annual fluid throughput (bbl)		<b>18,250</b>
maximum daily oil throughput (bbl)(used to calculate flashing loss)		<b>100</b>
maximum annual oil throughput (bbl)(used to calculate flashing loss)		<b>36,500</b>
molecular weight, Mw (lb/lb-mol)		<b>100</b>

<b>Calculated Values</b>	<b>A</b>	<b>B</b>
daily maximum ambient temperature, T <sub>ax</sub> (°F)		<b>77.65</b>
daily minimum ambient temperature, T <sub>an</sub> (°F)		<b>53.15</b>
daily total solar insolation factor, I (Btu/ft <sup>2</sup> -day)		<b>1648.9</b>
atmospheric pressure, Pa (psia)		<b>14.47</b>
water vapor pressure at daily maximum liquid surface temperature (T <sub>lx</sub> ), P <sub>vx</sub> (psia)	<b>113.0</b>	<b>1.4030</b>
water vapor pressure at daily minimum liquid surface temperature (T <sub>ln</sub> ), P <sub>vn</sub> (psia)	<b>102.2</b>	<b>1.0236</b>
water vapor pressure at average liquid surface temperature (T <sub>la</sub> ), P <sub>va</sub> (psia)	<b>107.6</b>	<b>1.1993</b>
roof outage, H <sub>ro</sub> (feet)		<b>0.0938</b>
vapor space volume, V <sub>v</sub> (cubic feet)		<b>196.82</b>
paint factor, alpha		<b>0.68</b>
vapor density, W <sub>v</sub> (lb/cubic foot)		<b>0.0246</b>
daily vapor temperature range, delta T <sub>v</sub> (degrees Rankine)		<b>49.04</b>
vapor space expansion factor, K <sub>e</sub>		<b>0.1105</b>

<b>Results</b>	<b>lb/year</b>	<b>lb/day</b>
Standing Storage Loss	<b>195</b>	<b>0.54</b>
Working Loss	<b>N/A</b>	<b>N/A</b>
Flashing Loss	<b>2,097</b>	<b>5.74</b>
<b>Total Uncontrolled Tank VOC Emissions</b>	<b>2,292</b>	<b>6.3</b>

<b>Tank Input Data</b>	
permit number (S-xxxx-xx-xx)	S-1327-189
facility tank I.D.	stock
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	1.5
liquid bulk storage temperature, Tb (°F)	125
is this a constant-level tank? {yes, no}	n
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	n
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26
capacity of tank (bbl)	1,600
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
average liquid height (feet)	8
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-----	3
-----This row only used if shell is different color from roof-----	1

<b>Liquid Input Data</b>	<b>A</b>	<b>B</b>
maximum daily fluid throughput (bbl)		50
maximum annual fluid throughput (bbl)		18,250
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, Mw (lb/lb-mol)		100

<b>Calculated Values</b>	<b>A</b>	<b>B</b>
daily maximum ambient temperature, T <sub>ax</sub> (°F)		77.65
daily minimum ambient temperature, T <sub>an</sub> (°F)		53.15
daily total solar insolation factor, I (Btu/ft <sup>2</sup> -day)		1648.9
atmospheric pressure, Pa (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T <sub>lx</sub> ), P <sub>vx</sub> (psia)	113.0	1.4030
water vapor pressure at daily minimum liquid surface temperature (T <sub>ln</sub> ), P <sub>vn</sub> (psia)	102.2	1.0236
water vapor pressure at average liquid surface temperature (T <sub>la</sub> ), P <sub>va</sub> (psia)	107.6	1.1993
roof outage, H <sub>ro</sub> (feet)		0.2708
vapor space volume, V <sub>v</sub> (cubic feet)		4391.23
paint factor, alpha		0.68
vapor density, W <sub>v</sub> (lb/cubic foot)		0.0246
daily vapor temperature range, delta T <sub>v</sub> (degrees Rankine)		49.04
vapor space expansion factor, K <sub>e</sub>		0.1105

<b>Results</b>	<b>lb/year</b>	<b>lb/day</b>
Standing Storage Loss	4,359	11.94
Working Loss	N/A	N/A
Flashing Loss	N/A	N/A
<b>Total Uncontrolled Tank VOC Emissions</b>	<b>4,359</b>	<b>11.9</b>

<b>Tank Input Data</b>	
permit number (S-xxxx-xx-xx)	S-1327-190
facility tank I.D.	stock
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	1.5
liquid bulk storage temperature, Tb (°F)	125
is this a constant-level tank? {yes, no}	n
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	n
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26
capacity of tank (bbl)	1,600
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
average liquid height (feet)	8
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-----	3
-----This row only used if shell is different color from roof-----	1

<b>Liquid Input Data</b>	<b>A</b>	<b>B</b>
maximum daily fluid throughput (bbl)		50
maximum annual fluid throughput (bbl)		18,250
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, Mw (lb/lb-mol)		100

<b>Calculated Values</b>	<b>A</b>	<b>B</b>
daily maximum ambient temperature, T <sub>ax</sub> (°F)		77.65
daily minimum ambient temperature, T <sub>an</sub> (°F)		53.15
daily total solar insulation factor, I (Btu/ft <sup>2</sup> -day)		1648.9
atmospheric pressure, Pa (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T <sub>lx</sub> ), P <sub>vx</sub> (psia)	113.0	1.4030
water vapor pressure at daily minimum liquid surface temperature (T <sub>ln</sub> ), P <sub>vn</sub> (psia)	102.2	1.0236
water vapor pressure at average liquid surface temperature (T <sub>la</sub> ), P <sub>va</sub> (psia)	107.6	1.1993
roof outage, H <sub>ro</sub> (feet)		0.2708
vapor space volume, V <sub>v</sub> (cubic feet)		4391.23
paint factor, alpha		0.68
vapor density, W <sub>v</sub> (lb/cubic foot)		0.0246
daily vapor temperature range, delta T <sub>v</sub> (degrees Rankine)		49.04
vapor space expansion factor, K <sub>e</sub>		0.1105

<b>Results</b>	<b>lb/year</b>	<b>lb/day</b>
Standing Storage Loss	4,359	11.94
Working Loss	N/A	N/A
Flashing Loss	N/A	N/A
<b>Total Uncontrolled Tank VOC Emissions</b>	<b>4,359</b>	<b>11.9</b>

<b>Tank Input Data</b>	
permit number (S-xxxx-xx-xx)	S-1327-191
facility tank I.D.	wash
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	1.5
liquid bulk storage temperature, Tb (°F)	125
is this a constant-level tank? {yes, no}	yes
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	yes
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	26
capacity of tank (bbl)	796
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
average liquid height (feet)	13
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-----	3
-----This row only used if shell is different color from roof-----	1

<b>Liquid Input Data</b>	A	B
maximum daily fluid throughput (bbl)		50
maximum annual fluid throughput (bbl)		18,250
maximum daily oil throughput (bbl)(used to calculate flashing loss)		100
maximum annual oil throughput (bbl)(used to calculate flashing loss)		36,500
molecular weight, Mw (lb/lb-mol)		100

<b>Calculated Values</b>	A	B
daily maximum ambient temperature, T <sub>ax</sub> (°F)		77.65
daily minimum ambient temperature, T <sub>an</sub> (°F)		53.15
daily total solar insolation factor, I (Btu/ft <sup>2</sup> -day)		1648.9
atmospheric pressure, P <sub>a</sub> (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T <sub>lx</sub> ), P <sub>vx</sub> (psia)	113.0	1.4030
water vapor pressure at daily minimum liquid surface temperature (T <sub>ln</sub> ), P <sub>vn</sub> (psia)	102.2	1.0236
water vapor pressure at average liquid surface temperature (T <sub>la</sub> ), P <sub>va</sub> (psia)	107.6	1.1993
roof outage, H <sub>ro</sub> (feet)		0.2708
vapor space volume, V <sub>v</sub> (cubic feet)		1736.58
paint factor, alpha		0.68
vapor density, W <sub>v</sub> (lb/cubic foot)		0.0246
daily vapor temperature range, delta T <sub>v</sub> (degrees Rankine)		49.04
vapor space expansion factor, K <sub>e</sub>		0.1105

<b>Results</b>	lb/year	lb/day
Standing Storage Loss	1,724	4.72
Working Loss	N/A	N/A
Flashing Loss	2,097	5.74
<b>Total Uncontrolled Tank VOC Emissions</b>	<b>3,821</b>	<b>10.5</b>

<b>Tank Input Data</b>	
permit number (S-xxxx-xx-xx)	<b>S-1327-194</b>
facility tank I.D.	<b>stock</b>
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	<b>1</b>
tank ROC vapor pressure (psia)	<b>1.5</b>
liquid bulk storage temperature, Tb (°F)	<b>125</b>
is this a constant-level tank? {yes, no}	<b>n</b>
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	<b>n</b>
breather vent pressure setting range (psi)	<b>0.06</b>
diameter of tank (feet)	<b>21</b>
capacity of tank (bbl)	<b>1,044</b>
conical or dome roof? {c, d}	<b>c</b>
shell height of tank (feet)	<b>16</b>
average liquid height (feet)	<b>8</b>
are the roof and shell the same color? {yes,no}	<b>yes</b>
For roof:	
color {1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White}	<b>4</b>
condition {1: Good, 2: Poor}	<b>1</b>
-----This row only used if shell is different color from roof-----	<b>3</b>
-----This row only used if shell is different color from roof-----	<b>1</b>

<b>Liquid Input Data</b>	<b>A</b>	<b>B</b>
maximum daily fluid throughput (bbl)		<b>50</b>
maximum annual fluid throughput (bbl)		<b>18,250</b>
-----This row only used if flashing losses occur in this tank-----		<b>100</b>
-----This row only used if flashing losses occur in this tank-----		<b>36,500</b>
molecular weight, Mw (lb/lb-mol)		<b>100</b>

<b>Calculated Values</b>	<b>A</b>	<b>B</b>
daily maximum ambient temperature, T <sub>ax</sub> (°F)		<b>77.65</b>
daily minimum ambient temperature, T <sub>an</sub> (°F)		<b>53.15</b>
daily total solar insulation factor, I (Btu/ft <sup>2</sup> -day)		<b>1648.9</b>
atmospheric pressure, Pa (psia)		<b>14.47</b>
water vapor pressure at daily maximum liquid surface temperature (T <sub>lx</sub> ), P <sub>vx</sub> (psia)	<b>113.0</b>	<b>1.4030</b>
water vapor pressure at daily minimum liquid surface temperature (T <sub>ln</sub> ), P <sub>vn</sub> (psia)	<b>102.2</b>	<b>1.0236</b>
water vapor pressure at average liquid surface temperature (T <sub>la</sub> ), P <sub>va</sub> (psia)	<b>107.6</b>	<b>1.1993</b>
roof outage, H <sub>ro</sub> (feet)		<b>0.2188</b>
vapor space volume, V <sub>v</sub> (cubic feet)		<b>2846.65</b>
paint factor, alpha		<b>0.68</b>
vapor density, W <sub>v</sub> (lb/cubic foot)		<b>0.0246</b>
daily vapor temperature range, delta T <sub>v</sub> (degrees Rankine)		<b>49.04</b>
vapor space expansion factor, K <sub>e</sub>		<b>0.1105</b>

<b>Results</b>	<b>lb/year</b>	<b>lb/day</b>
Standing Storage Loss	<b>2,826</b>	<b>7.74</b>
Working Loss	<b>N/A</b>	<b>N/A</b>
Flashing Loss	<b>N/A</b>	<b>N/A</b>
<b>Total Uncontrolled Tank VOC Emissions</b>	<b>2,826</b>	<b>7.7</b>

<b>Tank Input Data</b>	
permit number (S-xxxx-xx-xx)	S-1327-195
facility tank I.D.	stock
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	1.5
liquid bulk storage temperature, Tb (°F)	125
is this a constant-level tank? {yes, no}	n
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	n
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	25
capacity of tank (bbl)	1,987
conical or dome roof? {c, d}	c
shell height of tank (feet)	24
average liquid height (feet)	12
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-----	3
-----This row only used if shell is different color from roof-----	1

<b>Liquid Input Data</b>	<b>A</b>	<b>B</b>
maximum daily fluid throughput (bbl)		50
maximum annual fluid throughput (bbl)		18,250
-----This row only used if flashing losses occur in this tank-----		100
-----This row only used if flashing losses occur in this tank-----		36,500
molecular weight, Mw (lb/lb-mol)		100

<b>Calculated Values</b>	<b>A</b>	<b>B</b>
daily maximum ambient temperature, T <sub>ax</sub> (°F)		77.65
daily minimum ambient temperature, T <sub>an</sub> (°F)		53.15
daily total solar insulation factor, I (Btu/ft <sup>2</sup> -day)		1648.9
atmospheric pressure, P <sub>a</sub> (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (T <sub>lx</sub> ), P <sub>vx</sub> (psia)	113.0	1.4030
water vapor pressure at daily minimum liquid surface temperature (T <sub>ln</sub> ), P <sub>vn</sub> (psia)	102.2	1.0236
water vapor pressure at average liquid surface temperature (T <sub>la</sub> ), P <sub>va</sub> (psia)	107.6	1.1993
roof outage, H <sub>ro</sub> (feet)		0.2604
vapor space volume, V <sub>v</sub> (cubic feet)		6018.32
paint factor, alpha		0.68
vapor density, W <sub>v</sub> (lb/cubic foot)		0.0246
daily vapor temperature range, delta T <sub>v</sub> (degrees Rankine)		49.04
vapor space expansion factor, K <sub>e</sub>		0.1105

<b>Results</b>	<b>lb/year</b>	<b>lb/day</b>
Standing Storage Loss	5,975	16.37
Working Loss	N/A	N/A
Flashing Loss	N/A	N/A
<b>Total Uncontrolled Tank VOC Emissions</b>	<b>5,975</b>	<b>16.4</b>

**APPENDIX E**  
**Post-Project Emission Calculations**

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1327-XXX
facility tank I.D.	Wash
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.5
liquid bulk storage temperature, Tb (°F)	135
is this a constant-level tank? {yes, no}	yes
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	yes
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	18
capacity of tank (bbl)	500
conical or dome roof? {c, d}	c
shell height of tank (feet)	11
average liquid height (feet)	8
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)		200
maximum annual fluid throughput (bbl)		73,000
maximum daily oil throughput (bbl)(used to calculate flashing loss)		200
maximum annual oil throughput (bbl)(used to calculate flashing loss)		73,000
molecular weight, Mw (lb/lb-mol)		100

Calculated Values		
	A	B
daily maximum ambient temperature, T <sub>ax</sub> (°F)		77.65
daily minimum ambient temperature, T <sub>an</sub> (°F)		53.15
daily total solar insolation factor, I (Btu/ft <sup>2</sup> -day)		1648.9
atmospheric pressure, Pa (psia)		14.47
(psia)	118.6	1.6372
(psia)	107.8	1.2062
water vapor pressure at average liquid surface temperature (T <sub>la</sub> ), P <sub>va</sub> (psia)	113.2	1.4117
roof outage, H <sub>ro</sub> (feet)		0.1875
vapor space volume, V <sub>v</sub> (cubic feet)		811.12
paint factor, alpha		0.68
vapor density, W <sub>v</sub> (lb/cubic foot)		0.0081
daily vapor temperature range, delta T <sub>v</sub> (degrees Rankine)		49.04
vapor space expansion factor, K <sub>e</sub>		0.1139

Results		
	lb/year	lb/day
Standing Storage Loss		
Working Loss	274	0.75
Flashing Loss	N/A	N/A
<b>Total Uncontrolled Tank VOC Emissions</b>	<b>1,398</b>	<b>3.83</b>
	<b>1,672</b>	<b>4.6</b>

Summary Table	
Permit Number	S-1327-XXX
Facility Tank I.D.	Wash
Tank capacity (bbl)	500
Tank diameter (ft)	18
Tank shell height (ft)	11
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	200
Maximum Annual Fluid Throughput (bbl/year)	73,000
Maximum Daily Oil Throughput (bbl/day)	200
Maximum Annual Oil Throughput (bbl/year)	73,000
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	4.6
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	1,672

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1327-XXX
facility tank I.D.	Stock
nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}	1
tank ROC vapor pressure (psia)	0.5
liquid bulk storage temperature, Tb (°F)	135
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)	18
capacity of tank (bbl)	500
conical or dome roof? {c, d}	c
shell height of tank (feet)	11
average liquid height (feet)	6
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)			200
maximum annual fluid throughput (bbl)			73,000
-----This row only used if flashing losses occur in this tank-----			200
-----This row only used if flashing losses occur in this tank-----			73,000
molecular weight, Mw (lb/lb-mol)			100

Calculated Values		A	B
daily maximum ambient temperature, T <sub>ax</sub> (°F)			77.65
daily minimum ambient temperature, T <sub>an</sub> (°F)			53.15
daily total solar insolation factor, I (Btu/ft <sup>2</sup> -day)			1648.9
atmospheric pressure, P <sub>a</sub> (psia)			14.47
(psia)	118.6		1.6372
(psia)	107.8		1.2062
water vapor pressure at average liquid surface temperature (T <sub>la</sub> ), P <sub>va</sub> (psia)	113.2		1.4117
roof outage, H <sub>ro</sub> (feet)			0.1875
vapor space volume, V <sub>v</sub> (cubic feet)			1320.06
paint factor, alpha			0.68
vapor density, W <sub>v</sub> (lb/cubic foot)			0.0081
daily vapor temperature range, delta T <sub>v</sub> (degrees Rankine)			49.04
vapor space expansion factor, K <sub>e</sub>			0.1139

Results		
	lb/year	lb/day
Standing Storage Loss	446	1.22
Working Loss	3,650	10.00
Flashing Loss	N/A	N/A
<b>Total Uncontrolled Tank VOC Emissions</b>	<b>4,096</b>	<b>11.2</b>

Summary Table	
Permit Number	S-1327-XXX
Facility Tank I.D.	Stock
Tank capacity (bbl)	500
Tank diameter (ft)	18
Tank shell height (ft)	11
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	200
Maximum Annual Fluid Throughput (bbl/year)	73,000
Maximum Daily Oil Throughput (bbl/day)	200
Maximum Annual Oil Throughput (bbl/year)	---
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	11.2
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	4,096

**APPENDIX F**  
**BACT Guideline and Top-Down BACT Analysis**

**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 \*\***

<b>Pollutant</b>	<b>Achieved in Practice or in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
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. For background information, see Permit Specific BACT Determinations on Details Page.**

## Band Fee Tanks S-1327-202-0, '203-0 and '204-0

### Top Down BACT Analysis

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 relief valve 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. 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).
2. PV relief valve set to within 10% of maximum allowable pressure.

### Step 4 - Cost Effectiveness Analysis

The annualized capital cost is

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

AP = Equivalent Annual Capital Cost of Control Equip.

P = Present value of the control equipment, including installation cost. \$276,050 + \$42,250 = \$318,300 (see cost information in Appendix G)

i = interest rate (use 10% per policy)

n = equipment life (assume 10 years per policy)

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

$AP = (\$318,300) \times (0.16274) = \$51,800/\text{year}$

Annual Maintenance Cost = \$12,000

Utility Cost = \$35,126

For calculation of the amount of VOCs removed from each tank (emissions unit) with the vapor control system, 100% control is assumed. The VOCs removed annually are

Tons/yr =  $(1672 + 4096 + 4096 \text{ lb/yr}) / 2000 \text{ lb/ton} = 4.9 \text{ tons/yr}$

Annualized cost =  $(\$51,800 + \$12,000 + \$35,126) / \text{yr} / 4.9 \text{ tons/yr}$   
= \$20,189/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 relief valve set to within 10% of maximum allowable pressure of the tank.

## Midway Pacific Tanks S-1327-205-0, '206-0 and '207-0

### Top Down BACT Analysis

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 relief valve 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

3. 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).
4. PV relief valve set to within 10% of maximum allowable pressure.

### Step 4 - Cost Effectiveness Analysis

The annualized capital cost is

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

AP = Equivalent Annual Capital Cost of Control Equip.

P = Present value of the control equipment, including installation cost.  $\$276,050 + \$42,250 = \$318,300$  (see cost information in Appendix G)

i = interest rate (use 10% per policy)

n = equipment life (assume 10 years per policy)

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

$AP = (\$318,300) \times (0.16274) = \$51,800/\text{year}$

Annual Maintenance Cost = \$12,000

Utility Cost = \$35,126

For calculation of the amount of VOCs removed from each tank (emissions unit) with the vapor control system, 100% control is assumed. The VOCs removed annually are

Tons/yr =  $(1672 + 4096 + 4096 \text{ lb/yr}) / 2000 \text{ lb/ton} = 4.9 \text{ tons/yr}$

Annualized cost =  $(\$51,800 + \$12,000 + \$35,126) / \text{yr} / 4.9 \text{ tons/yr}$   
= \$20,189/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 relief valve set to within 10% of maximum allowable pressure of the tank.

**APPENDIX G**  
**BACT Cost Information**

# GBA-Corona, Inc.

10333 Harwin, Suite 110

Houston, Texas 77036

Telephone: 713-773-9933 / Fax: 713-773-9940

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## FACSIMILE TRANSMITTAL SHEET

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TO George Elledge	FROM Travis Turner
COMPANY: OXY	DATE: December 10, 2012
FAX NUMBER: via e-mail	TOTAL NO. OF PAGES INCLUDING COVER: 8
PHONE NUMBER:	SENDER'S REFERENCE NUMBER: CF12.1909
RE: Flare Quotation	YOUR REFERENCE NUMBER: Mt. Poso TVR and Flare

---

Dear George,

The following is in response to your request for commercial and technical information pertaining to the above referenced flare system.

In this package, we have included flare tip sizing, equipment data sheets, a radiation plot, and a pressure vs. flow curve for system. Please note that this system has been designed by using a lot of assumptions and that the design can change if the process data changes.

### Flare Tip Selection

For this application, we have selected a GBA-Corona CSF-RO-3 sonic flare for this relief system. The back pressure will not exceed 20 psig when flowing at the maximum flow rate of 0.2mmiscfd.

The GBA-Corona CSF flare uses the energy associated with pressurized gas to entrain and mix large quantities of air. The difference in this multi-arm sonic flare is in the nozzle. Unlike other multi-arm flares, the CSF flare does not lose efficiency as the size increases. The annulus design of the nozzle enhances the mixing rate of the entrained air, into the primary mixing zone of flame. This highly aerated gas and air stream burns with a clean short flame and with F-Factors ranging from 0.06 to 0.10.

Most flares spend very little time at the peak design rate. Yet, many flares are unable to handle the condition that occurs most of the time -- low flow turndown. Unlike flares which rely on large diameter curved surfaces, the GBA-Corona CSF flare ensures that the combustion takes place above the flare tip. This eliminates nearly the entire continuous flame lick on the flare. And by using properly designed wind deflectors, low flow rate flames are allowed to lift away from the flare further reducing the chance of flame lick. These two features greatly improve longevity and guard against flare tip failure.

### Radiation

We have provided a radiation plot illustrating the radiation values at the maximum flow rate of 0.2 mmscfd. Included will be an 18' self-support flare stack, including flare tip, to meet the requirements of limiting the radiation to less than 1500 btu/hr\*ft<sup>2</sup> at ground elevation.

The plot is scaled so stack heights and contours can be evaluated. If there are other radiation constraints or specifications that need to be evaluated, we will quickly incorporate them into our study. Please note that we have included 300 btu/hr\*ft<sup>2</sup> solar radiation into our contours.

### Pilot Ignition

To ignite the flare, we have offered Corona's CHT electronic pilots. This pilot is fully automatic and self-monitoring. This system has auto re-light capabilities (standard) and is self-monitoring. The CHT system uses flame ionization for pilot monitoring which ensures long life and reliability of pilot indication. This system does not require utility air and eliminates the inherent problems associated with thermocouples and flame front generators. Our package includes 2 CHT pilots and 250' of standard ignition cable per pilot. Electronics will be housed in a NEMA 4X, general purpose, stainless steel enclosure.

### Air Lock Seal

A continuous supply of purge gas is required to prevent air from migrating into the waste gas header. Many studies have proved that the air will typically migrate down along the inside wall of the flare, where the gas is moving the slowest. It has also been shown, that for the same purge gas velocities, it is much easier for air to enter a large diameter tip than a small diameter tip. Finally, it has also been shown that bends within the header further inhibit the ability of the air to penetrate in the stack.

We have offered an Air Lock purge reduction seal. This seal is an inverted cone (baffle) that forms a physical obstruction for the air that typically migrates in along the flare tip body wall. When the air encounters the seal, the air is diverted toward the center of the flare (where the purge gas is moving the fastest) and toward the exit of the flare.

Quotation and Scope of Supply

**Flare Tip**

- 1.0 One (1) DSF-R.O-3 flare tip complete with two CHT pilot/ignitor assemblies, manifolds and wind deflectors.

**Pilot Control Panel**

- 2.0 One (1) CHT automatic, electronic pilot control panel. Panel to control two pilots. Electrical components to be housed in a NEMA 4X, general purpose enclosure. Also included is 250' of ignition cable per pilot.
- 3.0 One (1) 18' self-support flare stack. This will also include calculations and drawing that will specifically meet the required criteria for the project site and location.

Price EXW – Houston, TX

\$42,250.00.

**TVR QUOTE**

## Com-Pac Systems, Inc. Proposal 12-2221R0

December 26, 2012

Vintage Production  
 9000 Ming Ave,  
 Suite 300  
 Bakersfield, CA. 93311  
 Attention: Mr. George Elledge

Reference: Mount Poso South Unit TVR Compressor Budgetary Proposal

Sir,

In response to inquiry regarding the above referenced project Com-Pac Systems, Inc. is pleased to offer this budgetary proposal for your consideration. This proposal is for budgetary purposes only and does not take into account any design conditions and/or specifications, other than those already supplied, and is subject to any exceptions and clarifications contained herein.

### 1.0 Scope of Supply

Provide engineering, labor and material to supply one (1) fully packaged TVR compressor packages.

The package is complete with two (2) x 100% self supporting compressors, electric motor drivers, suction and discharge scrubbers complete with condensate removal system, air cooled finned tubed heat exchanger complete with discharge gas and compressor jacket water cooling sections each sized for both compressor running, compressor jacket water cooling systems complete with jacket water circulation pumps and surge tank, compressor lube oil system complete with an electric motor driven lubricator pump and force feed divider block distribution system, process piping including recycle capacity control loop with manual by-pass, utility piping, instrumentation and PLC based compressor control panel all mounted on a single fit for purpose steel skid.

The package is designed to meet the following conditions and includes the following list of materials

### 2.0 Design Conditions

PARAMETER		DESIGN
Flow Rate @ Skid Edge	MSCFD	100
Compressor Delivered Capacity (Each Compressor)	MSCFD	105
Suction Temperature (@ Compressor Flange)	<sup>o</sup> F	90
Suction Pressure @ Compressor Flange)	PSIG	0.0
Discharge Temperature (@ Cooler Discharge)	<sup>o</sup> F	130
Discharge Pressure @ Compressor Flange)	PSIG	45

### 3.0 Gas Compressor

Two (2) Ro Flo model 5CC, sliding vane, positive displacement compressors. The compressors are belt driven to 1850 rpm and are equipped as per the following:

- Double bellows seals complete with pressurized oil seal system for zero shaft seal emissions
- Jacket water cooling system including:
  - One (1) air cooled finned tubed jacket water cooler, sized for both compressor running
  - Two (2) electric motor driven coolant pumps, one for each compressor
  - Two (2) thermostatic type temperature control valves, one for each compressor
  - Two (2) jacket water no-flow switches, one for each compressor

## Com-Pac Systems, Inc. Proposal 12-2221R0

- Dedicated force feed cylinder lubrication system including:
  - Two (2) electric motor driven lubricator pumps, one for each compressor
  - Two (2) pressurized divider block distribution systems, one for each compressor
  - Two (2) lube oil no-flow switches, one for each compressor
- One (1) 30 gallon lube oil day tank, common to both compressors
- Torsionally resilient coupling /w built to suit coupling guard

### **3.1 Compressor Performance**

See attached

### **4.0 Compressor Driver**

Two (2) Baldor model ECP416T, or equal, premium efficiency, severe duty, induction electric motor as per the following:

- 20 HP
- 3600 RPM
- TEFC
- 460/3/60 VAC
- 1.15 service factor
- Lubricated bearings
- Rotatable, oversized conduit box w/ stainless steel hardware
- Rated for NEC Class 1 Division 2 Groups C&D hazardous area

### **4.1 Compressor Driver Performance**

See attached

### **5.0 Gas Cooler**

One (1) ACE model C32M-4 or equal, vertical finned tube air cooled heat exchanger as per the following:

- One (1) after gas cooling section, sized for both compressors running, as per the following
  - SA-516/70 carbon steel headers
  - 1/16" corrosion allowance
  - SA-249 304 stainless steel welded tubes
  - Manual louver
  - 5005 marine grade aluminum fins
  - ASME coded stamped w/ National Board registration
- One (1) compressor lube jacket water cooling section, sized for both compressors running as per the following
  - Carbon steel headers
  - SA-214 carbon steel welded tubes
  - 5005 marine grade aluminum fins
- Mounted electric motor driven direct drive fan drive assembly
- Cooler structure as per the following
  - Seal welded
  - White metal blasted
  - Metalized headers and structure

### **5.1 Cooler Performance**

## Com-Pac Systems, Inc. Proposal 12-2221R0

### 6.0 Scrubbers

One (1) 10-3/4" OD x 48" seam/seam API 11P Class "C" vertical suction scrubber, sized for both compressors running, as per the following:

- Carbon steel per SA106-B, SA-234 WPB, SA-105
- Designed, fabricated, tested, inspected and stamped to ASME Sec VIII Div II
- 1/16" corrosion allowance
- 100% x-ray per ASME Sec VIII Div II
- Post weld heat treated
- Internally plastic coated
- Stainless steel mesh pad type mist extractor
- One (1) bridle mounted level control assembly as per the following:
  - Level transmitter guided wave type (condensate pump on/off)
  - Level indicator
- One (1) bridle mounted level shutdown assembly as per the following:
  - Level switch high/high (shutdown)
  - Level switch low/low (alarm)
- One (1) rotary vane electric motor driven condensate pumps sized for 10 gpm @ 60 psig discharge

One (1) 8-5/8" OD x 48" seam/seam API 11P Class "C" vertical discharge scrubber, sized for both compressors running, as per the following:

- Carbon steel per SA106-B, SA-234 WPB, SA-105
- Designed, fabricated, tested, inspected and stamped to ASME Sec VIII Div II
- 1/16" corrosion allowance
- 100% x-ray per ASME Sec VIII Div II
- Post weld heat treated
- Internally plastic coated
- Stainless steel mesh pad type mist extractor
- One (1) bridle mounted level assembly as per the following:
  - Level transmitter guided wave type
  - Level indicator
- One (1) bridle mounted level shutdown assembly as per the following:
  - Level switch high/high (shutdown)
- One (1) Fisher D2 pneumatic dump valve

*Note 1 – All pressure vessel sizes are subject to final engineering*

### 7.0 Process Piping

One (1) lot of gas process piping, sized for both compressors running, from skid edge suction connection through the compressor package to final skid edge discharge connection, including relief valve header, as per the following:

- Carbon steel per ASTM A106-B, ASTM WPB-234 ANSI A-105
- Designed, fabricated, inspected and tested to ANSI B31.3 severe cyclic
- 1/16" corrosion allowance
- 20% x-ray examination per ANSI B31.3 severe cyclic
- Flanged process connections
- Flanged and/or threaded instrumentation connections
- Process piping pipe supports are pipe straps, no u-bolts, welded to main members

## Com-Pac Systems, Inc. Proposal 12-2221R0

### **8.0 Process Valves**

One (1) lot of process valves from edge suction block valve through the compressor package to skid edge final discharge block. All process valves are carbon steel bodies, SS trim and firesafe. The following valves are included:

- One (1) manual full port suction block valve located at skid edge
- One (1) conventional type thermal relief valve on suction scrubber complete with full port inlet/outlet block valves, bleed ring and bleed valve.
- Two (2) manual inlet double block and bleed valve sets. One each located between suction scrubber and each compressor inlet
- One (1) conventional type relief valve on each compressor discharge complete with full port inlet/outlet block valves, bleed ring and bleed valve.
- One (1) automatic recycle capacity control valve, sized for 100% of flow, including I/P, positioner and manual bypass loop to maintain suction pressure
- Two (2) discharge check valve double door spring assisted closure type. One located on the discharge of each compressor
- Two (2) manual outlet double block and bleed valve sets. One each located between compressor discharge check valve and discharge scrubber
- One (1) conventional type full flow relief valve on discharge scrubber complete with full port inlet/outlet block valves, bleed ring and bleed valve.
- One (1) common discharge check valve double door spring assisted closure type.
- One (1) manual full port discharge block valve located at skid edge

### **9.0 Utility Piping, Valves and Tubing**

One (1) lot utility piping, valves and tubing as per the following:

- Threaded and/or socket weld stainless steel lube oil piping per SA-312 304, SA-182 304
- Threaded and/or socket weld carbon steel jacket water piping per SA106-B, SA-105
- Threaded and/or socket weld carbon steel instrument air piping per SA106-B, SA-105
- SA-249 304SS welded instrument tubing
- 304SS Parker, or equal, tubing fittings
- Galvanized u-bolts
- Valves are threaded, carbon steel body carbon steel trim

### **10.0 Instrumentation and Electrical**

One (1) lot skid instrumentation and electrical as per the following:

- Instrumentation/end devices are designed for installation in a Class I Division 2 Group C&D hazardous area classification
- All wiring in ridged galvanized conduit with type "G" galvanized fittings
- Preliminary instrument manufactures as per the following:
  - Pressure Indicating Transmitter – Rosemount 3051S
  - Temperature Indicating Transmitter – Rosemount 644
  - Temperature RTD's – Rosemount 0068
  - Level Bridle Assembly – Com-Pac Systems standard
  - Level Transmitter Guided Wave – Rosemount 3300
  - Level Switch Ultrasonic – Rosemount 2120
  - Level Indicator – Penberthy
  - Vibration Transmitter – Metrix ST5491E

## Com-Pac Systems, Inc. Proposal 12-2221R0

### **11.0 Control Panel**

One (1) compressor control panel is provided mounted and wired on the compressor skid. The control panel and equipment are rated for National Electrical Code area classification of Class I Division II, Groups C & D and is equipped as per the following:

- Allen Bradley ControlLogix programmable logic controller
- Allen Bradley 10000CP HMI
- Ethernet connection
- Door mounted ESD, re-set switch and power on light
- NEMA 4X stainless steel enclosure
- Package control instrumentation for at a minimum
  - Package suction pressure
  - Package suction temperature
  - Suction scrubber level control
  - Suction scrubber low/low level
  - Suction scrubber high/high level
  - Compressor "A" discharge temperature
  - Compressor "A" discharge pressure
  - Compressor "A" high vibration
  - Compressor "A" lube oil no flow
  - Compressor "A" lubricator low level
  - Compressor "A" jacket water high temperature
  - Compressor "A" jacket water no flow
  - Compressor "B" discharge temperature
  - Compressor "B" discharge pressure
  - Compressor "B" high vibration
  - Compressor "B" lube oil no flow
  - Compressor "B" lubricator low level
  - Compressor "B" jacket water high temperature
  - Compressor "B" jacket water no flow
  - Discharge scrubber level control
  - Discharge scrubber high/high level
  - Package discharge pressure
  - Cooler high vibration

### **12.0 Skid**

One (1) structural steel skid, with major equipment mounted on main structural members as per the following:

- Com-Pac Systems standard single-piece skid design
- 3/8" ASME SA-36 smooth bottom plate, seal-welded around skid perimeter
- Two inch (2") environmental containment barrier around perimeter of skid
- Two (2) drain connections located on opposite corners
- Two (2) draw bars, one lactated at each end, suitable for use as lifting lugs.
- Anchor bolt holes drilled w/ jack bolt nuts welded to skid perimeter
- Com-Pac Systems standard skid welding procedures apply
- Skid is not subject to NDE

# Com-Pac Systems, Inc.

(432) 332-4515  
Fax (432) 332-0121  
2412 S. Market St.  
Odessa, Texas 79766

## Com-Pac Systems, Inc. Proposal 12-2221R0

### **13.0 Paint**

Package to be painted per Com-Pac Systems standard two part paint system suitable for onshore service and includes the following:

- Surface Preparation – Steel surfaces blasted to SSPC-SP6
- Primer- PPG Low VOC Quick Dry MultiPrime applied to a dry film thickness of 2-4 mils
- Top Coat- PPG Type 35 High Gloss Enamel applied to a dry film thickness of 1.5-2 mils.
- Top Coat Color – At customers discretion

### **14.0 Miscellaneous Inclusions/Exclusions to Scope Of Supply**

The following items are included in our Scope of Supply:

- Mechanical run test of completed package, on air, at Com-Pac Systems works
- Continuity and loop check of controls at Com-Pac Systems works
- Stainless steel tagging
- Preparation for domestic shipping only
- One (1) technician for one (1) week start-up and commissioning assistance
- Three (3) computer discs copies of Com-Pac Systems standard Installation, Operations and Maintenance Manual.

The following items are not included in our Scope of Supply

- Freight to site
- Unloading at site
- Interconnecting wiring
- Interconnecting piping
- Motor starters, switch gear, variable frequency drives and/or power junction boxes
- Heat tracing and/or insulation of any type, other than previously mentioned
- Off-skid and/or interconnecting piping
- Fire/gas detection or suppression equipment
- Unit enclosure HVAC system and/or lifting crane.
- Utility gas piping, filters or silencers, other than specifically mentioned
- Tools, other than previously described
- Alignment or leveling devices, other than specifically mentioned
- Design and supply of foundations, support structures, ladders, platforms, etc.
- Site performance test
- Personal costs of purchaser's/client's and/or third party inspectors.
- Installation costs
- Commissioning and operating spare parts
- Storage or preservation costs
- Spreader bars, shackles or lifting equipment of any kind
- Cable tray
- Tubing tray
- Acoustical study
- Skid dynamic study
- Finite element analysis
- Site specific preventative and/or predictive maintenance plans

# Com-Pac Systems, Inc.

(432) 332-4515  
Fax (432) 332-0121  
2412 S. Market St.  
Odessa, Texas 79766

## Com-Pac Systems, Inc. Proposal 12-2221R0

### 15.0 Delivery

Shipment: 22-26 weeks ARO.

*Note 2 – Estimated delivery only. Actual delivery cannot be confirmed until time of order acceptance, receipt of down payment and return receipt of approved drawings*

### 16.0 Price Summary

Price Per Package ..... \$276,050.00  
(US Dollar)

- Payment in United States dollars
- Sales taxes are not included
- Ex-works Com-Pac Systems facility
- Price validity sixty (60) days from the date of proposal

### 17.0 Terms

We propose that Buyer will pay Seller for the work as per the following progress payment schedule and terms with no holdbacks or retention of funds:

- 30% down with order placement
- 20% upon drawing submittal (drawings submittal will be P&ID and General Arrangement)
- 20% upon cooler manufacturer's notification of readiness to ship
- 20% upon compressor manufacturer's notification of readiness to ship
- 10% upon notification of readiness to ship completed package

Thank you for allowing us this opportunity. We hope the products and services provided herein meet your expectations, and will subsequently lead to an order in our favor.

If there are any questions or clarifications regarding this offer please do not hesitate to call.

Respectfully,

*Jack Motley*

Jack Motley  
Com-Pac Systems, Inc.  
2412 Market  
Odessa, Texas 79766  
Phone – (432) 332-4515  
Fax – (432) 332-0121  
Cell – (432) 208-9083  
E-Mail – [jackmotley@compressorpackaging.com](mailto:jackmotley@compressorpackaging.com)

*Rick Mobley*

Rick Mobley  
Com-Pac Systems, Inc.  
2412 Market  
Odessa, Texas 79766  
Phone – (432) 332-4515  
Fax – (432) 332-0121  
Cell – (432) 664-2033  
E-Mail – [rickmobley@compressorpackaging.com](mailto:rickmobley@compressorpackaging.com)

**APPENDIX H**  
**Health Risk Assessment**

# San Joaquin Valley Air Pollution Control District

## Risk Management Review

To: William Jones, David Torii – Permit Services  
 From: Ester Davila, SAQS – Technical Services  
 Date: July 3, 2013  
 Facility Name: Vintage Production California LLC  
 Location: Heavy Oil Western  
 Application #(s): S-1327-202-0 thru 207-0  
 Project #: S-1132362

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### A. RMR SUMMARY

RMR Summary								
Categories	Tank Unit 202	Tank Unit 203	Tank Unit 204	Tank Unit 205	Tank Unit 206	Tank Unit 207	Project Totals	Facility Totals
Prioritization Score	0.0 <sup>1</sup>	0.0	>1					
Acute Hazard Index	2.32E-3	2.32E-3	2.32E-3	6.2E-4	6.2E-4	6.2E-4	8.82E-3	0.011
Chronic Hazard Index	7.9E-5	7.9E-5	7.9E-5	5.7E-6	5.7E-6	5.7E-6	2.54E-4	0.0008
Individual Cancer Risk (10 <sup>-6</sup> )	0.15	0.15	0.15	0.01	0.01	0.01	0.48	0.49
T-BACT Required?	No	No	No	No	No	No	No	
Special Permit Conditions?	No	No	No	No	No	No	No	

<sup>1</sup>Facility total prioritization score was greater than 1.0.

### Proposed Permit Conditions

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

Units #: 202-0 thru 207-0

No special conditions required.

## B. RMR REPORT

### I. Project Description

Technical Services received a request on June 25, 2013, to perform a Risk Management Review for the proposed replacement of six existing tanks (units 188-1, 189-1, 190-0, 191-1, 194-1, & 195-1) with six new crude oil storage tanks.

### II. Analysis

Technical Services performed a prioritization using the District's HEARTs database. Emissions were calculated using fugitive emissions from oil field equipment as worst-case and were input into the HARP model. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905-1, March 2, 2001), risks from the proposed unit's toxic emissions were prioritized using the procedure in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEARTs database. The prioritization score for these proposed units was less than 1.0 (see RMR Summary Table); however the total facility prioritization was greater than 1.0. Therefore, further analysis was required and performed. AERMOD was used, with area source parameters outlined below, and the 5-year concatenated meteorological data from 2004/2008 for Fellows to determine maximum dispersion factors at the nearest residential and business receptors. These dispersion factors were input into the HARP model to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

*The following parameters were used for the review:*

<b>Analysis Parameters Units 202-0 thru 207-0</b>					
<b>Source Type</b>		Areas	<b>Residential Receptor (m)</b>		1609
<b>Release Height (m)</b>		0	<b>Business Receptor (m)</b>		1609
<b>Length of Sides (m)</b>		46	<b>Max Hours per Year</b>		8760
<i>Unit</i>	<i>VOC (lb/hr)</i>	<i>VOC (lb/yr)</i>	<i>Unit</i>	<i>VOC (lb/yr)</i>	<i>VOC (lb/yr)</i>
<b>202</b>	0.2	1,672	<b>205</b>	0.2	1,672
<b>203</b>	0.5	4,096	<b>206</b>	0.5	4,096
<b>204</b>	0.5	4,096	<b>207</b>	0.6	4,960

### III. Conclusion

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

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

**Attachments:**

- A. RMR Request & Additional Information
- B. Toxic Emissions Summary
- C. Prioritization Score
- D. HARP Report
- E. Facility Summary

**APPENDIX I**  
**Draft ATCs**

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** S-1327-202-0

**LEGAL OWNER OR OPERATOR:** VINTAGE PRODUCTION CALIFORNIA LLC  
**MAILING ADDRESS:** 9600 MING AVE, SUITE 300  
BAKERSFIELD, CA 93311

**LOCATION:** HEAVY OIL WESTERN, KERN COUNTY  
CA

**SECTION:** 24 **TOWNSHIP:** 31S **RANGE:** 22E

**EQUIPMENT DESCRIPTION:**  
500 BBL FIXED ROOF CRUDE OIL WASH TANK WITH PV VALVE (BAND FEE LEASE)

**CONDITIONS**

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. 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] Federally Enforceable Through Title V Permit
4. Tank shall operate at a constant level. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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 and 4623] Federally Enforceable Through Title V Permit
6. VOC emission rate from the tank shall not exceed 4.6 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director VAPCO

**DAVID WARNER, Director of Permit Services**

S-1327-202-0 Jun 25 2013 1:01PM -- TORID : Joint Inspection NOT Required

7. 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 Rules 2201 and 4623] Federally Enforceable Through Title V Permit
8. 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 Rules 2201 and 4623] Federally Enforceable Through Title V Permit
9. 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 Rules 2201 and 4623] Federally Enforceable Through Title V Permit
10. 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 Rules 2201 and 4623] Federally Enforceable Through Title V Permit
11. The permittee 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] Federally Enforceable Through Title V Permit
12. Permittee shall maintain accurate monthly records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
13. 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 and 4623] Federally Enforceable Through Title V Permit
14. PTO S-1327-191 shall be canceled prior to or concurrently with this ATC. [District Rule 2201]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** S-1327-203-0

**LEGAL OWNER OR OPERATOR:** VINTAGE PRODUCTION CALIFORNIA LLC  
**MAILING ADDRESS:** 9600 MING AVE, SUITE 300  
BAKERSFIELD, CA 93311

**LOCATION:** HEAVY OIL WESTERN, KERN COUNTY  
CA

**SECTION:** 24 **TOWNSHIP:** 31S **RANGE:** 22E

**EQUIPMENT DESCRIPTION:**  
500 BBL FIXED ROOF CRUDE OIL TANK WITH PV VALVE (BAND FEE LEASE)

**CONDITIONS**

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. 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] Federally Enforceable Through Title V Permit
4. Crude oil throughput shall not exceed 200 barrels per day based on a monthly average. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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 and 4623] Federally Enforceable Through Title V Permit
6. VOC emission rate from the tank shall not exceed 11.2 lb/day. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director APCO

**DAVID WARNER**, Director of Permit Services

S-1327-203-0 : Jun 25 2013 1:01PM -- TORID : Joint Inspection NOT Required

7. 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 Rules 2201 and 4623] Federally Enforceable Through Title V Permit
8. 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 Rules 2201 and 4623] Federally Enforceable Through Title V Permit
9. 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 Rules 2201 and 4623] Federally Enforceable Through Title V Permit
10. 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 Rules 2201 and 4623] Federally Enforceable Through Title V Permit
11. Permittee shall maintain accurate 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] Federally Enforceable Through Title V Permit
12. 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 and 4623] Federally Enforceable Through Title V Permit
13. PTO S-1327-189 shall be canceled prior to or concurrently with this ATC. [District Rule 2201]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** S-1327-204-0

**LEGAL OWNER OR OPERATOR:** VINTAGE PRODUCTION CALIFORNIA LLC  
**MAILING ADDRESS:** 9600 MING AVE, SUITE 300  
BAKERSFIELD, CA 93311

**LOCATION:** HEAVY OIL WESTERN, KERN COUNTY  
CA

**SECTION:** 24 **TOWNSHIP:** 31S **RANGE:** 22E

**EQUIPMENT DESCRIPTION:**  
500 BBL FIXED ROOF CRUDE OIL TANK WITH PV VALVE (BAND FEE LEASE)

**CONDITIONS**

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. 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] Federally Enforceable Through Title V Permit
4. Crude oil throughput shall not exceed 200 barrels per day based on a monthly average. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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 and 4623] Federally Enforceable Through Title V Permit
6. VOC emission rate from the tank shall not exceed 11.2 lb/day. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director APCO

**DAVID WARNER**, Director of Permit Services

S-1327-204-0 - Jun 25 2013 1:01PM -- TORID : Joint Inspection NOT Required

7. 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 Rules 2201 and 4623] Federally Enforceable Through Title V Permit
8. 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 Rules 2201 and 4623] Federally Enforceable Through Title V Permit
9. 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 Rules 2201 and 4623] Federally Enforceable Through Title V Permit
10. 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 Rules 2201 and 4623] Federally Enforceable Through Title V Permit
11. Permittee shall maintain accurate 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] Federally Enforceable Through Title V Permit
12. 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 and 4623] Federally Enforceable Through Title V Permit
13. PTO S-1327-190 shall be canceled prior to or concurrently with this ATC. [District Rule 2201]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** S-1327-205-0

**LEGAL OWNER OR OPERATOR:** VINTAGE PRODUCTION CALIFORNIA LLC  
**MAILING ADDRESS:** 9600 MING AVE, SUITE 300  
BAKERSFIELD, CA 93311

**LOCATION:** HEAVY OIL WESTERN, KERN COUNTY  
CA

**SECTION:** 24 **TOWNSHIP:** 31S **RANGE:** 22E

**EQUIPMENT DESCRIPTION:**  
500 BBL FIXED ROOF CRUDE OIL WASH TANK WITH PV VALVE (TANK MIDWAY PACIFIC LEASE)

**CONDITIONS**

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. 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] Federally Enforceable Through Title V Permit
4. Tank shall operate at a constant level. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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 and 4623] Federally Enforceable Through Title V Permit
6. VOC emission rate from the tank shall not exceed 4.6 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

**DAVID WARNER, Director of Permit Services**

S-1327-205-0 : Jun 25 2013 1:01PM -- TORID : Joint Inspection NOT Required

7. 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 Rules 2201 and 4623] Federally Enforceable Through Title V Permit
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12. Permittee shall maintain accurate monthly records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
13. 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 and 4623] Federally Enforceable Through Title V Permit
14. PTO S-1327-191 shall be canceled prior to or concurrently with this ATC. [District Rule 2201]
15. PTO S-1327-188 shall be canceled prior to or concurrently with this ATC. [District Rule 2201]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** S-1327-206-0

**LEGAL OWNER OR OPERATOR:** VINTAGE PRODUCTION CALIFORNIA LLC  
**MAILING ADDRESS:** 9600 MING AVE, SUITE 300  
BAKERSFIELD, CA 93311

**LOCATION:** HEAVY OIL WESTERN, KERN COUNTY  
CA

**SECTION:** 24 **TOWNSHIP:** 31S **RANGE:** 22E

**EQUIPMENT DESCRIPTION:**  
500 BBL FIXED ROOF CRUDE OIL TANK WITH PV VALVE (MIDWAY PACIFIC LEASE)

**CONDITIONS**

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. 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] Federally Enforceable Through Title V Permit
4. Crude oil throughput shall not exceed 200 barrels per day based on a monthly average. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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 and 4623] Federally Enforceable Through Title V Permit
6. VOC emission rate from the tank shall not exceed 11.2 lb/day. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director APCO

**DAVID WARNER**, Director of Permit Services

S-1327-206-0 - Jun 25 2013 1:01PM -- TORID : Joint Inspection NOT Required

7. 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 Rules 2201 and 4623] Federally Enforceable Through Title V Permit
8. 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 Rules 2201 and 4623] Federally Enforceable Through Title V Permit
9. 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 Rules 2201 and 4623] Federally Enforceable Through Title V Permit
10. 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 Rules 2201 and 4623] Federally Enforceable Through Title V Permit
11. Permittee shall maintain accurate 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] Federally Enforceable Through Title V Permit
12. 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 and 4623] Federally Enforceable Through Title V Permit
13. PTO S-1327-194 shall be canceled prior to or concurrently with this ATC. [District Rule 2201]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

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