



San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT



HEALTHY AIR LIVING™

MAR 19 2013

Mr. David Campbell
San Joaquin Refining Company
PO Box 5576
Bakersfield, CA 93388

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # S-36
Project # S-1130003**

Dear Mr. Campbell:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. The applicant is requesting that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The applicant proposes to install one 45,000 bbl distillate oil internal floating roof storage tank.

After addressing any EPA comments made during the 45-day comment period, the Authority to Construct will be issued to the facility with a Certificate of Conformity. Prior to operating with modifications authorized by the Authority 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. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

Enclosures

c: Jesse A. Garcia, Permit Services

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
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Southern Region
34946 Flyover Court
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MAR 19 2013

Gerardo C. Rios, Chief
Permits Office
Air Division
U.S. EPA - Region IX
75 Hawthorne St.
San Francisco, CA 94105

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # S-36
Project # S-1130003**

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authority to Construct for San Joaquin Refining Company at the corner of Standard and Shell Streets in Bakersfield, which has been issued a Title V permit. San Joaquin Refining Company is requesting that a Certificate of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. The applicant proposes to install one 45,000 bbl distillate oil internal floating roof storage tank.

Enclosed is the engineering evaluation of this application with a copy of the current Title V permit and proposed Authority to Construct # S-36-116-0 with Certificate of Conformity. After demonstrating compliance with the Authority to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
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c: Jesse A. Garcia, Permit Services

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MAR 19 2013

Mike Tollstrup, Chief
Project Assessment Branch
Air Resources Board
P O Box 2815
Sacramento, CA 95812-2815

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # S-36
Project # S-1130003**

Dear Mr. Tollstrup:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. The applicant is requesting that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The applicant proposes to install one 45,000 bbl distillate oil internal floating roof storage tank.

Enclosed is the engineering evaluation of this application with a copy of the current Title V permit and proposed Authority to Construct # S-36-116-0 with Certificate of Conformity. After demonstrating compliance with the Authority to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 30-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Jim Swaney, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

Enclosures

c: Jesse A. Garcia, Permit Services

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Executive Director/Air Pollution Control Officer

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**NOTICE OF PRELIMINARY DECISION
FOR THE ISSUANCE OF AUTHORITY TO CONSTRUCT AND
THE PROPOSED SIGNIFICANT MODIFICATION OF FEDERALLY
MANDATED OPERATING PERMIT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Air Pollution Control District solicits public comment on the proposed significant modification of San Joaquin Refining Company for its heavy crude oil refinery at the corner of Standard and Shell Streets in Bakersfield, California. The applicant proposes to install one 45,000 bbl distillate oil internal floating roof storage tank.

The District's analysis of the legal and factual basis for this proposed action, project #S-1130003, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and at any District office. The modifications in this project result in an increase in VOC emissions which exceed the Major Modification threshold. This will be the public's only opportunity to comment on the specific conditions of the modification. If requested, the District will hold a public hearing regarding issuance of this modification. For additional information, please contact the District at (559) 230-5900. Written comments on the proposed initial permit must be submitted by April 22, 2013 to DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 1990 E. GETTYSBURG AVE, FRESNO, CA 93726-0244.

Authority to Construct Application Review

New Internal Floating Roof Tank

Facility Name: San Joaquin Refining Company
Mailing Address: PO Box 5576
Bakersfield, CA 93388
Contact Person: David Campbell
Telephone: (661) 327-8248
Application #(s): S-36-116-0
Project #: S-1130003
Deemed Complete: February 5, 2013

Date: February 25, 2013
Engineer: Jesse A. Garcia
Lead Engineer: Joven Refuerzo

I. Proposal

San Joaquin Refining Company is applying for an Authority to Construct (ATC) permit for the installation of one internal floating roof 45,000 bbl distillate oil storage tank. The new tank will replace an existing tank, PTO S-36-104-3. The current PTO for the tank is included in Attachment A.

Increases in VOC due to the installation of the new tank will partially be mitigated through the cancellation of the tank listed on permit S-36-104 and classified as a Stationary Source Project. Therefore, the following condition will be included on the new tank ATC:

- Permit to Operate S-36-104-3 shall be surrendered to the District and the associated equipment shall be removed or rendered inoperable not later than the date of initial operation of this modified emissions unit. [District Rule 2201]

San Joaquin Refining Company has received their Title V Permit. This modification can be classified as a Title V significant modification pursuant to Rule 2520, Section 3.20, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. San Joaquin Refining Company must apply to administratively amend their Title V Operating Permit to include the requirements of the ATC issued with this project.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410 Prevention of Significant Deterioration (12/26/12)
Rule 2520 Federally Mandated Operating Permits (6/21/01)

Rule 4001 New Source Performance Standards, subpart Kb (Amended 4/14/99) is not applicable. This subpart does not apply to vessels with a design capacity $\leq 151 \text{ m}^3$ ($\leq 39,890$ gallons) storing a liquid with a TVP less than 3.5 kPa (0.5 psi). The capacity of the tank is $> 39,890$ gallons, and it stores petroleum with a TVP 0.5 psi; therefore, this subpart does not apply to the tank in this project.

Rule 4101 Visible Emissions (04/20/05)

Rule 4102 Nuisance (12/17/92)

Rule 4623 Storage of Organic Liquids (05/19/05)

CH&SC 42301.6 School Notice

Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)

California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The facility is located at the corner of Standard and Shell Streets in Bakersfield. The facility is not located within 1,000 feet of the outer boundary of any K-12 school. Therefore, pursuant to CH&SC 42301.6, California Health and Safety Code (School Notice), public notification is not required.

IV. Process Description

San Joaquin Refining Company is a heavy crude oil refinery that produces various products including asphalt and ultra-low sulfur diesel. The proposed tank will store distillate oil.

V. Equipment Listing

Pre-Project Equipment Description:

S-36-104-3: 37,000 BBL DISTILLATE OIL TANK 37001 WITH NATURAL GAS BLANKET AND VAPOR COLLECTION SYSTEM CONNECTED TO PERMIT UNIT S-36-51

Proposed Equipment Description:

S-36-116-0: 45,000 BBL WELDED INTERNAL FLOATING ROOF DISTILLATE OIL TANK #45002 WITH MECHANICAL SHOE PRIMARY SEAL AND SECONDARY WIPER SEAL

VI. Emission Control Technology Evaluation

Emissions from the internal floating roof tank will be reduced as the tank is equipped with a mechanical shoe primary seal and rim-mounted secondary seal that minimize

VOC emissions due to evaporation by reducing the air space above the surface of the stored organic liquid. This configuration will result in at least 95% control of emissions from the tanks.

VII. Emissions Calculations

A. Assumptions

- Facility will operate 24 hours per day, 7 days per week, and 52 weeks per year.
- VOC is the only pollutant emitted from this operation
- Tank factors and characteristics are provided by applicant (see Tanks 4.0 summary in Attachment B and C for tank characteristics detail)
- All hydrocarbons in the oil stream are VOCs (VOC content = 100%)
- Maximum throughput is limited to 12,000 bbl/day
- True Vapor Pressure of liquid < 0.5 psi
- Per Project S-970679, the control efficiency of control equipment the existing tank is connected to is 95%.

B. Emission Factors

Tanks 4.0d will be used to calculate the emissions from the existing tank and new tank.

C. Calculations

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

S-36-104-3

Tanks 4.0 has been utilized to calculate potential emissions using 12,000 bbl/day as the throughput. See Attachment B for summary of Tanks 4.0 run.

The annual emissions are summarized in the table below:

Annual PE ₁ (lb-VOC/yr)
3,525 x (1 - 95%) = 176

S-36-116-0

Since this is a new emissions unit, the PE₁ = 0

2. Post Project Potential to Emit, (PE₂)

S-36-104-3

Since this unit is being cancelled, PE₂ = 0

S-36-116-0

Tanks 4.0 has been utilized to calculate potential emissions using 12,000 bbl/day as the throughput. See Attachment C for summary of Tanks 4.0 run.

The daily and annual emissions are summarized in the table below:

Daily PE2 (lb-VOC/day)	Annual PE2 (lb-VOC/yr)
1.7 ¹	625

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

Pursuant to Section 4.9 of District Rule 2201, the pre-project stationary source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the stationary source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site

SSPE1 emissions are taken from the SSPE2 from Project S-1104824 and summarized in the table below:

Pre-Project Stationary Source Potential to Emit [SSPE1] (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
Pre-Project SSPE (SSPE1)	153,750	190,861	64,799	662,729	125,369
ERC S-3547-5	0	157	0	0	0
ERC S-3549-2	806	0	0	0	0
ERC S-3551-1	0	0	0	0	772
Total	154,556	191,018	64,799	662,729	126,141

¹ 57.6 lb/month-July + 31 days-July = 1.9 lb/day

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

Pursuant to Section 4.10 of District Rule 2201, the post-project stationary source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the stationary source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site. The post-project stationary source Potential to Emit (SSPE2) is presented in the following table:

SSPE2 (lb/yr)	
Permit #	VOC
SSPE1	126,141
S-36-104-3 (surrendered)	-176
S-36-116-0	625
Total	126,590

5. Major Source Determination

Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

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

Rule 2201 Major Source Determination (lb/year)					
	NO_x	SO_x	PM₁₀	CO	VOC
SSPE1	153,750	190,861	64,799	662,729	125,369
SSPE2	153,750	190,861	64,799	662,729	126,590
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	Yes	Yes	No	Yes	Yes

As seen in the table above, the facility is an existing Major Source for NOx, SOx, CO and VOC and will remain a Major Source for those pollutants as a result of this project.

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is 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	76.9	62.7	95.4	331.4	32.4	32.4	Calculation not needed
PSD Major Source Thresholds	100	100	100	100	100	100	100,000
PSD Major Source ? (Y/N)	N	N	N	Y	N	N	N/A

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 calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 for:

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

otherwise,

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

S-32-104-3

Clean Emissions Unit, Located at a Major Source

Pursuant to Rule 2201, Section 3.13, a Clean Emissions Unit is defined as an emissions unit that is "equipped with an emissions control technology with a minimum control efficiency of at least 95% or is equipped with emission control technology that meets the requirements for achieved-in-practice BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application.

Existing tank S-104-3 is served by a vapor control system, which meets the requirements for achieved-in-practice BACT pursuant to BACT guideline 7.3.2 (Petroleum and Petrochemical Production – Fixed Roof Organic Liquid Storage or Processing Tank = or > 5,000 bbl Tank capacity (see Attachment F)). Therefore, Baseline Emissions (BE) are equal to the Pre-Project Potential to Emit (PE1) = 176 lb-NOx/yr.

S-32-116-0

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

7. SB 288 Major Modification

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

As discussed in Section VII.C.5 above, the facility is an existing Major Source for VOC; however, the project by itself would need to be a significant increase in order to trigger a Major Modification. The emissions unit within this project does not have a total potential to emit which is greater than Major Modification threshold (see table below). Therefore, the project cannot be a significant increase and the project does not constitute a Major Modification.

SB 288 Major Modification Thresholds (Existing Major Source)			
Pollutant	Project PE (lb/year)	Threshold (lb/year)	Major Modification?
VOC	625	50,000	No

8. Federal Major Modification

District Rule 2201, Section 3.17 states that Federal Major Modifications are the same as "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA. SB 288 Major Modifications are not federal

major modifications if they meet the criteria of the “Less-Than-Significant Emissions Increase” exclusion.

A Less-Than-Significant Emissions Increase exclusion is for an emissions increase for the project, or a Net Emissions Increase for the project (as defined in 40 CFR 51.165 (a)(2)(ii)(B) through (D), and (F)), that is not significant for a given regulated NSR pollutant, and therefore is not a federal major modification for that pollutant.

- To determine the post-project projected actual emissions from existing units, the provisions of 40 CFR 51.165 (a)(1)(xxviii) shall be used.
- To determine the pre-project baseline actual emissions, the provisions of 40 CFR 51.165 (a)(1)(xxxv)(A) through (D) shall be used.
- If the project is determined not to be a federal major modification pursuant to the provisions of 40 CFR 51.165 (a)(2)(ii)(B), but there is a reasonable possibility that the project may result in a significant emissions increase, the owner or operator shall comply with all of the provisions of 40 CFR 51.165 (a)(6) and (a)(7).
- Emissions increases calculated pursuant to this section are significant if they exceed the significance thresholds specified in the table below.

Significant Threshold (lb/year)	
Pollutant	Threshold (lb/year)
VOC	0

The Net Emissions Increases (NEI) for purposes of determination of a “Less-Than-Significant Emissions Increase” exclusion will be calculated below to determine if this project qualifies for such an exclusion.

Since this project consists of both existing and new emissions units, the “hybrid test” specified in 40 CFR(a)(2)(ii)(F) is applicable and requires that the NEI determination be based on the sum of the individual NEI determinations for existing emissions units (NEI_E) and new emissions units (NEI_N) pursuant to 40 CFR(a)(2)(ii)(C) and (D) respectively. In addition, pursuant to 40 CFR (a)(1)(vi)(A)(2), creditable contemporaneous emissions increases (NEI_C) must also be included in the determination of the NEI. Therefore,

$$NEI = NEI_E + NEI_N + NEI_C$$

Net Emission Increase for Existing Units (NEI_E)

There are no net emission increase for existing units; therefore, NEI_E = 0

Net Emission Increase for New Units (NEI_N)

Per 40 CFR 51.165 (a)(2)(ii)(D) for new emissions units in this project,

$$NEI_N = PE2_N - BAE$$

BAE = 0 for the new unit; therefore, $NEI_N = PE2_N$

Net Emissions Increase for New Units (NEI_N)			
Permit Unit	PE2 _N (lb-VOC/year)	BAE (lb-VOC/year)	NEI _N (lb-VOC/year)
S-36-116-0	625	0	625

Creditable Contemporaneous Net Emissions Increase (NEI_C)

This project will cancel and replace the tank listed in permit S-36-104-3. The resulting emission reduction associated with canceling the permit will be a creditable contemporaneous emission decrease associated with this project.

$$NEI_C = PAE - BAE$$

Projected Actual Emissions

As the tank listed in permit S-36-116-3 is being canceled in this project, PAE = 0.

Baseline Actual Emissions

The baseline period is the two years immediately prior to the submission of a complete application. The following historical throughput records were provided by the applicant by email on 2/6/2013.

Baseline Actual Emissions (Permit S-36-104-3)		
Year	Throughput (bbls/yr)	VOC Emissions ² (lb/year)
2011	1,063,581	2,436 x 0.05 = 122
2012	1,136,011	2,537 x 0.05 = 127
Annual Average		125

Creditable Contemporaneous Net Emissions Increase (NEI_C) is calculated as follows:

$$NEI_C = PAE - BAE$$

² See Attachment B for Tanks 4.0 calculations

Creditable Contemporaneous Net Emissions Increase (NEI_C)			
Permit Unit	PAE (lb-VOC/year)	BAE (lb-VOC/year)	NEI _N (lb-VOC/year)
S-36-104-3	0	125	-125

Net Emission Increase

The NEI for this project is thus calculated as follows:

$$NEI = NEI_E + NEI_N + NEI_C$$

Net Emissions Increase (NEI)				
Pollutant	NEI _E (lb/year)	NEI _N (lb/year)	NEI _C (lb/year)	NEI (lb/year)
VOC	0	625	-125	500

The NEI for this project will be greater than the Federal Major Modification threshold for VOC. Therefore, this project does not qualify for a “Less-Than-Significant Emissions Increase” exclusion and is thus determined to be a Federal Major Modification for VOC.

9. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to pollutants for which the District is in attainment or for unclassified, pollutants. The pollutants addressed in the PSD applicability determination are listed as follows:

- NO₂ (as a primary pollutant)
- SO₂ (as a primary pollutant)
- CO
- PM
- PM₁₀
- Greenhouse gases (GHG): CO₂, N₂O, CH₄, HFCs, PFCs, and SF₆

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

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

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

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

I. Project Location Relative to Class 1 Area

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

II. Significance of Project Emission Increase Determination

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

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

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)						
	NO2	SO2	CO	PM	PM10	CO2e
Total PE from New and Modified Units	0	0	0	0	0	1.2 ³
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000
PSD Significant Emission Increase?	N	N	N	N	N	N

³ Assuming worst case that distillate oil is crude oil, VOC is assumed to be 85% by weight of total organic carbon (TOC) (EPA, AP-42 Section 5.2, 2008). Also, assume 15% by weight of TOC is CH4 (methane) if site specific data is not available (2009 API Compendium of Greenhouse Gas Emissions for the Oil and Gas Industry, Appendix E, page E-6)

Annual Emissions

CH4 Emissions = (VOC Emissions + 0.85) x 0.15

CH4 Emissions = [625 + 0.85 x 0.15] lb/year x 21 lb-CO2e per lb-CH4
= 2,316 lb-CO2e/year

Total = 2,316 lb-CO2e/year + 2,000 lb/ton = **1.2 short tons-CO2e/year**

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

QNEC = PE2 - BE, where:

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

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

$$\begin{aligned} \text{PE2}_{\text{quarterly}} &= \text{PE2}_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 625 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 156.25 \text{ lb PM}_{10}\text{/qtr} \end{aligned}$$

$$\begin{aligned} \text{BE}_{\text{quarterly}} &= \text{BE}_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 0 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 0 \text{ lb PM}_{10}\text{/qtr} \end{aligned}$$

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

As seen in Section VII.C.2 above, the applicant is proposing to install a new distillate oil storage tank with a PE less than 2 lb/day for VOC. Therefore, BACT is not triggered.

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

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

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

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

d. SB 288/Federal Major Modification

As discussed in Section VII.C.7 above, this project does constitute a Federal Major Modification for VOC emissions. Therefore BACT is triggered for VOC for all emissions units in the project for which there is an emission increase.

2. BACT Guideline

BACT Guideline 7.3.3 applies to floating roof organic liquid storage tanks ≥ 471 bbl and ≥ 0.5 psia TVP. (See Attachment 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 Attachment F), BACT has been satisfied with the following:

VOC: 95% Control (Primary metal shoe seal with secondary wiper seal, or equal)

B. Offsets

1. Offset Applicability

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

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

Offset Applicability			
Pollutant	SSPE2 (lb/yr)	Offset Threshold Levels (lb/yr)	Offsets Required?
VOC	126,590	20,000	Yes

2. Quantity of Offsets Required

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

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 = Historic Actual Emissions (HAE)

There are no increases in cargo carrier emissions; therefore offsets can be determined as follows: Offsets required (lb/year) = $([PE2 - BE] + ICCE) \times DOR$

Permit No.	Post Project Potential to Emit [PE2] (lb/ yr)				
	NO _x	SO _x	PM ₁₀	CO	VOC
S-36-104	0	0	0	0	0
S-36-116	0	0	0	0	625

Baseline Emissions [BE] (lb/yr)				
NO _x	SO _x	PM ₁₀	CO	VOC
0	0	0	0	-176
0	0	0	0	0

Permit No.	Offsets Required [PE2 - BE] (lb/yr)				
	NO _x	SO _x	PM ₁₀	CO	VOC
S-36-104	0	0	0	0	-176
S-36-116	0	0	0	0	625
Sum =	0	0	0	0	449

Offsets Required (lb/year) = (449) lb-VOC/yr

Calculating the appropriate quarterly emissions to be offset is as follows:

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
112	112	112	113

Assuming an offset ratio of 1.5:1, the amount of VOC ERCs that need to be withdrawn is:

Offsets Required (lb/year) = $([449 - 0]) \times 1.5$
= 674 lb VOC/year

Calculating the appropriate quarterly emissions to be offset is as follows:

<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
168	168	169	169

The applicant has stated that the facility plans to use ERC certificates S-3551-1 to offset the increases in VOC emissions associated with this project.

The above certificate has available quarterly VOC credits as follows:

<u>ERC #</u>	<u>1st Quarter</u>	<u>2nd Quarter</u>	<u>3rd Quarter</u>	<u>4th Quarter</u>
S-3551-1	378	383	387	387

As seen above, the facility has sufficient credits to fully offset the quarterly VOC emissions increases associated with this project.

Proposed Rule 2201 (offset) Conditions:

- Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 112 lb, 2nd quarter - 112 lb, 3rd quarter - 112 lb, and fourth quarter - 113 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201]
- ERC Certificate Number S-3551-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

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 SSIPE 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 VII.C.7, this project is a Federal Major Modification. Therefore, public noticing for Federal Major Modification purposes is required.

b. PE > 100 lb/day

Applications which include a new emissions unit with a 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.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	154,556	154,556	20,000 lb/year	No
SO _x	191,018	191,018	54,750 lb/year	No
PM ₁₀	64,799	64,799	29,200 lb/year	No
CO	662,729	662,729	200,000 lb/year	No
VOC	126,141	126,590	20,000 lb/year	No

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

d. SSIPE > 20,000 lb/year

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

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	154,556	154,556	0	20,000 lb/year	No
SO _x	191,018	191,018	0	20,000 lb/year	No
PM ₁₀	64,799	64,799	0	20,000 lb/year	No
CO	662,729	662,729	0	20,000 lb/year	No
VOC	126,590	126,141	449	20,000 lb/year	No

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

2. Public Notice Action

As discussed above, public noticing is required for this project for being a Federal Major Modification for VOC. Therefore, public notice documents will be

submitted to the California Air Resources Board (CARB) and Environmental Protection Agency (EPA) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily Emissions Limits (DEL)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

- Maximum throughput of tank shall not exceed 12,000 bbl/day. [District Rule 2201]
- {2480} This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623 and 40 CFR 60.110b(b)]

E. Compliance Assurance

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

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. Record Keeping

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

- {2912} Permittee shall submit the records of TVP and API gravity testing to the APCO within 45 days after the date of testing. The records shall include the tank identification number, Permit to Operate number, type of stored organic liquid, TVP and API gravity of the organic liquid, test methods used, and a copy of the test results. [District Rules 4623]

- {2913} The permittee shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rules 4623]
- {2490} All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

Section 4.14.1 of this Rule requires that an ambient air quality analysis (AAQA) be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. However, since this project involves only VOC and no ambient air quality standard exists for VOC, an AAQA is not required for this project.

G. Compliance Certification

Rule 2201 requires the owner of a new Major Source or a source undergoing a Federal Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Sections VIII-Rule 2201-C.1.a and VIII-Rule 2201-C.1.b, this source is undergoing a Federal Major Modification, therefore this requirement is applicable. Included in Attachment E is the facility's compliance certification.

H. Alternate Siting Analysis

Alternative siting analysis is required for any project, which constitutes a New Major Source or a Federal Major Modification.

In addition to storage tanks, the operation of a petroleum refinery requires a large number support equipment, services and structures..

Since the current project involves only a minimal increase in the refinery's total tank volume and no change to any other facets of the operation, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures and facilities on a much greater scale, and would therefore result in a much greater impact.

Rule 2410 Prevention of Significant Deterioration

The prevention of significant deterioration (PSD) program is a construction permitting program for new major stationary sources and major modifications to existing major stationary sources located in areas classified as attainment or in areas that are unclassifiable for any criteria air pollutant.

As demonstrated above, this project is not subject to the requirements of Rule 2410 due to a significant emission increase and no further discussion is required.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. Section 3.29 defines a significant permit modification as a "permit amendment that does not qualify as a minor permit modification or administrative amendment."

Section 3.20.5 states that a minor permit modification is a permit modification that does not meet the definition of modification as given in Section 111 or Section 112 of the Federal Clean Air Act. Since this project is a Title I modification (i.e. Federal Major Modification), the proposed project is considered to be a modification under the Federal Clean Air Act. As a result, the proposed project constitutes a Significant Modification to the Title V Permit pursuant to Section 3.29.

As discussed above, the facility has applied for a Certificate of Conformity (COC) (see Attachment E); therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility shall not implement the changes requested until the final permit is issued.

Rule 4001 New Source Performance Standards

This rule incorporates the New Source Performance Standards from 40 CFR Part 60. 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 60.110b(b), these subparts do not apply to storage vessels greater than less than 950 bbls, used to store a liquid with a maximum TVP less than 0.5 psi.

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

Rule 4101 - Visible Emissions

Rule 4101 states that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity.

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

Rule 4102 - Public Nuisance

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance.

California Health & Safety Code 41700 (Health Risk Assessment)

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

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

The cancer risk for this project is shown below:

HRA Summary		
Unit	Cancer Risk	T-BACT Required
S-36-116-0	0.104 per million	No

Discussion of T-BACT

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

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 shall be placed on the ATC:

{2480} This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623]

{2910} Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rule 4623] N

{2482} The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287 e1 "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 4623] N

{2483} For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA. [District Rule 4623] N

{2911} The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. The permittee shall also conduct an API gravity testing. [District Rules 4623] N

{2912} Permittee shall submit the records of TVP and API gravity testing to the APCO within 45 days after the date of testing. The records shall include the tank identification number, Permit to Operate number, type of stored organic liquid, TVP and API gravity of the organic liquid, test methods used, and a copy of the test results. [District Rules 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 Rules 4623] N

{2490} All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623] N

Compliance with the requirements of this rule is expected.

CH&SC 42301.6 California Health & Safety Code (School Notice)

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

California Environmental Quality Act (CEQA)

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas (GHG) Significance Determination

It is determined that no other agency has or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project.

Section VII.C.9.II demonstrates that CO₂e emissions from this project are 1.2 ton/year. Per District Policy, project specific greenhouse gas emissions less than or equal to 230 metric tons-CO₂e/year are considered to be zero for District permitting purposes and are exempt from further environmental review.

The District's engineering evaluation (this document – Section VII.C.9.II) demonstrates that the project would not result in an increase in project specific greenhouse gas emissions. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

District CEQA Findings

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined

that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15031 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

IX. Recommendations

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue Authority to Construct S-36-116-0 subject to the permit conditions on the attached draft Authority to Construct in Attachment F.

X. Billing Information

Permit Number	Fee Schedule	Fee Description	Annual Fee
S-36-116-0	3020-5-G	1,890,000 gallons	\$382

Attachments:

- Attachment: A PTO S-36-104-3
- Attachment: B Tanks 4.0 Emissions Calculations for S-36-104-3
- Attachment: C Tanks 4.0 Emissions Calculations for S-36-116-0
- Attachment: D HRA Summary
- Attachment: E Compliance Certificate and Certificate of Conformity
- Attachment: F BACT Guidelines and Analysis
- Attachment: G Draft ATC

Attachment A
PTO S-36-104-3

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-36-104-3

EXPIRATION DATE: 08/31/2016

SECTION: 24 **TOWNSHIP:** 29S **RANGE:** 27E

EQUIPMENT DESCRIPTION:

37,000 BBL DISTILLATE OIL TANK 37001 WITH NATURAL GAS BLANKET AND VAPOR COLLECTION SYSTEM
CONNECTED TO PERMIT UNIT S-36-51

PERMIT UNIT REQUIREMENTS

1. True Vapor Pressure of material stored shall not exceed 0.5 psia at storage temperature. [District NSR Rule and 4623] Federally Enforceable Through Title V Permit
2. Tank vapors shall only vent to vapor collection system tied in with permit unit S-36-51. [District NSR Rule] Federally Enforceable Through Title V Permit
3. Liquid throughput shall not exceed 12,000 bbl per day. [District NSR Rule] Federally Enforceable Through Title V Permit
4. Permittee shall maintain accurate daily records of tank liquid throughput and shall make such records readily available for District inspection for a period of at least five years. [District NSR Rule and 1070] Federally Enforceable Through Title V Permit
5. Operator shall maintain records, kept for the life of the source, showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. [40 CFR 60.116b(a)] Federally Enforceable Through Title V Permit
6. The operator shall notify the APCO within 30 days of any occurrence in which the maximum true vapor pressure of the liquid stored exceeds the true vapor pressure limitations specified in this permit. [40 CFR 60.116b(d)] Federally Enforceable Through Title V Permit
7. Maximum true vapor pressure, for crude oil or refined petroleum products, may be determined from nomographs contained in API Bulletin 2517, by using the typical Reid vapor pressure and the maximum expected storage temperature of the stored product, unless the APCO specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s). [40 CFR 60.116b(e)(2)(i)] Federally Enforceable Through Title V Permit
8. For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service. [40 CFR 60.116b(e)(1)] Federally Enforceable Through Title V Permit
9. Operator shall determine the true vapor pressure of each VOL, other than crude oil or refined petroleum products, from standard reference texts, by ASTM Method D2879, or by using an appropriate method approved by the EPA. [40 CFR 60.116b(e)] Federally Enforceable Through Title V Permit
10. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rule 4623] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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

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] Federally Enforceable Through Title V Permit
12. 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] Federally Enforceable Through Title V Permit
13. 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] Federally Enforceable Through Title V Permit
14. 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] Federally Enforceable Through Title V Permit
15. 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] Federally Enforceable Through Title V Permit

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

Attachment B

Tanks 4.0 Emissions Calculations for S-36-104-3

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification:	Tank 37001 Pre-Project
City:	Bakersfield
State:	California
Company:	San Joaquin Refining
Type of Tank:	Vertical Fixed Roof Tank
Description:	

Tank Dimensions

Shell Height (ft):	33.20
Diameter (ft):	90.00
Liquid Height (ft) :	31.20
Avg. Liquid Height (ft):	15.00
Volume (gallons):	1,484,781.99
Turnovers:	123.90
Net Throughput(gal/yr):	183,964,488.35
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	Gray/Medium
Shell Condition	Good
Roof Color/Shade:	Gray/Medium
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.06

Breather Vent Settings

Vacuum Settings (psig):	-0.03
Pressure Settings (psig)	0.03

Meteorological Data used in Emissions Calculations: Bakersfield, California (Avg Atmospheric Pressure = 14.47 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Tank 37001 Pre-Project - Vertical Fixed Roof Tank
Bakersfield, California

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Distillate fuel oil no. 2	All	75.98	63.72	88.24	68.48	0.0108	0.0074	0.0153	130.0000			188.00	Option 1: VP70 = .009 VP80 = .012

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Tank 37001 Pre-Project - Vertical Fixed Roof Tank
Bakersfield, California

Annual Emission Calculations

Standing Losses (lb):	943.6970
Vapor Space Volume (cu ft):	121,747.5144
Vapor Density (lb/cu ft):	0.0002
Vapor Space Expansion Factor:	0.0879
Vented Vapor Saturation Factor:	0.9892
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	121,747.5144
Tank Diameter (ft):	80.0000
Vapor Space Outage (ft):	19.1375
Tank Shell Height (ft):	33.2000
Average Liquid Height (ft):	15.0000
Roof Outage (ft):	0.9375
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.9375
Roof Height (ft):	0.0000
Roof Slope (ft/ft):	0.0625
Shell Radius (ft):	45.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0002
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0108
Daily Avg. Liquid Surface Temp. (deg. R):	535.6527
Daily Average Ambient Temp. (deg. F):	65.4000
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	528.1500
Tank Paint Solar Absorptance (Shell):	0.6800
Tank Paint Solar Absorptance (Roof):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,648.9051
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0879
Daily Vapor Temperature Range (deg. R):	49.0352
Daily Vapor Pressure Range (psia):	0.0079
Breather Vent Press. Setting Range (psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0108
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0074
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0153
Daily Avg. Liquid Surface Temp. (deg R):	535.6527
Daily Min. Liquid Surface Temp. (deg R):	523.3939
Daily Max. Liquid Surface Temp. (deg R):	547.9115
Daily Ambient Temp. Range (deg. R):	24.5000
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9892
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0108

Vapor Space Outage (ft):	19.1375
Working Losses (lb):	2,512.7624
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0108
Annual Net Throughput (gal/yr.):	183,964,488.3540
Annual Turnovers:	123.9000
Turnover Factor:	0.4088
Maximum Liquid Volume (gal):	1,484,761.9883
Maximum Liquid Height (ft):	31.2000
Tank Diameter (ft):	90.0000
Working Loss Product Factor:	1.0000
 Total Losses (lb):	 3,456.4594

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Tank 37001 Pre-Project - Vertical Fixed Roof Tank
Bakersfield, California

Components	Losses(lbs)		
	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	2,512.76	943.70	3,456.46

The original project assumed 95% control

$$3456.5 \times 0.05 = 172.8 \text{ lb/yr; } 0.47 \text{ lb/day}$$

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification: S-36-104-3 Baseline 2011
City:
State:
Company:
Type of Tank: Vertical Fixed Roof Tank
Description:

Tank Dimensions

Shell Height (ft): 33.20
Diameter (ft): 90.00
Liquid Height (ft) : 31.20
Avg. Liquid Height (ft): 15.00
Volume (gallons): 1,554,000.00
Turnovers: 28.75
Net Throughput(gal/yr): 44,670,402.00
Is Tank Heated (y/n): N

Paint Characteristics

Shell Color/Shade: Gray/Medium
Shell Condition: Good
Roof Color/Shade: Gray/Medium
Roof Condition: Good

Roof Characteristics

Type: Cone
Height (ft): 0.00
Slope (ft/ft) (Cone Roof): 0.06

Breather Vent Settings

Vacuum Settings (psig): -0.03
Pressure Settings (psig): 0.03

Meteorological Data used in Emissions Calculations: Bakersfield, California (Avg Atmospheric Pressure = 14.47 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

S-36-104-3 Baseline 2011 - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Distillate fuel oil no. 2	All	75.88	63.72	88.24	68.48	0.0108	0.0080	0.0153	130.0000			188.00	Option 1: VP70 = .009 VP80 = .012

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

S-36-104-3 Baseline 2011 - Vertical Fixed Roof Tank

Annual Emission Calculations

Standing Losses (lb):	943.2778
Vapor Space Volume (cu ft):	121,747.5144
Vapor Density (lb/cu ft):	0.0002
Vapor Space Expansion Factor:	0.0879
Vented Vapor Saturation Factor:	0.9892
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	121,747.5144
Tank Diameter (ft):	90.0000
Vapor Space Outage (ft):	19.1375
Tank Shell Height (ft):	33.2000
Average Liquid Height (ft):	15.0000
Roof Outage (ft):	0.9375
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.9375
Roof Height (ft):	0.0000
Roof Slope (ft/ft):	0.0625
Shell Radius (ft):	45.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0002
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0108
Daily Avg. Liquid Surface Temp. (deg. R):	535.6527
Daily Average Ambient Temp. (deg. F):	65.4000
Ideal Gas Constant R (psia cu ft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	528.1500
Tank Paint Solar Absorptance (Shell):	0.6800
Tank Paint Solar Absorptance (Roof):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,648.9051
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0879
Daily Vapor Temperature Range (deg. R):	49.0352
Daily Vapor Pressure Range (psia):	0.0073
Breather Vent Press. Setting Range (psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0108
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0080
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0153
Daily Avg. Liquid Surface Temp. (deg R):	535.6527
Daily Min. Liquid Surface Temp. (deg R):	523.3939
Daily Max. Liquid Surface Temp. (deg R):	547.9115
Daily Ambient Temp. Range (deg. R):	24.5000
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9892
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0108
Vapor Space Outage (ft):	19.1375

Working Losses (lb):	1,492.5509
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0108
Annual Net Throughput (gal/yr.):	44,870,402.0000
Annual Turnovers:	28.7454
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	1,554,000.0000
Maximum Liquid Height (ft):	31.2000
Tank Diameter (ft):	90.0000
Working Loss Product Factor:	1.0000

Total Losses (lb):	2,435.8287
--------------------	------------

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual**S-36-104-3 Baseline 2011 - Vertical Fixed Roof Tank**

Components	Losses(lbs)		
	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	1,492.55	943.28	2,435.83

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification: S-36-104-3 Baseline 2012
City:
State:
Company:
Type of Tank: Vertical Fixed Roof Tank
Description:

Tank Dimensions

Shell Height (ft): 33.20
Diameter (ft): 90.00
Liquid Height (ft) : 31.20
Avg. Liquid Height (ft): 15.00
Volume (gallons): 1,554,000.00
Turnovers: 28.75
Net Throughput(gal/yr): 47,712,462.00
Is Tank Heated (y/n): N

Paint Characteristics

Shell Color/Shade: Gray/Medium
Shell Condition: Good
Roof Color/Shade: Gray/Medium
Roof Condition: Good

Roof Characteristics

Type: Cone
Height (ft) 0.00
Slope (ft/ft) (Cone Roof) 0.06

Breather Vent Settings

Vacuum Settings (psig): -0.03
Pressure Settings (psig) 0.03

Meteorological Data used in Emissions Calculations: Bakersfield, California (Avg Atmospheric Pressure = 14.47 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

S-36-104-3 Baseline 2012 - Vertical Fixed Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Distillate fuel oil no. 2	All	75.98	63.72	88.24	68.48	0.0108	0.0080	0.0153	130.0000			188.00	Option 1: VP70 = .009 VP80 = .012

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

S-36-104-3 Baseline 2012 - Vertical Fixed Roof Tank

Annual Emission Calculations

Standing Losses (lb):	943.2778
Vapor Space Volume (cu ft):	121,747.5144
Vapor Density (lb/cu ft):	0.0002
Vapor Space Expansion Factor:	0.0879
Vented Vapor Saturation Factor:	0.9892
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	121,747.5144
Tank Diameter (ft):	90.0000
Vapor Space Outage (ft):	19.1375
Tank Shell Height (ft):	33.2000
Average Liquid Height (ft):	15.0000
Roof Outage (ft):	0.9375
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.9375
Roof Height (ft):	0.0000
Roof Slope (ft/ft):	0.0625
Shell Radius (ft):	45.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0002
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0108
Daily Avg. Liquid Surface Temp. (deg. R):	535.6527
Daily Average Ambient Temp. (deg. F):	65.4000
Ideal Gas Constant R (psia cu ft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	528.1500
Tank Paint Solar Absorptance (Shell):	0.6800
Tank Paint Solar Absorptance (Roof):	0.6800
Daily Total Solar Insulation Factor (Btu/sqft day):	1,648.9051
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0879
Daily Vapor Temperature Range (deg. R):	49.0352
Daily Vapor Pressure Range (psia):	0.0073
Breather Vent Press. Setting Range (psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0108
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0080
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0153
Daily Avg. Liquid Surface Temp. (deg R):	535.6527
Daily Min. Liquid Surface Temp. (deg R):	523.3939
Daily Max. Liquid Surface Temp. (deg R):	547.9115
Daily Ambient Temp. Range (deg. R):	24.5000
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9892
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0108
Vapor Space Outage (ft):	19.1375

Working Losses (lb):	1,594.1938
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0108
Annual Net Throughput (gal/yr.):	47,712,462.0000
Annual Turnovers:	28.7454
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	1,554,000.0000
Maximum Liquid Height (ft):	31.2000
Tank Diameter (ft):	90.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	2,537.4716

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual**S-36-104-3 Baseline 2012 - Vertical Fixed Roof Tank**

Components	Losses(lbs)		
	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	1,594.19	943.28	2,537.47

Attachment C

Tanks 4.0 Emissions Calculations for S-36-116-0

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification: SJR 45002
City:
State:
Company:
Type of Tank: Internal Floating Roof Tank
Description:

Tank Dimensions

Diameter (ft): 90.00
Volume (gallons): 1,764,000.00
Turnovers: 104.30
Self Supp. Roof? (y/n): N
No. of Columns: 1.00
Eff. Col. Diam. (ft): 0.70

Paint Characteristics

Internal Shell Condition: Light Rust
Shell Color/Shade: White/White
Shell Condition: Good
Roof Color/Shade: White/White
Roof Condition: Good

Rim-Seal System

Primary Seal: Mechanical Shoe
Secondary Seal: Rim-mounted

Deck Characteristics

Deck Fitting Category: Detail
Deck Type: Welded

Deck Fitting/Status**Quantity**

Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask.	1
Ladder Well (36-in. Diam.)/Sliding Cover, Gasketed	1
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Sock	28
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	1
Roof Drain (3-in. Diameter)/Open	1

Meteorological Data used in Emissions Calculations: Bakersfield, California (Avg Atmospheric Pressure = 14.47 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

SJR 45002 - Internal Floating Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
SJR Distillate	Jan	58.62	54.46	62.78	65.42	0.1562	N/A	N/A	130.0000			150.00	Option 1: VP50 = .07 VP60 = .17
SJR Distillate	Feb	61.49	56.39	66.58	65.42	0.2042	N/A	N/A	130.0000			150.00	Option 1: VP60 = .17 VP70 = .4
SJR Distillate	Mar	63.85	57.94	69.77	65.42	0.2586	N/A	N/A	130.0000			150.00	Option 1: VP60 = .17 VP70 = .4
SJR Distillate	Apr	66.98	60.01	73.95	65.42	0.3305	N/A	N/A	130.0000			150.00	Option 1: VP60 = .17 VP70 = .4
SJR Distillate	May	71.00	63.30	78.70	65.42	0.4130	N/A	N/A	130.0000			150.00	Option 1: VP70 = .4 VP80 = .53
SJR Distillate	Jun	74.47	66.32	82.63	65.42	0.4582	N/A	N/A	130.0000			150.00	Option 1: VP70 = .4 VP80 = .53
SJR Distillate	Jul	77.01	66.80	85.22	65.42	0.4912	N/A	N/A	130.0000			150.00	Option 1: VP70 = .4 VP80 = .53
SJR Distillate	Aug	76.03	68.25	83.81	65.42	0.4784	N/A	N/A	130.0000			150.00	Option 1: VP70 = .4 VP80 = .53
SJR Distillate	Sep	72.96	65.93	79.98	65.42	0.4384	N/A	N/A	130.0000			150.00	Option 1: VP70 = .4 VP80 = .53
SJR Distillate	Oct	68.33	62.00	74.66	65.42	0.3615	N/A	N/A	130.0000			150.00	Option 1: VP60 = .17 VP70 = .4
SJR Distillate	Nov	62.38	57.33	67.44	65.42	0.2248	N/A	N/A	130.0000			150.00	Option 1: VP60 = .17 VP70 = .4
SJR Distillate	Dec	58.39	54.32	62.46	65.42	0.1539	N/A	N/A	130.0000			150.00	Option 1: VP50 = .07 VP60 = .17

TANKS 4.0.9d Emissions Report - Detail Format Detail Calculations (AP-42)

SJR 45002 - Internal Floating Roof Tank

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):	1.5874	2.0784	2.6371	3.3788	4.2342	4.7052	5.0501	4.9166	4.4993	3.7000	2.2902	1.5633
Seal Factor A (lb-mole/ft-yr):	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000	0.6000
Seal Factor B (lb-mole/ft-yr (mph) ⁿ):	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000	0.4000
Value of Vapor Pressure Function:	0.0027	0.0036	0.0045	0.0058	0.0072	0.0080	0.0086	0.0084	0.0077	0.0063	0.0039	0.0027
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.1562	0.2042	0.2588	0.3305	0.4130	0.4582	0.4912	0.4784	0.4384	0.3815	0.2248	0.1539
Tank Diameter (ft):	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000
Vapor Molecular Weight (lb/lb-mole):	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Withdrawal Losses (lb):	40.7456	40.7456	40.7456	40.7456	40.7456	40.7456	40.7456	40.7456	40.7456	40.7456	40.7456	40.7456
Number of Columns:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Effective Column Diameter (ft):	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000
Net Throughput (gal/mo.):	15,435,000.0000	15,435,000.0000	15,435,000.0000	15,435,000.0000	15,435,000.0000	15,435,000.0000	15,435,000.0000	15,435,000.0000	15,435,000.0000	15,435,000.0000	15,435,000.0000	15,435,000.0000
Shell Clingage Factor (bb/1000 sqft):	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
Average Organic Liquid Density (lb/gal):	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000
Tank Diameter (ft):	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000
Deck Fitting Losses (lb):	3.7255	4.8778	6.1888	7.9294	9.9370	11.0425	11.8517	11.5384	10.5592	8.6834	5.3748	3.6689
Value of Vapor Pressure Function:	0.0027	0.0036	0.0045	0.0058	0.0072	0.0080	0.0086	0.0084	0.0077	0.0063	0.0039	0.0027
Vapor Molecular Weight (lb/lb-mole):	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	126.7300	126.7300	126.7300	126.7300	126.7300	126.7300	126.7300	126.7300	126.7300	126.7300	126.7300	126.7300
Deck Seam Losses (lb):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Deck Seam Length (ft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Tank Diameter (ft):	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000	90.0000
Vapor Molecular Weight (lb/lb-mole):	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000	130.0000
Product Factor:	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Losses (lb):	48.0585	47.7019	49.5714	52.0538	54.9168	58.4933	57.6474	57.2006	55.8041	53.1290	48.4107	45.9779

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors			Losses(lb)
		KFa(lb-mole/yr)	KFb(lb-mole/(yr mph ⁿ))	m	
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	1.2067
Automatic Gauge Float Well/Unbolted Cover, Ungasketed	1	14.00	5.40	1.10	10.5588
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask.	1	33.00	0.00	0.00	24.8881
Ladder Well (36-in. Diam.)/Sliding Cover, Gasketed	1	58.00	0.00	0.00	42.2344
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Sock	28	0.48	0.16	0.14	10.3474
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	4.6760
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	1	0.71	0.10	1.00	0.5355
Roof Drain (3-in. Diameter)/Open	1	1.50	0.21	1.70	1.1313

TANKS 4.0.9d Emissions Report - Detail Format

Individual Tank Emission Totals**Emissions Report for: January, February, March, April, May, June, July, August, September, October, November, December****SJR 45002 - Internal Floating Roof Tank**

Components	Losses(lbs)				Total Emissions
	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	
SJR Distillate	40.64	488.95	95.38	0.00	624.97

Attachment D

HRA Summary

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Jesse Garcia – Permit Services
From: Kou Thao – Technical Services
Date: 2-20-13
Facility Name: San Joaquin Refining
Location: 3129 Standard St, Bakersfield, CA
Application #(s): S-36-116-0
Project #: S-1130003

A. RMR SUMMARY

RMR Summary			
Categories	Oilfield tank (Unit 116-0)	Project Totals	Facility Totals
Prioritization Score	0.01	0.01	>1
Acute Hazard Index	4.10E-05	4.10E-05	5.36E-02
Chronic Hazard Index	5.55E-06	5.55E-06	2.57E-02
Maximum Individual Cancer Risk (10^{-6})	1.04E-07	1.04E-07	4.44E-06
T-BACT Required?	No		
Special Permit Conditions?	No		

Proposed Permit Conditions

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

Unit # 116-0

No special conditions are required.

B. RMR REPORT

I. Project Description

Technical Services received a request on February 15, 2013 to perform a Risk Management Review for a proposed installation of a 45,000 bbl welded internal floating roof distillate oil tank.

II. Analysis

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

Analysis Parameters Unit 116-0			
Source Type	Circular Area	Location Type	Urban
Radius of Circular Area (m)	13.83	Closest Receptor (m)	160
Release Height (m)	12.19	Type of Receptor	Residential
		Pollutant Type	VOC
		Emission Rate	0.07 lb/hr

III. Conclusion

The acute and chronic indices are below 1.0 and the cancer risk factor associated with the project is less than 1.0 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 this proposed unit.

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

IV. Attachments

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

Attachment E

Compliance Certificate and Certificate of Conformity

RECEIVED

DEC 31 2012



SAN JOAQUIN REFINING CO., INC.

SJVAPCD
Southern Region

3129 Standard Street • P.O. Box 5576 • Bakersfield, CA 93388 • Phone 661 / 327-4257 • Fax 661 / 327-3236 • www.sjr.com

December 21, 2012

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

Subject: Federal Major Modification Compliance Certification

Dear Mr. Scandura:

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


Signature


Title

Attachment F

**BACT Guideline 7.3.2 (for reference) and
Guideline 7.3.3 and BACT Analysis**

**San Joaquin Valley
Unified Air Pollution Control District**

Best Available Control Technology (BACT) Guideline 7.3.2*

Last Update 10/1/2002

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

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
PM10	50% control, (Waste gas incinerated at scrubbed steam generator, heater treater or incinerator or compressed and injected in injection wells and inspection and maintenance program, or equal)	99% control (Transfer of noncondensable vapors to gas pipeline; reinjection to formation (if appropriate wells are available); or equal).	
SOx		95% control (Vapor collection system and either a) sulfur removal by scrubber with inspection and maintenance program or b) vapors no greater than 0.2 gr S/100 dscf; transfer of non-condensable vapors to gas pipeline; reinjection to formation (if appropriate wells are available), or equal)	
VOC	99% Control (Waste gas incinerated in steam generator, heater treater or other fired equipment and inspection and maintenance program, or equal)	99% control (Transfer of noncondensable vapors to gas pipeline; reinjection to formation (if appropriate wells are available); thermal or catalytic oxidizer; carbon adsorption; or equal).	

** Converted from Determinations 7.1.4 and 7.1.12 (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**

**San Joaquin Valley
Unified Air Pollution Control District**

Best Available Control Technology (BACT) Guideline 7.3.3*

Last Update 10/1/2002

**Petroleum and Petrochemical Production - Floating Roof Organic
Liquid Storage or Processing Tank, = or > 471 bbl Tank capacity, = or > 0.5 psia
TVP**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	95% control (Primary metal shoe seal with secondary wiper seal, or equal)	95% Control (Dual wiper seal with drip curtain or primary metal shoe seal with secondary wiper seal, or equal.)	

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in 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**

Internal Floating Roof Tank Top Down BACT Analysis

1. BACT Analysis for VOC Emissions:

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 7.3.3, identifies BACT for VOC emissions from a floating roof organic liquid storage tank as follows:

- 1) 95% Control (Dual wiper seal, with drip curtain or primary metal shoe seal with secondary wiper seal, or equal.) – Technologically Feasible
- 2) 95% Control (Primary metal shoe seal with secondary wiper seal, or equal). – Achieved in Practice

b. Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options to eliminate from step 1.

c. Step 3 - Rank remaining options by control effectiveness

- 1) 95% Control (Dual wiper seal, with drip curtain or primary metal shoe seal with secondary wiper seal, or equal.) – Technologically Feasible
- 2) 95% Control (Primary metal shoe seal with secondary wiper seal, or equal). – Achieved in Practice

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed installing an internal floating roof tank equipped with a primary metal shoe seal with secondary wiper seal. Since these technologies have the same expected control efficiencies and a primary metal shoe seal with secondary wiper seal is both achieved in practice and technologically feasible, it will be considered the most effective option and a cost effective analysis will not be necessary.

e. Step 5 – Selection of BACT

The proposed use of an internal floating roof equipped with a primary metal shoe seal with secondary wiper seal resulting in 95% VOC emissions control efficiency satisfies BACT requirements for this operation.

Attachment G

Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: S-36-116-0

LEGAL OWNER OR OPERATOR: SAN JOAQUIN REFINING COMPANY
MAILING ADDRESS: PO BOX 5576
BAKERSFIELD, CA 93388

LOCATION: STANDARD AND SHELL ST
BAKERSFIELD, CA 93308

EQUIPMENT DESCRIPTION:
45,000 BBL WELDED INTERNAL FLOATING ROOF DISTILLATE OIL TANK #45002 WITH MECHANICAL SHOE
PRIMARY SEAL AND SECONDARY WIPER SEAL

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. Permit to Operate S-36-104-3 shall be surrendered to the District and the associated equipment shall be removed or rendered inoperable not later than the date of initial operation of this modified emissions unit. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 112 lb, 2nd quarter - 112 lb, 3rd quarter - 112 lb, and fourth quarter - 113 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 4/21/11). [District Rule 2201] Federally Enforceable Through Title V Permit
5. ERC Certificate Number S-3551-1 (or a certificate split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [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-36-116-0 : Feb 25 2013 10:03AM - GARCIAJ : Joint Inspection NOT Required

6. Maximum throughput of tank shall not exceed 12,000 bbl/day. [District Rule 2201] Federally Enforceable Through Title V Permit
7. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623] Federally Enforceable Through Title V Permit
8. An operator shall conduct a TVP testing of each uncontrolled fixed roof 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 each tank. In lieu of testing each uncontrolled fixed roof tank, an operator may conduct a TVP testing of a representative tank provided the requirements of Sections 6.2.1.1.1 through 6.2.1.1.5 are met. [District Rule 4623] Federally Enforceable Through Title V Permit
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] Federally Enforceable Through Title V Permit
10. 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] Federally Enforceable Through Title V Permit
11. 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] Federally Enforceable Through Title V Permit
12. An operator shall submit the records of TVP and API gravity testing conducted in accordance with the requirements of Section 6.2 to the APCO within 45 days after the date of testing. The record shall include the tank identification number, PTO number, type of stored organic liquid, TVP and API gravity of the stored organic liquid, test methods used, and a copy of the test results. [District Rule 4623] Federally Enforceable Through Title V Permit
13. Permittee shall maintain accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rule 4623] Federally Enforceable Through Title V Permit
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] Federally Enforceable Through Title V Permit

DRAFT