

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

Facility Name: Big West of California, LLC
Mailing Address: 6451 Rosedale Hwy
Bakersfield, CA 93308

Date: SEP 03 2008
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Application #(s): S-33-13-18, '-67-4, '-419-0, '-420-0, '-423-0, '-424-0, '-425-0, '-426-0, '-428-0, '-429-0, and '-434-0

Project #: S1062742

Applications submitted: June 14, 2006

Deemed Complete: January 23, 2007

I. Proposal

Big West of California, LLC (Big West) is proposing a major upgrade to the refinery located at 6541 Rosedale Highway, Bakersfield (Areas 1 and 2). This project, which Big West refers to as the "Clean Fuels Project", proposes the installation and modification of process equipment to convert approximately 30,000 barrel per day of heavy gas oil to gasoline, diesel and LPG. Currently, this heavy gas oil feed is sent to other refineries for processing. The Clean Fuels Project will not increase the overall capacity of the refinery, which is approximately 67,000 barrels per day of crude oil.

The District's permitting of the Clean Fuels Project is separated into projects 1061149, 1062741, and 1062742.

The following is a list of the equipment being installed or modified as this sub-project portion of the Clean Fuels Project:

- S-33-13-18 Modification of Mild Hydrocracker #14
- S-33-41-4 Modification of 80,000 Bbl Fixed Roof Organic Liquid Storage Tank
- S-33-67-4 Modification of 30,000 Bbl Fixed Roof Organic Liquid Storage Tank
- S-33-419-0 New 525 bhp Emergency Diesel Engine Powering a Firewater Pump
- S-33-420-0 New 525 bhp Emergency Diesel Engine Powering a Firewater Pump
- S-33-423-0 New 80,000 Bbl Fixed Roof Organic Liquid Storage Tank (or)
- S-33-424-0 New 80,000 Bbl External Floating Roof Organic Liquid Storage Tank
- S-33-425-0 Permit Existing Previously Exempt 20,000 Bbl Fixed Roof Organic Liquid Storage Tank
- S-33-426-0 Permit Existing Previously Exempt 20,000 Bbl Fixed Roof Organic Liquid Storage Tank
- S-33-428-0 New 80,000 Bbl Fixed Roof Organic Liquid Storage Tank
- S-33-429-0 New 525 bhp Emergency Diesel Engine Powering a Firewater Pump
- S-33-434-0 New 80,000 Bbl External Floating Roof Organic Liquid Storage Tank

Big West received their Title V Permit on February 28, 2003. This modification is classified as a Title V significant permit modification pursuant to Rule 2520, Section 3.29, and, at the applicant's request, is being processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this part of the Clean Fuels Project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct (ATC) documents. Big West must apply to administratively amend their Title V Operating Permit to include the requirements of the Authority to Construct documents issued with this sub-project.

The County of Kern is the lead agency for this and other individual District sub-projects making up the "Clean Fuels Project" for the requirements of the California Environmental Quality Act (CEQA).

Also, the Clean Fuels Project is subject to requirements under the Prevention of Significant Deterioration permitting program administered by the Environmental Protection Agency (USEPA).

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (09/21/06)
Rule 2520 Federally Mandated Operating Permits (6/21/01)
Rule 4001 New Source Performance Standards (4/14/99)
Rule 4002 National Emissions Standard for Hazardous Air Pollutants (5/20/04)
Rule 4101 Visible Emissions (02/17/05)
Rule 4102 Nuisance (12/17/92)
Rule 4201 Particulate Matter Concentration (12/17/92)
Rule 4454 Refinery Process Unit Turnaround (12/17/92)
Rule 4455 Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants (04/20/05)
Rule 4623 Storage of Organic Liquids (05/19/05)
Rule 4701 Stationary Internal Combustion Engines – Phase 1 (8/21/03)
Rule 4702 Stationary Internal Combustion Engines – Phase 2 (1/18/07)
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 41700 Health Risk Assessment
CH&SC 42301.6 School Notice
Title 17 CCR, Section 93115 - Airborne Toxic Control Measure (ATCM) for Stationary Compression-Ignition (CI) Engines
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines
Federal NSR Requirements for PM2.5 – 40 CFR Part 51 Appendix S

III. Project Location

The facility is located at 6451 Rosedale Highway Bakersfield, 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 part of the Clean Fuels Project. See the facility location map included as Appendix A.

IV. Process Description

Each new or modified permit unit/emissions unit is discussed below.

S-33-13-18: Modify Mild Hydrocracker #14

As part of the Clean Fuels Project, Big West will hydrotreat diesel blending components to reduce the total aromatic content to less than 10 % by weight to allow blending to CARB specifications. The streams that will require hydrocracking are straight run diesel, VGO-HDS diesel from the high pressure hydro-de-sulfurization process, and a blend of light cycle oil and heavy cat naphtha from the FCC unit.

The hydrocracking will be carried out in the existing Mild Hydrocracking Unit (Unit 14), which will be upgraded using proprietary technology provided by the process licensor. A second stage reactor will be needed to achieve the required level of aromatic reduction. Modifications to the existing hydrocracker will include the addition of this second stage reactor and the installation of additional heat exchanger surface, new recycle and make-up hydrogen compressors, and miscellaneous piping components and pumps.

Note that no modifications will be made to the existing heaters 14-H1 and 14-H2. This application addresses only changes to the fugitive components within the Unit 14 Mild Hydrocracker.

S-33-41-4: Modify 80,000 Bbl Fixed Roof Organic Liquid Storage Tank #80006

Tank 80006 is an 80,000 bbl capacity fixed roof tank with a vapor control system (VCS) serving tanks S-33-42, S-33-46 and marketing terminal S-3303-1. The change is to increase the permitted vapor control efficiency from 95% to 99%. This is being performed to complement Big West project S-3303; 1062741. This is not an NSR modification per Rule 2201, Section 3.25, as the VCS currently meets 99% control efficiency. No physical modifications or changes to the method of operation are required.

S-33-67-4: Modify 30,000 Bbl Fixed Roof Organic Liquid Storage Tank #30M02

Tank 30M02 is a 30,000 bbl capacity fixed roof tank that is currently uncontrolled and restricted to storage of materials with TVP < 0.5 psia. The tank will be connected to the refinery's existing VCS which feeds into the refinery fuel gas system. This will allow storage of organic materials with TVP ≥ 0.5 psia, in accordance with District Rule 4623. It is anticipated that the tank will be used to store naphtha, gasoline, and CARB spec diesel fuel as part of the Refinery's Clean Fuels Project. The tank will be connected to the refinery's VCS except when storing diesel fuel. Diesel fuel is adversely affected by contact with refinery fuel gas when connected to the refinery VCS. Saturation of the fuel by the low-flammability products such as, hydrogen, methane, and ethane, as well as contact with fairly large concentrations of hydrogen sulfide can result in a diesel product that is not within specification for flash point and sulfur content. CARB spec diesel requires a very low sulfur content. When diesel products are stored in this tank, the tank will be blinded off from the VCS and will operate "uncontrolled" utilizing only a pressure/vacuum relief valve (PVRV).

S-33-419-0, '-420-0, '-429-0: 525 bhp Diesel IC Engines Powering Firewater Pumps

The engines solely power emergency firewater pumps. With the upgrade of the facility, additional firefighting capability will be installed. Other than for emergency operation, each engine may be operated for limited maintenance and testing purposes.

S-33-423-0, '-424-0: 80,000 Bbl Fixed Roof or External Floating Roof Organic Liquid Storage Tank #80009

These two ATCs give authorization to construct Tank 80009 in either a fixed roof or external floating roof configuration. If constructed with a fixed roof, it will be connected to the refinery vapor control system. The proposed new tank is intended to provide storage for gasoline and CARB spec diesel fuel as part of the Refinery's Clean Fuels Project. If built as a fixed roof tank, and when diesel products are stored in this tank, the tank will be blinded off from the refinery VCS and operate "uncontrolled" utilizing only a pressure/vacuum relief valve (PVRV) for reasons described in S-33-67-4 above.

S-33-425-0, '-426-0: 20,000 Bbl Fixed Roof Organic Liquid Storage Tanks #20M01 & 20M02

Tanks 20M01 and 20M02 are existing fixed roof tanks that are currently permit exempt by Rule 2020, Section 6.6.5 due to exclusively storing materials with an initial boiling point >302 °F. The modified tanks will be connected to the refinery's existing VCS, which feeds into the refinery fuel gas system. This will allow storage of organic materials with true vapor pressure (TVP) ≥0.5 psia in accordance with District Rule 4623. The proposed tanks are intended to provide storage for gasoline and CARB spec diesel fuel as part of the Refinery's Clean Fuels Project. When diesel products are stored in this tank, the tank will be blinded off from the refinery VCS and operate "uncontrolled" utilizing only a pressure/vacuum relief valve (PVRV) for reasons described in S-33-67-4 above.

S-33-428-0, '-434-0: 80,000 Bbl Fixed Roof or External Floating Roof Organic Liquid Storage Tank #80M02

The proposed new tank, in either fixed roof or floating roof configuration, is intended to provide storage for process wastewater or other organic materials as part of the Refinery's Clean Fuels Project. The tank will be connected to the refinery's existing vapor control system. The tank may see service storing gasoline or diesel products. When diesel products are stored in this tank, the tank will be blinded off from the refinery VCS and operate "uncontrolled" utilizing only a pressure/vacuum relief valve (PVRV) for reasons described in S-33-67-4 above.

V. Equipment Listing

Pre-Project Equipment Description:

S-33-13-17: MILD HYDROCRACKER #14 INCLUDING 50 MMBTU/HR GAS FIRED CHARGE HEATER 14-H1, 40 MMBTU/HR GAS FIRED FEED HEATER 14-H2, REACTOR 14-R1, 4 SEPARATORS 14-D4/5, V6/9, FRACTIONATOR 14-V1, DIESEL STRIPPER 14-V4 AND MISC PUMPS, HEAT EXCHANGERS, PIPING AND VESSELS - AREA 1

- S-33-41-2: 3,360,000 GALLON FIXED ROOF PETROLEUM STORAGE TANK #80006 WITH VAPOR CONTROL SYSTEM SERVING TANKS S-33-42, S-33-46 AND MARKETING TERMINAL S-3303-1 WITH VAPOR COMPRESSORS, VAPOR HOLDING TANK, CONDENSATE TANK AND MISC. PUMPS, PIPING AND VESSELS
- S-33-67-1: 30,000 BBL FIXED ROOF PETROLEUM STORAGE TANK #30M02

Modifications:

- S-33-13-18: MODIFICATION OF MILD HYDROCRACKER #14 INCLUDING 50 MMBTU/HR GAS FIRED CHARGE HEATER 14-H1, 40 MMBTU/HR GAS FIRED FEED HEATER 14-H2, REACTOR 14-R1, 4 SEPARATORS 14-D4/5, V6/9, FRACTIONATOR 14-V1, DIESEL STRIPPER 14-V4 AND MISC PUMPS, HEAT EXCHANGERS, PIPING AND VESSELS - AREA 1: ADD SECOND STAGE REACTOR, HEAT EXCHANGER SURFACE, RECYCLE AND MAKE-UP HYDROGEN COMPRESSORS, AND MISC PIPING AND COMPONENTS
- S-33-41-4: MODIFICATION OF 80,000 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK #80006 WITH VAPOR CONTROL SYSTEM SERVING TANKS S-33-42, S-33-46 AND MARKETING TERMINAL S-3303-1 WITH VAPOR COMPRESSORS, VAPOR HOLDING TANK, CONDENSATE TANK AND MISC. PUMPS, PIPING AND VESSELS: INCREASE CONTROL EFFICIENCY TO 99%
- S-33-67-4: MODIFICATION OF 30,000 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK # 30M02: CONNECT TO REFINERY VAPOR CONTROL SYSTEM

Post-Project Equipment Description:

- S-33-13-18: MILD HYDROCRACKER #14 INCLUDING 50 MMBTU/HR GAS FIRED CHARGE HEATER 14-H1, 40 MMBTU/HR GAS FIRED FEED HEATER 14-H2, REACTOR 14-R1, SECOND STAGE REACTOR 4 SEPARATORS 14-D4/5, V6/9, FRACTIONATOR 14-V1, DIESEL STRIPPER 14-V4, RECYCLE AND MAKE-UP HYDROGEN COMPRESSORS AND MISC PUMPS, HEAT EXCHANGERS, PIPING AND VESSELS - AREA 1
- S-33-41-4: 3,360,000 GALLON FIXED ROOF PETROLEUM STORAGE TANK #80006 WITH VAPOR CONTROL SYSTEM SERVING TANKS S-33-42, S-33-46 AND MARKETING TERMINAL S-3303-1 WITH VAPOR COMPRESSORS, VAPOR HOLDING TANK, CONDENSATE TANK AND MISC. PUMPS, PIPING AND VESSELS
- S-33-67-4: 30,000 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK (# 30M02): CONNECT TO REFINERY VAPOR CONTROL SYSTEM

- S-33-419-0: 525 BHP CLARK MODEL JX6H-UF60 EMERGENCY DIESEL TIER 2 IC ENGINE (OR DISTRICT APPROVED EQUIVALENT) POWERING A FIREWATER PUMP
- S-33-420-0: 525 BHP CLARK MODEL JX6H-UF60 EMERGENCY DIESEL TIER 2 IC ENGINE (OR DISTRICT APPROVED EQUIVALENT) POWERING A FIREWATER PUMP
- S-33-423-0: 80,000 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK #80009 CONNECTED TO REFINERY VAPOR CONTROL SYSTEM
- S-33-424-0: 80,000 BBL EXTERNAL FLOATING ROOF ORGANIC LIQUID STORAGE TANK #80009
- S-33-425-0: 20,000 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK #20M01 CONNECTED TO REFINERY VAPOR CONTROL SYSTEM
- S-33-426-0: 20,000 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK #20M02 CONNECTED TO REFINERY VAPOR CONTROL SYSTEM
- S-33-428-0: 80,000 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK #80M02 CONNECTED TO REFINERY VAPOR CONTROL SYSTEM
- S-33-429-0: 525 BHP CLARK MODEL JX6H-UF60 EMERGENCY DIESEL TIER 2 IC ENGINE (OR DISTRICT APPROVED EQUIVALENT) POWERING A FIREWATER PUMP
- S-33-434-0: 80,000 BBL EXTERNAL FLOATING ROOF ORGANIC LIQUID STORAGE TANK #80M02

VI. Emission Control Technology Evaluation

The new and modified permitted equipment proposed in this part of the Clean Fuels Project will require the installation of numerous valves, flanges, connectors, pressure relief vents, pump and compressor seals and other components.

These components have fugitive VOC emissions.

Fugitive emissions from all existing and new components will be minimized by adoption of a leak detection and repair program (LDAR) that meets the requirements set forth in BACT Guidelines 7.2.2 and 7.2.3, Rule 4001 Subpart GGG, and District Rule 4455.

Mild Hydrocracker (MHC) 2nd Stage Reactor (S-33-13-18)

The only changes in emissions resulting from the modification of the existing MHC will be the addition of fugitive VOC emissions from piping components. These emissions will be controlled through the refinery's leak detection and repair (LDAR) program, which is compliant with District Rule 4455.

Fixed Roof Storage Tanks (S-33-41-4, '-67-4, '-423-0, '-425-0, '-426-0, '-428-0)

The fixed roof storage tanks will be connected to the refinery vapor control system providing 99% control efficiency for VOC vapors at the tank when not storing diesel fuel. (Note: '-423 will not be installed if '-424 is built. '-428 will not be installed if '-434 is built)

External Floating Roof Storage Tanks (S-33-424-0, '-434-0)

The external floating roof tank options for tanks 80009 and 80M02 will incorporate a mechanical shoe seal and secondary wiper, satisfying BACT. (Note: '-424 will not be installed if '-423 is built. '-434 will not be installed if '-428 is built)

Diesel IC Engine Powered Firewater Pumps S-33-419-0, '-420-0, '-429-0

The diesel engines installed for emergency fire pump power will satisfy the requirements of District BACT Guideline 3.1.4, including no greater than 6.9 grams NO_x/bhp-hr, no greater than 0.1 g PM₁₀/bhp-hr, and use of ultra low sulfur diesel fuel.

(See Appendix J for copies of applicable SJVAPCD BACT Guidelines)

VII. General Calculations

A. Assumptions

Mild Hydrocracker (S-33-13):

The MHC operates 24 hours per day

The increase in component counts (and fugitive VOC emissions) due to the proposed modification is estimated as 50% of the existing component counts (and fugitive VOC emissions) on the unit. This is proposed as a conservative estimate of component counts to be added; the design is not yet at a stage where actual component counts are known.

It is assumed that the leak rates for new components in the unit will be the same as for existing like components in the unit. Fugitive VOC emissions from existing components are calculated using leak measurements and the Correlation Equation Method as described in the CAPCOA publication *California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities* (February 1999). In this method, emissions are assigned to each component based on measured screening values. This method of calculation is in accordance with District Policy SSP 2015, "Procedures for Quantifying Fugitive VOC Emissions at Petroleum and SOCOMI Facilities." The spreadsheet for emission calculations is contained in Appendix G.

For calculation of hazardous air pollutant (HAP) emissions, conservative speciations were chosen to approximate the liquid and vapor phase streams within the unit, as follows:

- Liquid: Naphtha
- Vapor: Fuel Gas

Fixed roof storage tanks connected to vapor control (S-33-67, '-423, '-425, '-426, '-428):

The designs for the new tanks are not completed, and final component counts for the tank and VCS lines are not known. To estimate the finished component count, known component counts for several representative similarly-sized tanks connected to the VCS (Big West Refinery tanks 80005, 80006, 80007, and 80008) have been used as an estimate. To ensure that this estimation method yields a conservative estimate of emissions, the maximum number of each component type present on any of the representative tanks (e.g., valves in liquid service, valves in gas-phase service, etc.) are used for this tank; in addition, a contingency factor of 20% was applied.

The number of components within each screening value range was determined based on the historical leak rates at the refinery. It is assumed that the leak rates of the new fugitive components will be the same as historical leak rates at the facility. For representative historical leak rates, leak detection measurements for calendar year 2004 were compiled. Prior to Big West assuming ownership of the Rosedale refinery in 2005, the refinery was owned and operated by Shell Oil Company under the name Equilon Enterprises, LLC. 2004 is the most recent year for which process/storage tank fugitive component counts and leak criteria have been compiled into a database which can be used to predict component counts and leak rates of the new tanks to be installed and connected to the VCS. The percentage of components of each type that fell within each screening value range in the course of Leak Detection and Repair (LDAR) Program inspections in 2004 are presented in Appendix H1.

For calculation of hazardous air pollutant (HAP) emissions, gasoline and gasoline headspace speciations were used for the light liquid and vapor streams, respectively.

Fixed roof storage tanks storing diesel fuel uncontrolled (S-33-67, '-423, '-425, '-426, '-428):

Emissions from the tanks were calculated as uncontrolled breathing and working losses from the tanks. Breathing and working losses were estimated using EPA's TANKS 4.09d model. The default diesel profile in TANKS was used for the diesel properties and speciation. Throughput limits of one turnover per day and 365 turnovers per year of diesel were used. When calculated storage tank VOC emissions from uncontrolled diesel storage exceeds the calculated controlled VOC emissions from storage of other organic liquids in the tank, the higher emissions rate will be assessed for the daily emissions limit (DEL) and for the annual emissions, assuming a full year of storage under the higher emitting condition. (See Appendix H2 for diesel emissions calculations of fixed roof tank)

External Floating Roof Option for Tank 80009 and 80M02 (S-33-424-0, '-434-0):

Emissions from the tanks were calculated as a combination of fugitive emissions and losses from the tanks. Emissions from the tanks alone were estimated using EPA's TANKS 4.09d model. Fugitive component counts include piping to and from the tanks; emissions from components directly on the tank are included in the TANKS model emission estimate. Throughput limits of 80,000 bbl/day and 29,200,000 bbl/yr were used, and gasoline service was assumed for a conservative estimate of emissions. (See Appendix H for emissions calculations of floating roof tank)

Diesel powered emergency firewater pumps (S-33-419, '-420, '-429):

Non-emergency operation of the engine is limited to the number of hours necessary to comply with the testing requirements of National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems," 1998 edition (17 CCR §93115(e)(2)(A)(4)(a)(I)(ii)). This is assumed to be not more than 100 hours/year.

B. Emission Factors:

Fugitive component VOC emission factors are from the CAPCOA publication California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities (February 1999), Table IV-3a: CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals.

The TANKS 4.09d model utilizes emission factors and calculation methods for estimates of external floating roof tank and deck fitting emissions as outlined in AP-42, Chapter 7 (09/1997).

Fugitive VOC calculations for individual emissions units are contained in Appendices G-H.

525 bhp Clarke (or equivalent Tier 2) Diesel Powered Firewater Pumps (S-33-419, '-420, '-429)

Emission Factors		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO _x	4.67	Engine Manufacturer; Tier 2 certification
SO _x	0.0051	Mass Balance Equation Below
PM ₁₀	0.149	Tier 2 certification
CO	2.6	Tier 2 certification
VOC	0.13	Engine Manufacturer; Tier 2 certification

$$\frac{0.000015 \text{ lb} - \text{S}}{\text{lb} - \text{fuel}} \times \frac{7.1 \text{ lb} - \text{fuel}}{\text{gallon}} \times \frac{2 \text{ lb} - \text{SO}_2}{1 \text{ lb} - \text{S}} \times \frac{1 \text{ gal}}{137,000 \text{ Btu}} \times \frac{1 \text{ bhp input}}{0.35 \text{ bhp out}} \times \frac{2,542.5 \text{ Btu}}{\text{bhp} - \text{hr}} \times \frac{453.6 \text{ g}}{\text{lb}} = 0.0051 \frac{\text{g} - \text{SO}_x}{\text{bhp} - \text{hr}}$$

C. Emission Calculations

1. Pre-Project Potential to Emit (PE1)

For new emissions units, the PE1 = 0 lb/day for all criteria pollutants. For existing units the PE1 is as determined from baseline emissions (BE) or from existing permit based potential to emit for clean, fully offset, or highly utilized emissions units as described in District Rule 2201, Section 3.7.

Existing storage tank S-33-41-2 is not undergoing an NSR modification; therefore there is no change in emissions considered (PE2 - PE1 = 0) and the tank will not be considered for further calculations.

Prior to Big West assuming ownership of the Rosedale refinery in 2005, the refinery was owned and operated by Shell Oil Company under the name Equilon Enterprises, LLC. During 2004 and 2005, the Mild Hydrocracker (S-33-13) was operated by both Big West and Shell. Shell did not operate the Mild Hydrocracker under normal conditions because it had planned on shutting down the entire refinery. Therefore, maintenance affecting the performance of the process unit was deferred/cancelled. When Big West took over operations of the refinery in 2005, Big West continued to operate the Mild Hydrocracker the same as Shell -- in a curtailed operating state. Since 2005, Big West has performed the needed maintenance of the unit that was deferred by Shell and the unit is now operating closer to its "normal" condition. The baseline period selected for determining historical actual emissions (HAE) for the Mild Hydrocracker is the operating period of 2002 and 2003, just before Shell had begun to curtail operations of the unit. This time period is considered closer to "normal Operation" pursuant to Rule 2201, Section 3.8.

Existing storage tank S-33-67-1 is not a clean unit, fully offset, or a highly utilized unit. Additionally, it has not been used to store organic compounds with appreciable volatility in recent years, i.e. HAE = 0. For S-33-67-1, PE1 = BE = 0.

PE1 (lb/day)						
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC _{point}	VOC _{fug}
S-33-13-17	170.9	35.7	12.8	287.0	8.7	4.2
S-33-67-1	0.0	0.0	0.0	0.0	0.0	0.0
S-33-419-0	0.0	0.0	0.0	0.0	0.0	0.0
S-33-420-0	0.0	0.0	0.0	0.0	0.0	0.0
S-33-423-0	0.0	0.0	0.0	0.0	0.0	0.0
S-33-424-0	0.0	0.0	0.0	0.0	0.0	0.0
S-33-425-0	0.0	0.0	0.0	0.0	0.0	0.0
S-33-426-0	0.0	0.0	0.0	0.0	0.0	0.0
S-33-428-0	0.0	0.0	0.0	0.0	0.0	0.0
S-33-429-0	0.0	0.0	0.0	0.0	0.0	0.0
S-33-434-0	0.0	0.0	0.0	0.0	0.0	0.0
Totals	170.9	35.7	12.8	287.0	8.7	4.2

PE1 (lb/year)						
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC _{point}	VOC _{fug}
S-33-13-17	62,371	13,053	4,660	104,770	2,426	1,534
S-33-67-1	0	0	0	0	0	865
S-33-419-0	0	0	0	0	0	0
S-33-420-0	0	0	0	0	0	0
S-33-423-0	0	0	0	0	0	0
S-33-424-0	0	0	0	0	0	0
S-33-425-0	0	0	0	0	0	0
S-33-426-0	0	0	0	0	0	0
S-33-428-0	0	0	0	0	0	0
S-33-429-0	0	0	0	0	0	0
S-33-434-0	0	0	0	0	0	0
Totals	62,371	13,053	4,660	104,770	2,426	2,399

2. Post Project Potential to Emit (PE2)

Daily Post Project Emissions, Each Diesel IC Engine Firewater Pump (S-33-419, '-420, '-429)					
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hrs/day)	Conversion (g/lb)	PE2 (lb/day)
NO _x	4.67	525	24	453.6	129.7
SO _x	0.0051	525	24	453.6	0.1
PM ₁₀	0.149	525	24	453.6	4.1
CO	2.6	525	24	453.6	72.2
VOC	0.13	525	24	453.6	3.6

Annual Post Project Emissions, Each Diesel IC Engine Firewater Pump (S-33-419, '-420, '-429)					
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Annual Hours of Operation (hrs/yr)	Conversion (g/lb)	PE2 (lb/yr)
NO _x	4.67	525	100	453.6	541
SO _x	0.0051	525	100	453.6	1
PM ₁₀	0.149	525	100	453.6	17
CO	2.6	525	100	453.6	301
VOC	0.13	525	100	453.6	15

Emissions Summary Tables

PE2 (lb/day)						
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC _{point}	VOC _{fug}
S-33-13-18	170.9	35.7	12.8	287.0	8.7	6.3
S-33-67-4 [#]	0.0	0.0	0.0	0.0	9.0	0.0
S-33-419-0	129.7	0.1	4.1	72.2	3.6	0.0
S-33-420-0	129.7	0.1	4.1	72.2	3.6	0.0
S-33-423-0 ^{**}	0.0	0.0	0.0	0.0	23.8	0.0
S-33-424-0 [*]	0.0	0.0	0.0	0.0	0.0	52.5
S-33-425-0 [#]	0.0	0.0	0.0	0.0	5.9	0.0
S-33-426-0 [#]	0.0	0.0	0.0	0.0	5.9	0.0
S-33-428-0 ^{**}	0.0	0.0	0.0	0.0	23.8	0.0
S-33-429-0	129.7	0.1	4.1	72.2	3.6	0.0
S-33-434-0 [*]	0.0	0.0	0.0	0.0	0.0	52.5
Totals	560.0	36.0	25.1	503.6	87.9	111.3

PE2 (lb/year)						
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC _{point}	VOC _{fug}
S-33-13-18	62,371	13,053	4,660	104,770	2,426	2,301
S-33-67-4 [#]	0	0	0	0	3,269	0
S-33-419-0	541	1	17	301	15	0
S-33-420-0	541	1	17	301	15	0
S-33-423-0 ^{**}	0	0	0	0	8,681	0
S-33-424-0*	0	0	0	0	0	13,710
S-33-425-0 [#]	0	0	0	0	2,166	0
S-33-426-0 [#]	0	0	0	0	2,166	0
S-33-428-0 ^{**}	0	0	0	0	8,681	0
S-33-429-0	541	1	17	301	15	0
S-33-434-0*	0	0	0	0	0	13,710
Totals	63,994	13,056	4,711	105,673	27,434	29,721

* Tanks 80009 and 80M02 will either be installed as an 80,000 bbl fixed roof tank (S-33-423-0, '-428-0) or as an 80,000 bbl external floating roof tank (S-33-424-0, '-434-0). The higher values will be used to determine net emissions increase (NEI)

[#] Daily and annual emissions based on uncontrolled storage of diesel fuel which is higher than controlled VOC emissions from storage of other organic liquids

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

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

The District and the applicant agree that the facility has pre project emissions potentials above the offset and Major Source thresholds levels for all criteria pollutants; therefore, SSPE1 calculations are not necessary.

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

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

The District and the applicant agree that the facility has pre project emissions potentials above the offset and Major Source thresholds levels for all criteria pollutants, and all increases in permitted emissions will be offset. Therefore, SSPE2 calculations for the entire facility are not necessary.

5. Major Source Determination

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

The District and the applicant agree that the facility has pre project emissions potentials above the Major Source thresholds levels for all affected pollutants. As this part of the Clean Fuels Project increases the potentials for all pollutants, the facility will remain above all Major Source threshold levels.

6. Baseline Emissions (BE)

This part of the Clean Fuels Project proposes the installation of seven new emissions/permit units and modification of two emissions/permit units. Baseline emissions for new units are 0 lb/day for all pollutants. Because Big West is a major source for all pollutants, Baseline emissions (BE) for each of the modified emissions units is based on the historical actual emissions as none of these units are considered clean, fully offset, or highly utilized units.

7. Major Modification

As defined in 40 CFR 51.165 (in effect on December 19, 2002), a Major Modification means 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 (NEI) of any pollutant subject to regulation under the Act. For administrative purposes the "Clean Fuels Project" has been assigned three District project numbers: S1061149, S1062741, and S1062742.

All three of these District “projects” are considered one project for Major Modification and Federal Major Modification purposes.

The significance levels for all non-attainment pollutants and their precursors are listed in the table below. Also listed are the net emissions increases for each District project, and the total for the Clean Fuels Project. As shown below, the Clean Fuels Project is a major modification for NO_x, SO_x, PM₁₀, and VOC.

Major Modification Net Emission Increases (NEI)						
Pollutant	Threshold (lb/year)	S1061149 (lb/year)	S1062741 (lb/year)	S1062742 (lb/year)	Clean Fuels Project (lb/year)	Major Mod ?
NO _x	50,000	125,948	0	1,623	127,571	Yes
SO _x	80,000	165,138	0	3	165,141	Yes
PM ₁₀	30,000	111,398	0	51	111,449	Yes
VOC	50,000	158,201	5,812	34,968	198,981	Yes

8. Federal Major Modification

As discussed above in VII C. 7., the project is a Major Modification. Major Modifications are also Federal Major Modifications unless they meet the criteria in either 3.17.1, “Less Than Significant Emissions Increase Exclusion” or 3.17.2, “Plant wide Applicability Limit” (PAL).

The Clean Fuels Project does not qualify for the exclusion set forth in 3.17.1 as the emissions increases are significant. There are no emissions decreases from existing equipment and the emissions increases from the new equipment exceed the thresholds in Table 3-1.

The Clean Fuels Project does not qualify for the exclusion set forth in 3.17.2, as the facility is not currently subject to a PAL for any regulated pollutant for the stationary source (Areas 1 and 2 combined). The project, therefore, is a Federal Major Modification.

9. Quarterly Net Emissions Change (QNEC)

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

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

District Rule 2201 Section 4.1 requires that BACT be applied to any unit with an IPE of any affected pollutant of greater than 2 lb/day. Additionally, Section 4.1.3 requires BACT be applied to any new or modified emissions unit, in a stationary source project, which results in a Major Modification, as defined in Rule 2201. These units are part of a Major Modification stationary source project. Therefore, BACT is required for all modified emissions units that are part of this part of the Clean Fuels Project.

2. BACT Guidelines

See Appendix J for all applicable SJVAPCD BACT Guidelines.

Fugitive Components

BACT Guidelines 7.2.2 (Petroleum Refining – Valves and Connectors) and 7.2.3 (Petroleum Refining – Pump and Compressor Seals) apply to the fugitive components being installed for adding the second reactor vessel to the mild hydrocracker.

Emergency firewater pump engines

BACT Guideline 3.1.4 (Emergency Diesel I.C. Engine Driving a Fire Pump) applies to the three 525 bhp emergency firewater pump engines being installed.

Organic Liquid Storage Tanks

BACT Guideline 7.3.2 (Petroleum and Petrochemical Production - Fixed Roof Organic Liquid Storage or Processing Tank, $\geq 5,000$ bbl Tank capacity) applies to the fixed roof storage tanks being installed or modified that will be permitted to store gasoline and other organic liquids.

If Tank #80009 and/or tank 80M02 is built as an external floating roof tank option (S-33-424-0 or S-33-434-0) instead of a fixed roof tank (S-33-423-0 or S-33-428-0), then BACT Guideline 7.3.3 (Petroleum and Petrochemical Production - Floating Roof Organic Liquid Storage or Processing Tank, ≥ 471 bbl Tank capacity, ≥ 0.5 psia TVP) will apply.

New BACT Guideline 7.3.4 (Fixed Roof Variable Product Petroleum Storage Tank With Vapor Control and Gas Blanketing Except When Storing Diesel Fuel) applies to the fixed roof storage tanks being installed or modified in this part of the Clean Fuels Project that will be connected to the refinery VCS except when these tanks are storing diesel fuel.

3. Top-Down BACT Analysis

A top-down BACT analysis was conducted for each new or modified emissions unit proposed in this part of the Clean Fuels Project, in accordance with the procedures established in the District's BACT Policy. This top-down analysis identified emissions controls and limits that satisfied BACT requirements and which will be required for this part of the Clean Fuels Project. The applicant has proposed emissions controls and limits that were identified as BACT.

The Top down BACT analyses are included as Appendix J; the emissions controls and emissions limits identified as BACT are summarized below:

Fugitive Components (S-33-13)

VOC: Leak defined as 100 ppmv above background (valves and connectors) or 500 ppmv above background (compressor and pump seals), when measured at distance of 1 cm from the source, and adoption of Inspection and Maintenance Program meeting the requirements of District Rule 4455.

Emergency firewater pump engines (S-33-419, '-420, '-429)

NO_x: Emissions of 6.9 g/bhp-hr or less
SO_x: Very Low-sulfur diesel fuel (15 ppmw sulfur or less) has been determined to be available in the District.
PM10: 0.149 grams/bhp-hr or less
CO: Emissions of 2.6 g/bhp-hr or less
VOC: Emissions of 0.13 g/bhp-hr or less

Organic Liquid Storage Tanks (S-33-67, '-423, '-424 '-425, '-426, '-428)

Fixed roof tanks (S-33-67, '-423, '-425, '-426, '-428)

VOC: 99% control; Transfer of noncondensable vapors to refinery vapor control/fuel gas system. For storage tanks that will be used to store both gasoline and diesel fuel at different times, BACT is use of PVRV when storing CARB spec diesel fuel and vapor control system with transfer of noncondensable vapors to refinery vapor control/fuel gas system when not storing CARB spec diesel fuel.

Floating roof tanks (S-33-424, '-434)

VOC: 95% Control; Dual wiper seal with drip curtain or primary metal shoe seal with secondary wiper seal, or equal meeting specified gap criteria.

B. Offsets

1. Offset Applicability

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

The District and the applicant agree that emissions potential of the Big West Stationary Source for each affected pollutant exceeds the respective offset threshold level for that pollutant, and that offsets are required for each affected pollutant for the emissions increases proposed in this part of the Clean Fuels Project.

2. Quantity of Offsets Required

Per Sections 4.7.1 and 4.7.3, the quantity of offsets in pounds per year for each affected pollutant are 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

Shown below are the emissions increases, the DOR and the offset quantities required for this part of the Clean Fuels Project, and the ERC certificate that the applicant has proposed to provide offsets. The certificate represents emissions reductions generated at the same stationary source, and will, therefore, be used at DOR of 1.0 to 1.0.

Pursuant to Rule 2201, Section 4.6.2, The emergency firewater pumps are exempt from offsets. Therefore, only increases in VOC emissions resulting from the new and modified organic liquid storage tanks and the increase in fugitive VOC emissions from adding the second stage reactor to the mild hydrocracker will need to be offset as shown below:

VOC Offset Quantities and Proposed ERC (lb/qtr)				
	Q1	Q2	Q3	Q4
Distance Offset Ratio	1.0	1.0	1.0	1.0
S-33-13-18	192	192	192	192
S-33-67-4	601	601	601	601
S-33-423-0*	2,170	2,170	2,170	2,170
S-33-424-0*	3,427	3,427	3,428	3,428
S-33-425-0	541	541	542	542
S-33-426-0	541	541	542	542
S-33-428-0	2,170	2,170	2,170	2,170
S-33-434-0*	3,427	3,427	3,428	3,428
TOTAL (with tanks 80009 & 80M02 as floating roof tanks S-33-424-0, -434-0)	13,069	13,069	13,073	13,073
ERC S-2452-1	53,758	54,557	54,966	54,874

*Tanks 80009 and 80M02 will be built as either an 80,000 bbl fixed roof tank (S-33-423, 428) or an 80,000 bbl external floating roof tank (S-33-424, 434)

As seen above, the facility has sufficient credits with ERC banking certificate S-2452-1 to fully offset the emissions increases associated with this part of the Clean Fuels Project.

C. Public Notification

1. Applicability

Public noticing is required for any of the following:

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

As a major modification, the Clean Fuels Project requires public noticing. In addition, this part of the Clean Fuels Project authorizes emissions increases of more than 100 lb/day for new emissions units, which also triggers public noticing requirements.

Therefore, public notice documents will be submitted to the California Air Resources Board (CARB), and a public notice will be published in a local newspaper of general circulation prior to the issuance of the approvals for the proposed equipment and modifications.

D. Daily Emission Limits (DELs)

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Section 3.17 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.17.1 and 3.17.2, the DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

DELs have been added as enforceable permit conditions for each permit unit approved in this part of the Clean Fuels Project.

E. Compliance Assurance

1. Source Testing

Mild Hydrocracker

In addition to the ongoing source testing and monitoring of the existing heaters and screening the existing fugitive VOC components, the new fugitive components will be added to the fugitive components monitored by Big West's I&M Program.

Organic Liquid Storage Tanks

When organic liquid storage tanks are connected to a vapor control system at all times, they are not required by District Rule 4623, "Organic Liquid Storage" to perform any source testing or sampling. Diesel fuel, as listed in Rule 4623, Appendix A, does not require sampling or testing.

Emergency Diesel Firewater Pump Engines

Emergency engines are not required to be source tested provided they don't exceed the allowable hours for maintenance and testing and appear to be operating normally during Compliance inspections.

2. Monitoring

Mild Hydrocracker

In addition to the ongoing source testing of the existing heaters and screening the existing fugitive VOC components, the new fugitive components will be added to the fugitive components monitored by Big West's I&M Program.

Organic Liquid Storage Tanks

Monitoring of organic liquid storage tanks on vapor control is not required.

Emergency Diesel Firewater Pump Engines

Monitoring of emergency engines is not required.

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201.

To satisfy Rule 2201 requirements, the permittee will be required to maintain records of the result of all source tests, emissions monitoring, including fugitive VOC components,, amounts of fuel and waste gas combusted, fuel sampling for sulfur and BTU content, hours of operation for emergency engines, and changeovers in organic liquid storage tanks from gasoline to diesel and back.

Records shall be maintained, retained on-site for a period of at least five years and made available for District inspection upon request.

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201. 40 CFR Part 60 Subpart Section 60.49b paragraph (h)(2) requires that the owner submit quarterly excess emission reports for any calendar quarter during which there are excess emissions. It also requires semiannual reports stating that there have been no excess emissions during periods when there have been no excess emissions. Such reporting will be required and will satisfy the reporting requirements for Rule 2201. No additional reporting is required.

F. Ambient Air Quality Analysis

Section 4.14.2 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. The Technical Services Division of the SJVAPCD conducted the required analysis for the entire Clean Fuels Project including the new and modified items included with this sub-project. Refer to Appendix F of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO_x, CO, and SO_x. As shown below in the AAQA summary table, the proposed equipment will not cause a violation of an air quality standard for NO_x, CO, or SO_x.

The proposed location is in a non-attainment area for PM₁₀. The increase in the ambient PM₁₀ concentration due to the proposed equipment is shown summary table below and, as the calculated contribution of PM₁₀ will not exceed either the annual or 24-hour EPA significance level, this part of the Clean Fuels Project is not expected to make worse a violation of an air quality standard.

Pollutant	Avg Per	Max Imp	Back Conc	Total Conc	CAAQS	NAAQS
NO _x	1h	232.21	156.26	388	470	N/A
	Ann	0.56	35.77	36	N/A	100
CO	1h	181.31	3550	3731	23,000	40,000
	8h	43.73	2061.24	2105	10,000	10,000
SO _x	1h	122.42	46.76	172	655	N/A
	3h	38.30	23.57	62	N/A	1300
	24h	3.42	7.86	11.3	105	365
	Ann	0.74	2.62	3.4	N/A	80
PM ₁₀	24h	2.84 ¹	205	207.84	50	150
	Ann	0.43 ¹	63	63.43	20	50

¹The PM₁₀ increases are below EPA's significant impact levels of; 5.0 µg/m³ for the 24 hour averaging period and 1.0 µg/m³ for the annual averaging period. Source: 40 CFR Part 51.165 (b)(2).

G. Compliance Certification

Section 4.14.3 of this Rule requires that the owner of a source undergoing a 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 this part of the Clean Fuels Project constitutes a major modification, this requirement compliance certification is applicable. Big West of California LLC has submitted the required compliance certification, a copy of which is included as Appendix E.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this rule, and has received a Title V Operating Permit. The proposed modification is a significant permit modification to the Title V Permit pursuant to Section 3.29 of this rule. As discussed above, the facility has applied for a Certificate of Conformity (COC) to be issued with the Authority to Construct. . When issued, the Authority to Construct with Certificate of Conformity will serve as the final Part 70 permit amendment issued by the District for the requested modifications. The facility will 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.

Rule 4001 New Source Performance Standards

This rule incorporates the New Source Performance Standards from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR).

Subpart Ka, "Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984"

Existing storage tank S-33-41 was constructed after May 18, 1978 and prior to July 23, 1984. Therefore, the requirements of this Subpart continue to apply.

Subpart Kb, "Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984"

The provisions of this subpart are applicable to each storage vessel with a capacity greater than or equal to 75 cubic meters (m³) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.

Each of the new tanks being constructed and the existing tanks being modified or permitted to store gasoline (S-33-67, '-423, '-424, '-425, '-426, '-428, '-434) will be subject to this subpart. Compliance with Subpart Kb requirements is expected.

Subpart J – Standards of Performance for Petroleum Refineries

The provisions of this subpart are applicable to the following affected facilities in petroleum refineries: fluid catalytic cracking unit catalyst regenerators, fuel gas combustion devices, and all Claus sulfur recovery plants except Claus plants of 20 long tons per day (LTD) or less.

Process Heaters S-33-13

The heaters are not being modified and there will be no changes to the applicability of this Subpart.

Subpart GGG – Standards of Performance for Equipment Leaks of VOC at Petroleum Refineries

Subpart GGG applies to refining process units constructed, modified, or reconstructed after January 4, 1983. Two types of affected facilities are regulated under Subpart GGG: 1) an individual compressor, and 2) all fugitive emission components within a refining process unit (i.e., all valves, pumps, pressure relief devices, sampling connections, flanges and other connections). Modifications to the mild hydrocracker S-33-13 are subject to Subpart GGG. Subpart GGG requires minimum performance specifications, routine inspection, and repair of all such fugitive components consistent with §§ 60.482-1 through 60.481-10 under NSPS Subpart VV (NSPS LDAR Program). The Bakersfield Refinery LDAR program complies with District regulations and is more stringent than the NSPS LDAR program (see Rule 4451 - Valves, Pressure Relief Valves, Flanges, Threaded Connections and Process Drains at Petroleum Refineries and Chemical Plants; Rule 4452 - Pump and Compressor Seals at Petroleum Refineries and Chemical Plants., and Rule 4455 - Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants). The Bakersfield refinery will also comply with the Subpart GGG performance testing (§60.485), recordkeeping (§60.486), and reporting requirements (§60.487).

The requirements set forth in §§60.482–1 to 60.482–10 will be listed as enforceable permit conditions on S-33-13. Compliance with Subpart GGG requirements is expected.

40 CFR Part 60 Subpart QQQ – Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems

There are no new or modified wastewater systems with this part of the Clean Fuels Project.

Rule 4002 National Emission Standards for Hazardous Air Pollutants

NESHAP for Equipment Leaks (Fugitive Emission Sources) of Benzene (40 CFR Part 61, Subpart J)

Part 61, Subpart J applies to specific sources of fugitive emissions in "benzene service," which is defined to mean "that a piece of equipment either contains or contacts a fluid that is at least 10 percent benzene by weight." The proposed new storage tanks and existing tanks being permitted or modified for gasoline service will contain < 10% benzene by weight. Therefore, Subpart J does not apply.

NESHAP for Equipment Leaks (Fugitive Emission Sources) (40 CFR Part 61, Subpart V)

Part 61, Subpart V applies to specific sources of fugitive emissions in "volatile hazardous air pollutant (VHAP) service," which is defined to mean "that a piece of equipment either contains or contacts a fluid that is at least 10 percent by weight a VHAP." VHAP is defined to include only benzene and vinyl chloride. The proposed new storage tanks and existing tanks being permitted or modified for gasoline service will contain < 10% benzene by weight. Therefore, Subpart V does not apply.

NESHAP for Benzene Waste Operations (40 CFR Part 61, Subpart FF)

Part 61, Subpart FF applies to all petroleum refineries (among other sources), regardless of the quantity of benzene processed. Refinery operators must determine the Total Annual Benzene (TAB) generated, as prescribed under §61.342(a). With the addition of the Clean Fuels Project, the TAB will exceed 10 Mg/yr, and the contiguous Area 1 and Area 2 facility will become subject to the Subpart FF work practice and emissions standards. The facility will be subject to the work practice and emissions standards of Subpart FF upon initial start-up of the new Clean Fuels Project components, and the refinery will comply with the provisions of §61.342(e) (i.e., maintain total benzene quantity (TBQ) less than 6 Mg/yr).

NESHAP for Source Categories (40 CFR Part 63)

Under the Clean Air Act Amendments of 1990, the EPA was directed to establish NESHAP for specific classes or categories of sources with the potential to emit 10 or more tons/year of a single Hazardous Air Pollutant (HAP), or 25 tons/year of any combination of HAPs. This facility is not subject to the 40 CFR Part 63 NESHAPs, because its facility-wide potential to emit HAPs falls below the 10/25 thresholds. For the facility, HAP emissions are limited via a federally-enforceable permit condition to below threshold values. With the addition of the Clean Fuels Project units, HAP emissions will remain below the relevant thresholds.

Rule 4101 Visible Emissions

This rule limits the discharge to the atmosphere of emissions of any air contaminant, other than uncombined water vapor, for a period or periods aggregating more than three (3) minutes in any one (1) hour which is as dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines.

The existing hydrocracker process heaters and the emergency firewater pump diesel engines have the potential for visible emissions. However, the heaters are well controlled and are not expected to have emissions exceeding Ringelmann No. 1 (20% opacity) for more than 3 minutes in any one hour. The diesel engines are new and, although diesel engines tend to fire up with a short burst of black smoke, they are not expected to exceed the three minute limit. Compliance with requirements of this rule is expected.

Rule 4102 Nuisance

Section 4.0 prohibits discharge of air contaminants that 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 installed, operated and maintained as per the requirements set forth on the Authority to Construct permits. 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.

The District's Technical Services staff completed a risk management review (RMR) for the entire Clean Fuels Project, which includes the new and modified equipment handled with this an individual project. The results of which are summarized below. The complete RMR report is included as Appendix F.

Conclusion

In accordance with the District's Risk Management Policy, APR 1905, the project is approvable, as the impact of the emissions increases from the project are below the significance levels, i.e., acute and chronic indices are below 1.0 and maximum individual cancer risk for the facility including the Clean Fuels Project is less than 10 in a million. Further, the project is approvable without Toxic Best Available Control Technology (T-BACT), as the maximum individual cancer risk for each emissions unit is less than 1 in a million.

Rule 4201 Particulate Matter Concentration

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot.

Diesel Fired Emergency Engines

Particulate matter emissions from the engine will be less than or equal to the rule limit of 0.1 grain per cubic foot of gas at dry standard conditions as shown by the following:

Note: Adjust the following equation for the specific PM₁₀ emission factor for the engine(s) involved with this part of the Clean Fuels Project. Add more calculations for multiple engines.

$$0.149 \frac{g - PM_{10}}{bhp - hr} \times \frac{1g - PM}{0.96g - PM_{10}} \times \frac{1bhp - hr}{2,542.5 Btu} \times \frac{10^6 Btu}{9,051 dscf} \times \frac{0.35 Btu_{out}}{1 Btu_{in}} \times \frac{15.43 grain}{g} = 0.0364 \frac{grain - PM}{dscf}$$

Since 0.0364 grain-PM/dscf is ≤ to 0.1 grain per dscf, compliance with Rule 4201 is expected.

Rule 4305 Boilers, Steam Generators and Process Heaters – Phase 2

The existing mild hydrocracker process heaters, which are not being modified in this part of the Clean Fuels Project, are refinery fuel gas-fired and each has a maximum heat input exceeding 5 MM Btu/hr. Continued compliance with this rule is expected.

Rule 4306 Boilers, Steam Generators and Process Heaters – Phase 3

The existing mild hydrocracker process heaters, which are not being modified in this part of the Clean Fuels Project, are refinery fuel gas-fired and each has a maximum heat input exceeding 5 MM Btu/hr. Continued compliance with this rule is expected.

Rule 4351 Boilers, Steam Generators and Process Heaters – Phase 1

The existing mild hydrocracker process heaters, which are not being modified in this part of the Clean Fuels Project, are refinery fuel gas-fired and each has a maximum heat input exceeding 5 MM Btu/hr. Continued compliance with this rule is expected.

Rule 4454 Refinery Process Unit Turnaround

This rule establishes requirements for the depressurization of process units prior to engaging in a turnaround of that unit. The operator has successfully followed process unit turnaround requirements for the units currently operated at the Big West refinery and is required to adopt the same requirements for the 2nd stage reactor vessel being installed as part of the “Clean Fuel Project”. These requirements are set forth below:

The operators shall not depressurize any vessel containing VOCs unless the process unit turnaround is accomplished by employing one of the following operating procedures: The organic vapors shall either be recovered, added to the refinery fuel gas system and combusted; or controlled and piped to an appropriate firebox or incinerated for combustion; or flared, until the pressure within the process vessel is as close to atmospheric pressure as is possible. All process vessels shall be depressurized into the control facilities to less than 1020 mm Hg (5 psig) before venting/opening to atmosphere. All organic compounds which emerge from a refinery process vessel during the purging of said vessel and which otherwise would be emitted to the atmosphere shall be either directed to a flare or incinerator or shall be used for fuel until such disposition of emissions is not technically feasible or is less safe than atmospheric venting. Continued compliance is expected.

Rule 4455 Components at Petroleum Refineries, Gas Liquids Processing Facilities, and Chemical Plants

The purpose of this rule is to limit VOC emissions from leaking components at petroleum refineries, gas liquids processing facilities, and chemical plants. This rule establishes requirements for leak definition, leak detection and leak minimization requirements for all components that contain or contact VOC.

The operator has successfully implemented an operator management plan for the refinery for the current roster of components in VOC service. As required by this rule, the operator management plan submitted by Big West was reviewed and approved by the District. Big West is required to update the operator management plan to include the components in VOC service on the new tanks and mild hydrocracker 2nd stage reactor being added to implement the "Clean Fuels Project" and to submit the updated plan for District approval.

An operator may not use any component that leaks in excess of the applicable leak criteria established by the rule, with the exception of components identified with a tag for repair within the applicable time period specified in this rule. Minor and major gas and liquid leaks are defined and leak standards are established for the following component types: flanges, valves, threaded connections, pumps, compressor, pressure relief devices, pipes and other. The rule establishes inspection, re-inspection and maintenance requirements for components.

To enforce this rule, the District has developed a standard set of permit conditions that set forth the requirements of the rule. This set of conditions will be included on the permit for each emissions unit having components in VOC service. Compliance with this rule is expected.

Rule 4623 Storage of Organic Liquids

The purpose of this rule is to limit volatile organic compound (VOC) emissions from the storage of organic liquids. This rule applies to any tank with a design capacity of 1,100 gallons or greater used to store organic liquid.

This rule requires all crude oil and petroleum storage and processing tanks larger than 39,600 gallons (943 barrels), that are not operated by a small oil producer, and are storing organic liquids with a true vapor pressure (TVP) greater than 0.5 psia, to be served by an APCO approved vapor control system capable of at least 95% control efficiency and be maintained leak-free. Tanks connected to a VCS are not required to monitor and keep records of API gravity, TVP, and actual storage temperature of organic liquids stored.

Big West is proposing to install new tanks, permit existing previously permit exempt tanks, and modify the service of one existing permitted tank. All new or modified tanks are expected to store gasoline and will be connected to the refinery vapor control system with a 99% control efficiency. The storage tanks may also be used to store CARB spec diesel fuel without being connected to the vapor control system. Compliance is expected.

Rule 4701 Internal Combustion Engines – Phase 1

Pursuant to Section 7.5.2.3 of District Rule 4702, as of June 1, 2006 District Rule 4701 is no longer applicable to diesel-fired emergency standby or emergency IC engines. Therefore, this diesel-fired emergency IC engine will comply with the requirements of District Rule 4702 and no further discussion is required.

Rule 4702 Internal Combustion Engines – Phase 2

This rule applies to any internal combustion engine with a rated brake horsepower greater than 50 horsepower.

Pursuant to Section 4.3, except for the requirements of Section 6.2.3, the requirements of this rule shall not apply to an internal combustion engine that meets the following conditions:

1. The engine is operated exclusively to preserve or protect property, human life, or public health during a disaster or state of emergency, such as a fire or flood, and
2. Except for operations associated with Section 4.3.1.1, the engine is limited to operate no more than 100 hours per calendar year as determined by an operational nonresettable elapsed operating time meter, for periodic maintenance, periodic readiness testing, and readiness testing during and after repair work of the engine, and
3. The engine is operated with a nonresettable elapsed operating time meter. In lieu of installing a nonresettable time meter, the owner of an engine may use an alternative device, method, or technique, in determining operating time provided that the alternative is approved by the APCO. The owner of the engine shall properly maintain and operate the time meter or alternative device in accordance with the manufacturer's instructions.

Therefore, the emergency IC engine involved with this part of the Clean Fuels Project will only have to meet the requirements of Section 6.2.3 of this Rule.

Section 6.2.3 requires that an owner claiming an exemption under Section 4.3 shall maintain annual operating records. This information shall be retained for at least five years, shall be readily available, and submitted to the APCO upon request and at the end of each calendar year in a manner and form approved by the APCO. Therefore, the following conditions will be listed on the ATC to ensure compliance:

- {3488} This engine shall be operated only for maintenance, testing, required regulatory purposes, and during emergency situations. For testing purposes, the engine shall only be operated the number of hours necessary to comply with the testing requirements of the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems", 1998 edition. Total hours of operation for all maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rule 4702 and 17 CCR 93115]
- {3489} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, and the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.). For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]
- {3475} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115]

In addition, the following condition will be listed on the ATC to ensure compliance with the annual test hours limit:

- {3404} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]

Rule 4801 Sulfur Compounds

A person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: 0.2 % by volume calculated as SO₂, on a dry basis averaged over 15 consecutive minutes. The process heaters of permit unit S-33-13 are not being modified. Continued compliance 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.

Title 13 California Code of Regulations (CCR), Section 2423 – Exhaust Emission Standards and Test Procedures, Off-Road Compression-Ignition Engines and Equipment (Required by Title 17 CCR, Section 93115 for New Emergency Diesel IC Engines)

Particulate Matter and VOC + NO_x, and CO Exhaust Emissions Standards:

This regulation stipulates that off-road compression-ignition engines shall not exceed the following applicable emissions standards.

Title 13 CCR, Section 2423 lists a diesel particulate emission standard of 0.15 g/bhp-hr (with 1.341 bhp/kW, equivalent to 0.20 g/kW-hr) for 2001 - 2005 model year engines with maximum power ratings of 301.7 - 603.4 bhp (equivalent to bhp 225 - 450 kW). The PM standards given in Title 13 CCR, Section 2423 are less stringent than the PM standards given in Title 17 CCR, Section 93115 (ATCM), thus the ATCM standards are the required standards and will be discussed in the following section.

Title 17 CCR, Section 93115, (e)(2)(A)(3)(b) stipulates that new stationary emergency diesel-fueled CI engines (> 50 bhp) must meet the VOC + NO_x, and CO standards for off-road engines of the same model year and maximum rated power as specified in the Off-Road Compression-Ignition Engine Standards (Title 13 CCR, Section 2423) or the Tier 1 standards for an off-road engine if no standards have been established for an off-road engine of the same model year and maximum rated power.

In addition, Title 17 CCR, Section 93115, (e)(2)(A)(4)(a)(II) allows new direct-drive emergency fire pump engines to meet the Off-Road Compression Ignition Engine Standards for off-road engines with the same maximum rated power (title 13 CCR, section 2423) three years after the date the standards are applicable for off-road engines with the same maximum rated power, i.e., only required to meet Tier 2 standards for up to three years after Tier 3 standards are applicable. For this engine rating, Tier 3 standards apply starting in 2006. Therefore, the proposed emergency diesel IC engine will have to meet the Tier 2 emission standards specified in the Off-Road Compression Ignition Engine Standards for off-road engines on the applicable dates specified.

The engines involved with this part of the Clean Fuels Project are a certified 2005 Tier 2 model. The following table compares the requirements of Title 13 CCR, Section 2423 to the emissions factors for the 525 bhp Clarke model JX6H-UF60 (or equivalent).

Requirements of Title 13 CCR, Section 2423							
Source	Maximum Rated Power	Model Year	NO _x	VOC	NO _x + VOC	CO	PM
Title 13 CCR, §2423	301.7 – 603.4 bhp (225 - 450 kW)	2001-2005 (Tier 2)	--	--	4.8 g/bhp-hr (6.4 g/kW-hr)	2.6 g/bhp-hr (3.5 g/kW-hr)	0.15 g/bhp-hr (0.20 g/kW-hr)
Proposed Clarke Model JX6H-UF60	525 bhp	2005	-	-	4.8 g/bhp-hr	2.6 g/bhp-hr	0.149 g/bhp-hr
Meets Standard?			N/A	N/A	Yes	Yes	Yes

As presented in the table above, the proposed engine will satisfy the requirements of this section and compliance is expected.

California Environmental Quality Act (CEQA)

The District determined that the Kern County (County) is the public agency having principal responsibility for approving the project, therefore establishing the County as the Lead Agency (CEQA Guidelines §15051(b)). The County has prepared a re-circulated Draft Environmental Impact Report (DEIR) for the project (SCH 2005121041) which demonstrates that the project would have a cumulatively significant and unavoidable impact on air Quality. The County will be receiving public comment on the proposed project and DEIR until August 11, 2008. Please direct all comments concerning the DEIR to Kern County Planning Department, 2700 M Street, Suite 100, Bakersfield, CA 93301-2323.

The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). As a Responsible Agency the District complies with CEQA by considering the EIR prepared by the Lead Agency, and by reaching its own conclusion on whether and how to approve the project involved (CEQA Guidelines §15096). If the County approves the project and certifies the EIR, the District will complete its review of the project, and comply with CEQA Guidelines §15096 requirements.

Federal NSR Requirements for PM_{2.5} – 40 CFR Part 51 Appendix S

Federal NSR requirements for PM_{2.5} were recently codified in 40 CFR 51.165 Appendix S and became effective as of 7/15/08. These new requirements apply to new major sources and major modifications for PM_{2.5}.

Big West's applications were deemed complete in 2006, i.e. prior to 7/15/08.

Rule 2201 - New and Modified Stationary Source Review section 2.0 states "... The requirements of this rule in effect on the date the application is determined to be complete by the Air Pollution Control Officer (APCO) shall apply to such applications.". In other words, this section clearly states that the version of Rule 2201 in effect when an application is deemed complete applies to such applications. Please note that this is a long standing provision in Rule 2201 and has been approved by EPA.

Notwithstanding the above, the preamble to the Appendix S regulation for PM2.5 (73 FR 28342) states "... we do not believe it appropriate to allow grandfathering of pending permits pending permits being reviewed under the PM10 surrogate program in nonattainment areas ...". In other words, EPA believes that applications that are pending as of 7/15/08 should be subject to the Appendix S requirements for PM2.5. Please note that the above preamble citation does not state that it is mandatory for pending applications to be subject to Appendix S.

Furthermore, the text of the Appendix S does not address applications that are pending at the time the new requirements for PM2.5 were codified in Appendix S.

While Appendix S does not address the applicability of the requirements for PM2.5, Section I – Introduction provides some direction on how Appendix S requirements are to be implemented for pending applications.

Excerpt from Section I – Introduction:

For each area designated as exceeding a NAAQS (nonattainment area) under 40 CFR part 81, subpart C, ..., this Interpretative Ruling will be superseded after June 30, 1979 (a) by preconstruction review provisions of the revised SIP, if the SIP meets the requirements of Part D, Title 1, of the Act; or (b) by a prohibition on construction under the applicable SIP and section 110(a)(2)(I) of the Act, if the SIP does not meet the requirements of Part D. The Ruling will remain in effect to the extent not superseded under the Act. This prohibition on major new source construction does not apply to a source whose permit to construct was applied for during a period when the SIP was in compliance with Part D, or before the deadline for having a revised SIP in effect that satisfies Part D.

The above section indicates that the nonattainment areas, e.g. the District, must either determine that new major sources and major modifications satisfy Federal NSR or prohibit the construction of new major sources or major modifications. It goes on to say the construction ban doesn't apply if the application for such sources was submitted when the nonattainment area's NSR rule was approved by EPA as part of the SIP.

It is reasonable to interpret this section such that applications pending on 7/15/08 are not subject to the Appendix S requirements for PM2.5.

Therefore, based on applicability of Rule 2201 amendments to new applications, the preamble to Appendix S, and Appendix S as codified in 40 CFR part 51, it is not required that the District apply Appendix S requirements to pending applications.

Because these applications were deemed complete prior to 7/15/08, they are not subject to Appendix S requirements for PM2.5.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue Authority to Construct documents: S-33-13-8, S-33-41-4, S-33-67-4, S-33-419-0, S-33-420-0, S-33-423-0, S-33-424-0, S-33-425-0, S-33-426-0, S-33-428-0, S-33-429-0, and '434-0; subject to the permit conditions on the attached draft Authority to Construct documents in Appendix K.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-33-13-8	3020-02-H	90,000 kBtu/hr	\$882.00
S-33-41-4	3020-05-G	3,360,000 gallons	\$326.00
S-33-67-4	3020-05-G	1,260,000 gallons	\$326.00
S-33-419-0	3020-10-D	525 Bhp	\$410.00
S-33-420-0	3020-10-D	525 Bhp	\$410.00
S-33-423-0	3020-05-G	3,360,000 gallons	\$326.00
S-33-424-0	3020-05-G	3,360,000 gallons	\$326.00
S-33-425-0	3020-05-F	824,000 gallons	\$257.00
S-33-426-0	3020-05-F	824,000 gallons	\$257.00
S-33-428-0	3020-05-G	3,360,000 gallons	\$326.00
S-33-429-0	3020-10-D	525 Bhp	\$410.00
S-33-434-0	3020-05-G	3,360,000 gallons	\$326.00

Appendices

- A:** Project Location
- B:** On-Site Location of Individual Equipment
- C:** Current PTOs
- D:** Firewater Pumps Engine Data
- E:** Compliance Certifications
- F:** HRA / AAQA Summary
- G:** Modified Mild Hydrocracker Fugitive Emissions Calculations
- H:** Existing Refinery Storage Tanks Connected to the Refinery Vapor Control System Used as Models for Fugitive Component Counts of the New and Modified Tanks to be Connected to the Refinery Vapor Control System
 - H.1:** Fugitive VOC Emissions From New and Modified Fixed Roof Storage Tanks On Refinery Vapor Control System
 - H.2:** Uncontrolled VOC Emissions From Diesel Storage In New and Modified Fixed Roof Storage Tanks
 - H.3:** VOC Emissions From Gasoline Storage In New External Floating Roof Storage Tank
- I:** Quarterly Net Emissions Change (QNEC)
- J:** Top-Down BACT Determinations and Guidelines
 - J.1:** Top-Down BACT Determination and Guideline for Fugitive Component VOC Emissions and Pump and Compressor Seal VOC Emissions from Modified Mild Hydrocracker
 - J.2:** Top-Down BACT Determination and Guideline for New External Floating Roof Storage Tank
 - J.3:** Top-Down BACT Determination and Guideline for New Emergency Firewater Pump Engines
 - J.4:** New Top-Down BACT Determination And Guideline For Fixed Roof Variable Product Petroleum Storage Tank With Vapor Control And Gas Blanketing Except When Storing Diesel Fuel
 - J.4.i:** Technical Description of Diesel Contamination Caused By Use of Vapor Control System
 - J.4.ii:** Quote for Stand-Alone Thermal Oxidizer from International Alliance Group
 - J.4.iii:** Cost Effectiveness Calculations for Stand-Alone Vapor Control System with Thermal Oxidizer
- K:** Draft Authority to Construct (ATC) Documents

APPENDIX A

Project Location



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 This map is informational only. No representation is made or warranty given as to its content. User assumes all risk of use. MapQuest and its suppliers assume no responsibility for any loss or delay resulting from such use.

APPENDIX B

On-Site Location of Individual Equipment

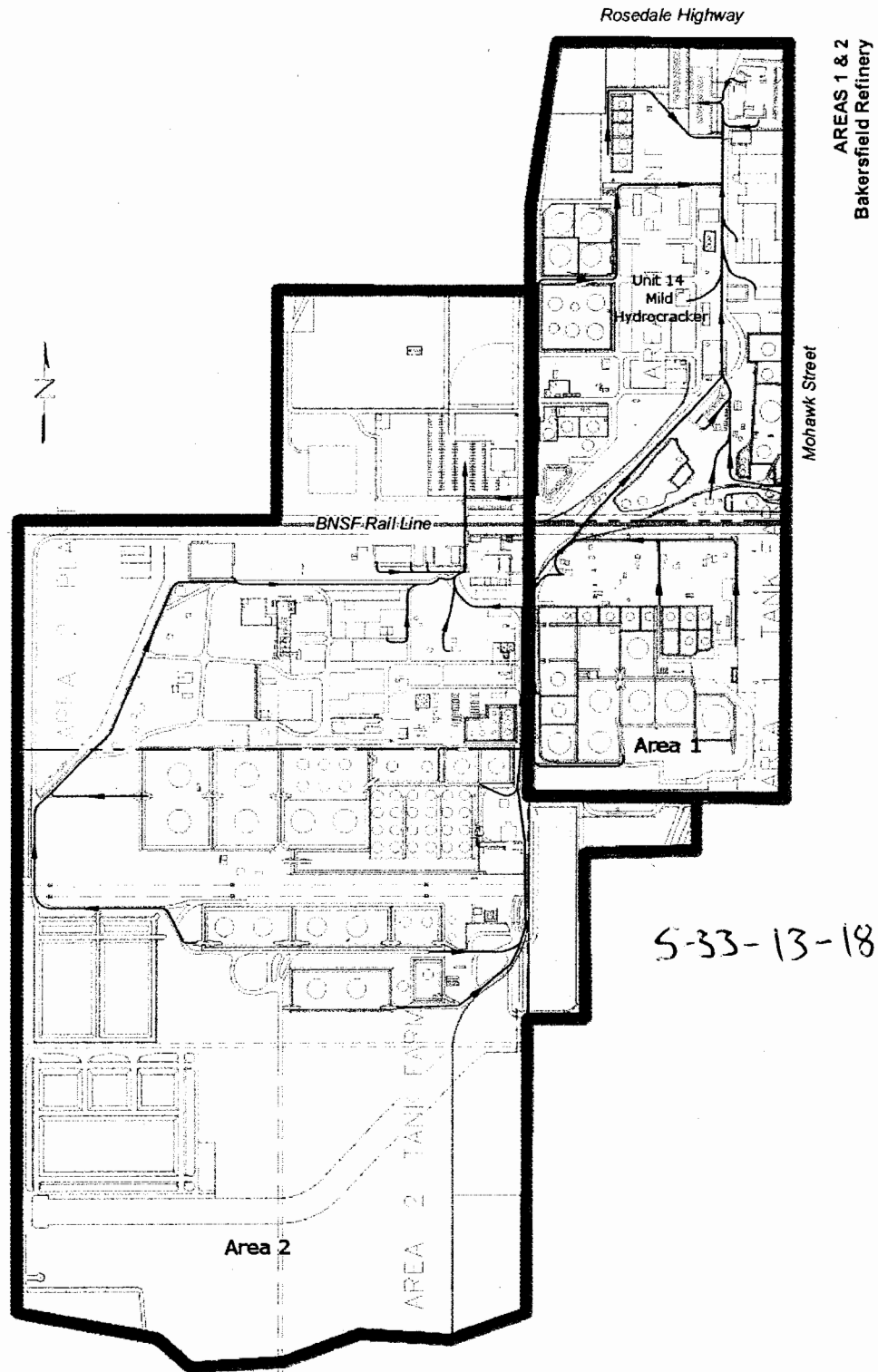


Figure B-2: Emission Unit Location within the Bakersfield Refinery

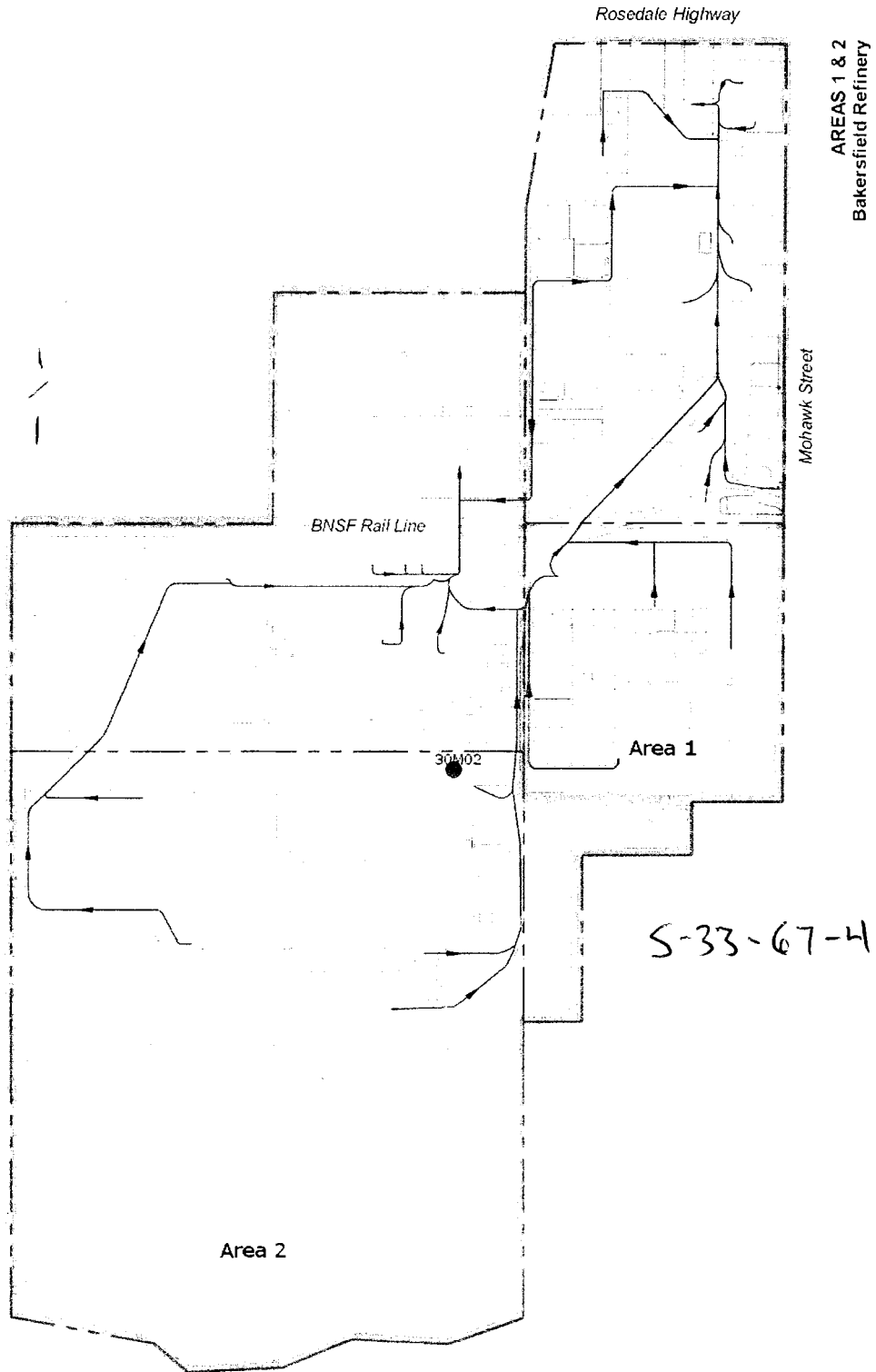


Figure B-1: Emission Unit Location within the Bakersfield Refinery

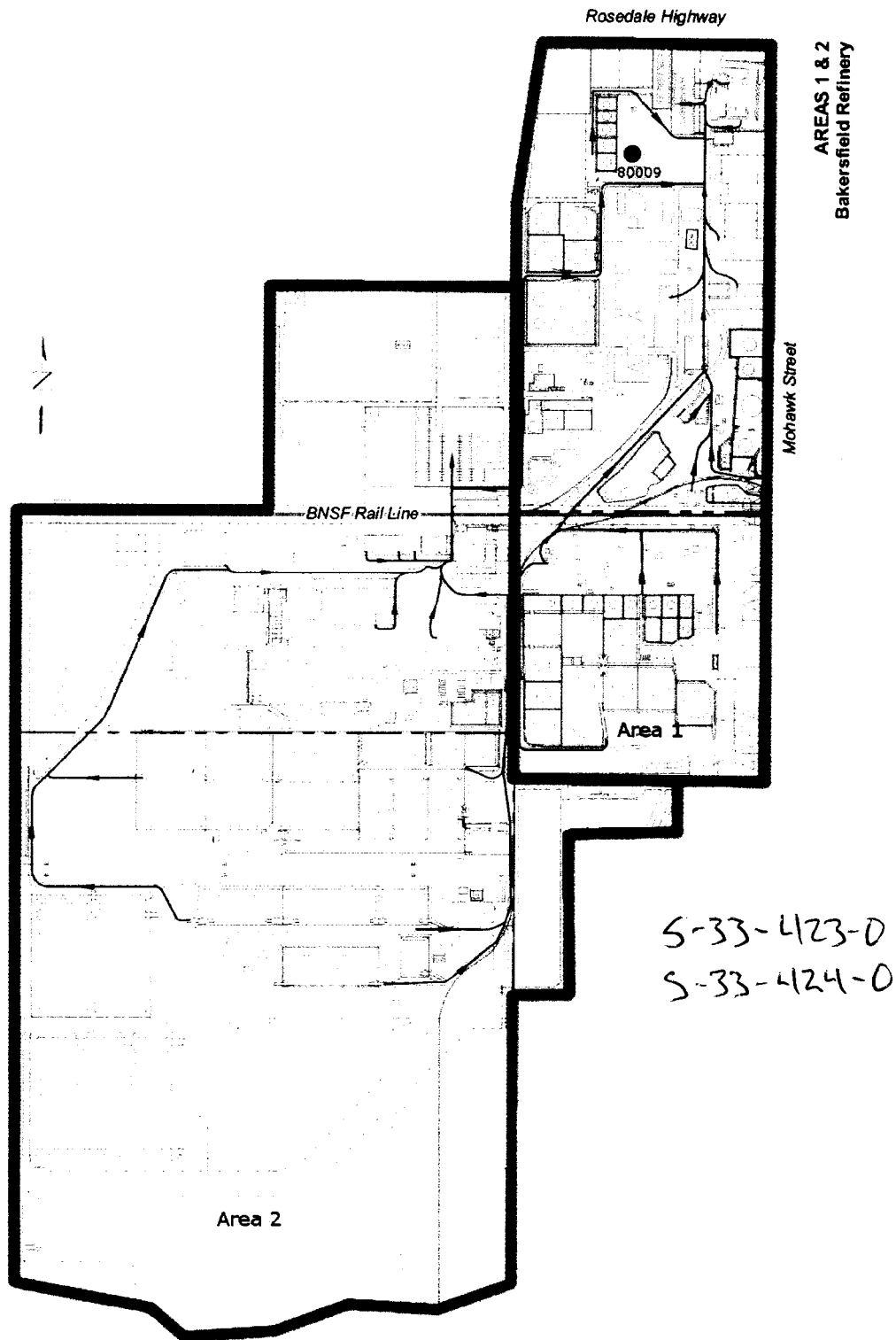


Figure B-1: Proposed Emission Unit Location within the Bakersfield Refinery
(Note: Emission unit location as indicated on map is approximate.)

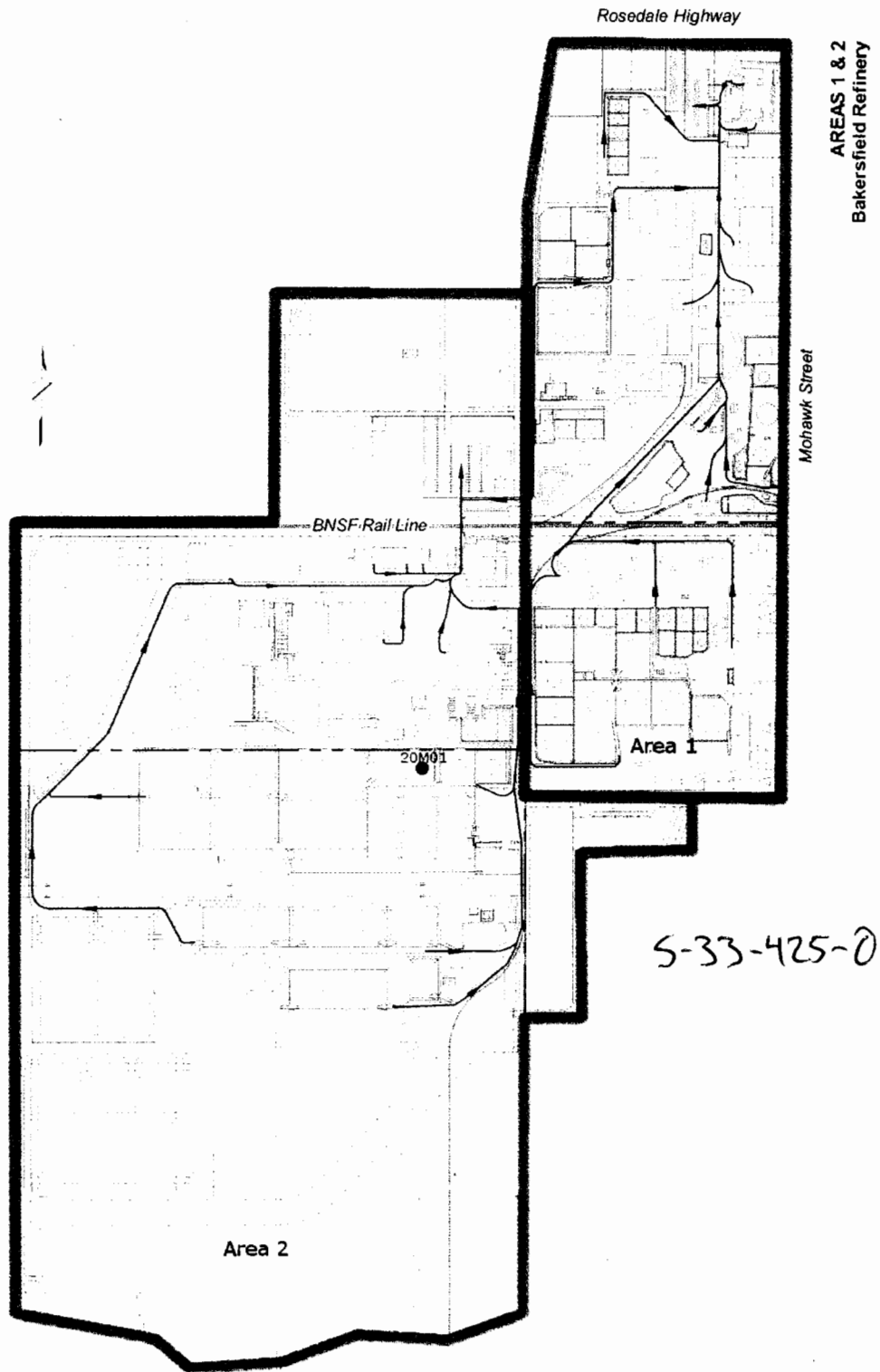


Figure B-1: Emission Unit Location within the Bakersfield Refinery

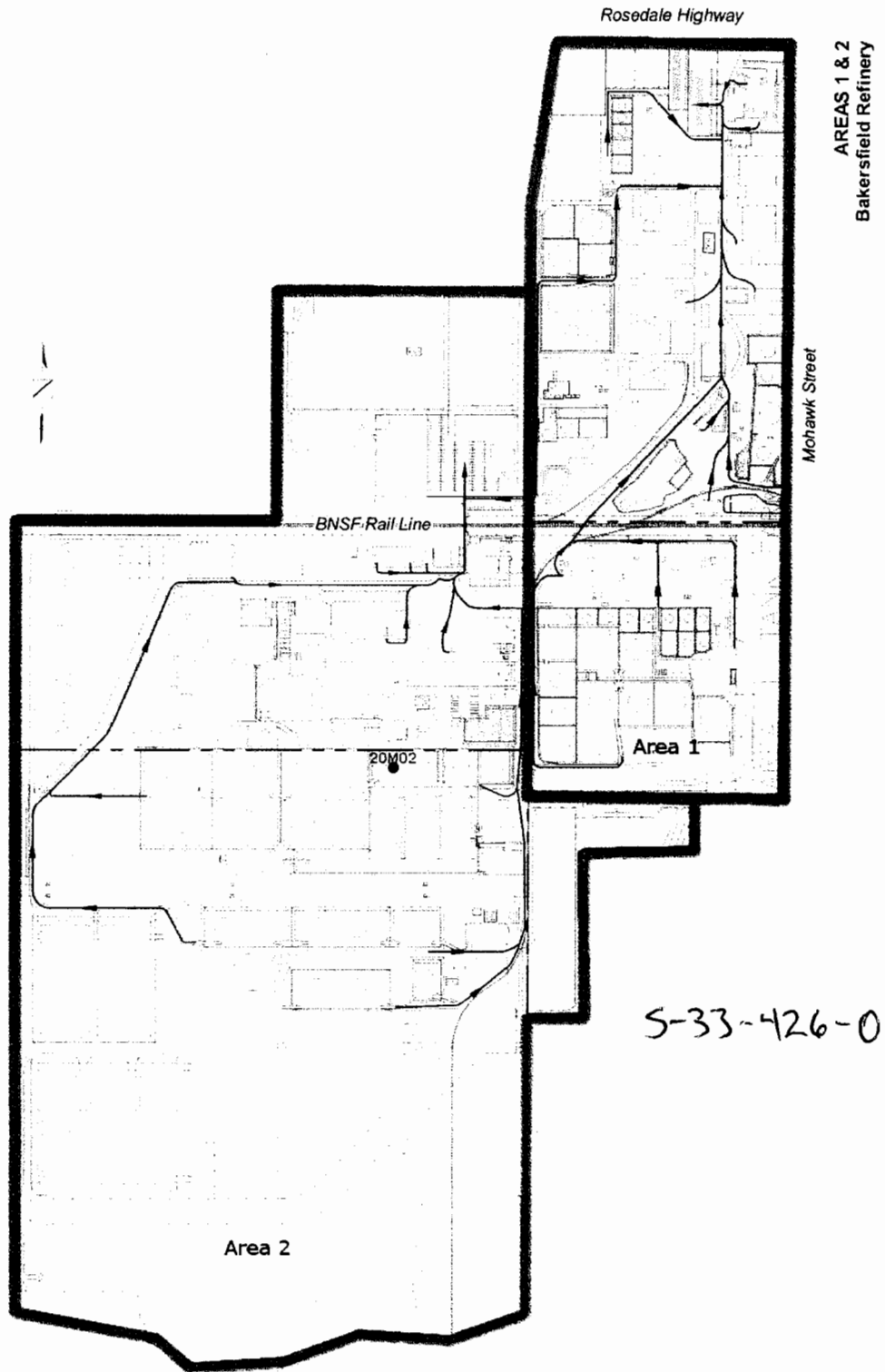


Figure B-1: Emission Unit Location within the Bakersfield Refinery

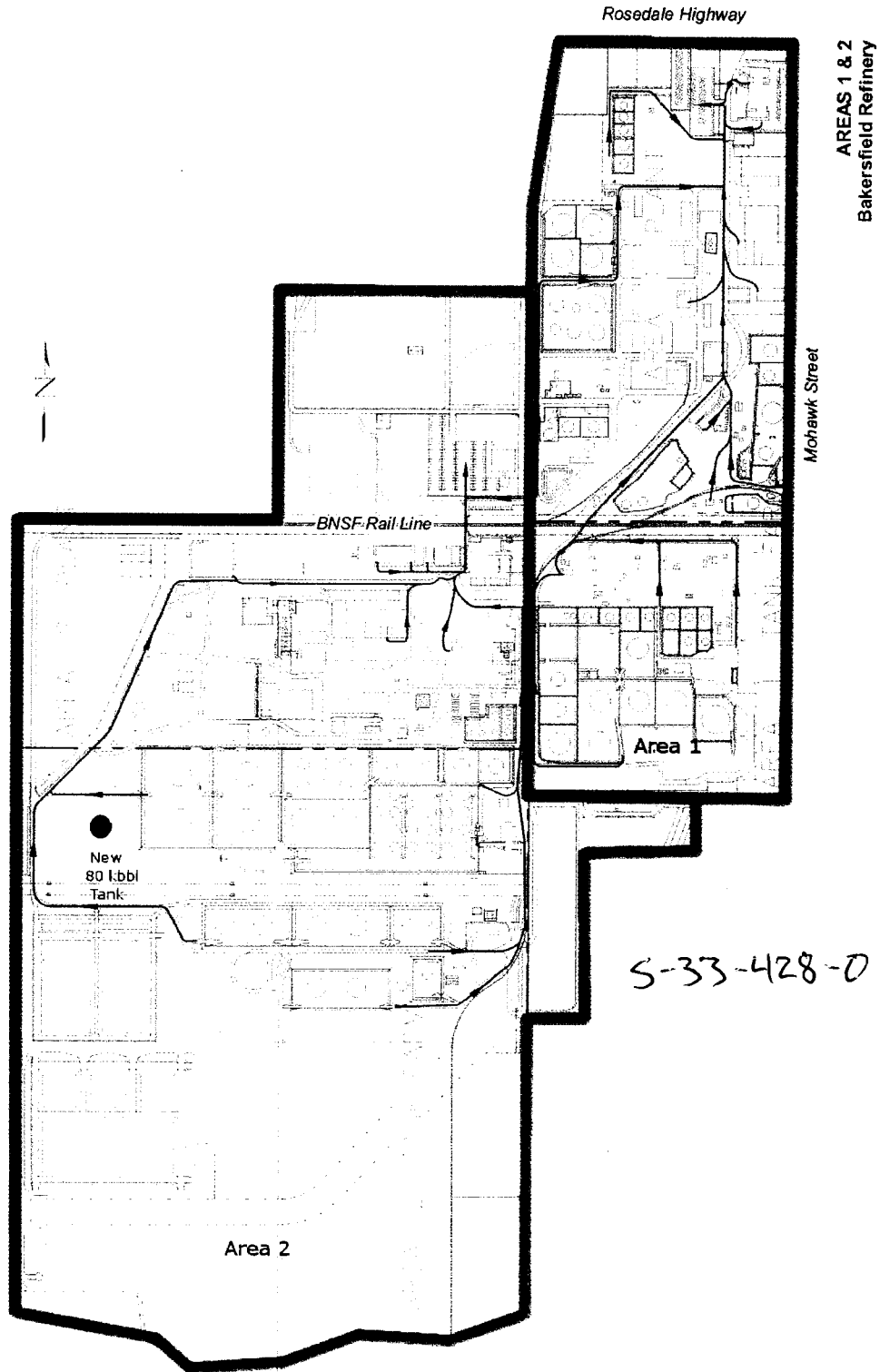


Figure B-1: Proposed Emission Unit Location Within the Bakersfield Refinery
(Note: Emission unit location as indicated on map is approximate.)

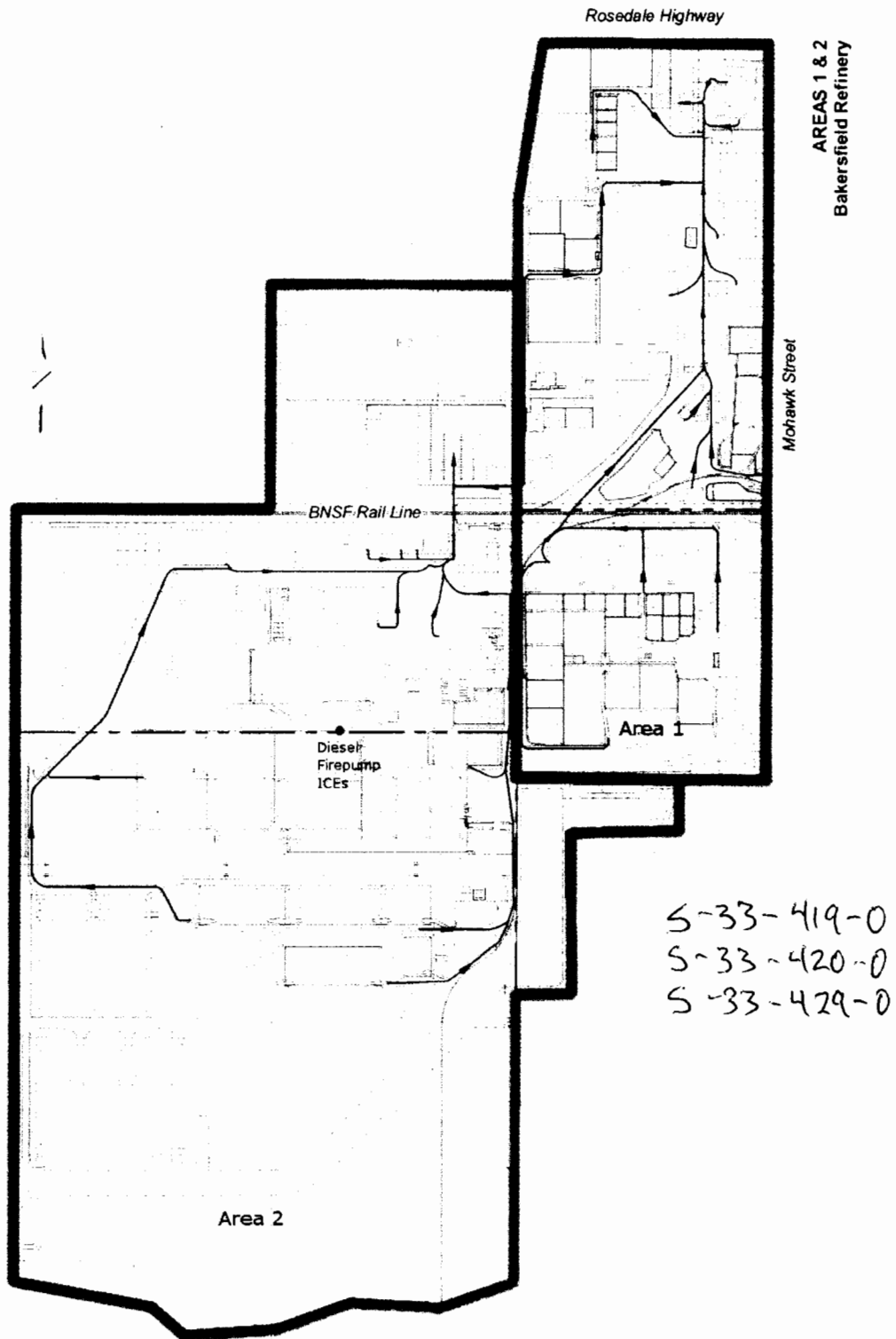


Figure B-1: Approximate Emission Unit Location Within the Bakersfield Refinery

APPENDIX C

Current PTOs

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-33-13-17

EXPIRATION DATE: 08/31/2007

SECTION: 27 TOWNSHIP: 29S RANGE: 27E

EQUIPMENT DESCRIPTION:

MILD HYDROCRACKER #14 INCLUDING 50 MMBTU/HR GAS FIRED CHARGE HEATER 14-H1, 40 MMBTU/HR GAS FIRED FEED HEATER 14-H2, REACTOR 14-R1, 4 SEPARATORS 14-D4/5, V6/9, FRACTIONATOR 14-V1, DIESEL STRIPPER 14-V4 AND MISC PUMPS, HEAT EXCHANGERS, PIPING AND VESSELS - AREA 1

PERMIT UNIT REQUIREMENTS

1. Permittee shall comply with applicable requirements of Rule 4001 NSPS Subparts A, J, and GGG. [District Rule 4001] Federally Enforceable Through Title V Permit
2. Sour gas shall discharge only to amine treater or sulfur recovery plant, except that sour gas may be discharged to the flare under emergency or upset conditions as provided under Rules 1100 (Breakdown Conditions) and 4001 (NSPS Subparts A and J). [District NSR Rule] Federally Enforceable Through Title V Permit
3. Heater 14-H1 shall be equipped with eight (8) - 6.25 MMBtu/hr John Zink HEVD-16 burners with steam injection. [District NSR Rule] Federally Enforceable Through Title V Permit
4. Heater 14-H2 shall be equipped with four (4) - 10 MMBtu/hr rated John Zink "SMR" type burners. [District NSR Rule] Federally Enforceable Through Title V Permit
5. Sulfur content (as H₂S) of fuel gas, natural gas or blended gas supplied to heaters 14H1 and 14H2 shall not exceed 100 ppmv (three hour rolling average). [District NSR Rule and 4001] Federally Enforceable Through Title V Permit
6. Emission rate from heater 14H1 shall not exceed any of the following PM₁₀: 0.075 lb/MMBtu, NO_x (as NO₂): 30 ppmv @ 3% O₂, VOC: 0.005 lb/MMBtu, or CO: 240 ppmv @ 3% O₂. [District NSR Rule, 4305, and 4351] Federally Enforceable Through Title V Permit
7. NO_x (as NO₂) emissions from heater 14H1 shall not exceed 25 ppmv @ 3% O₂. [District NSR Rule] Federally Enforceable Through Title V Permit
8. Emission rate from heater 14H2 shall not exceed any of the following VOC: 0.0028 lb/MMBtu; NO_x (as NO₂): 0.043 lb/MMBtu and CO: 100 ppmv @ 3% O₂. [District NSR Rule] Federally Enforceable Through Title V Permit
9. Heaters 14H1 and 14H2 stack concentration of NO_x (as NO₂), CO, and O₂ shall be measured at least on a monthly basis using District approved portable analyzers. [District Rule 4305] Federally Enforceable Through Title V Permit
10. The permittee shall maintain records of the date and time of NO_x, CO, and O₂ measurements, the measured NO₂ and CO concentrations corrected to 3%O₂, and the O₂ concentration. The records must also include a description of any corrective action taken to maintain the emissions within the acceptable range. These records shall be retained at the facility for a period of no less than 5 years and shall be made available for District inspection upon request. [District Rule 4305] Federally Enforceable Through Title V Permit
11. If the NO_x or CO concentrations, as measured by the portable analyzer, exceed the allowable emissions rate, the permittee shall notify the District and take corrective action within one (1) hour after detection. If the portable analyzer readings continue to exceed the allowable emissions rate, the permittee shall conduct an emissions test within 60 days, utilizing District-approved test methods, to demonstrate compliance with the applicable emissions limits. [District Rule 4305] 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.

12. Source testing for NO_x and CO emission limits shall be conducted not less than once every 12 months, except as provided below. [District Rule 4305] Federally Enforceable Through Title V Permit
13. Source testing for NO_x and CO emission limits shall be conducted not less than once every 36 months if compliance is demonstrated on two consecutive annual tests. [District Rule 4305] Federally Enforceable Through Title V Permit
14. If permittee fails any compliance demonstration for NO_x and CO emission limits when testing not less than once every 36 months, compliance with NO_x and CO emission limits shall be demonstrated not less than once every 12 months. [District Rule 4305] Federally Enforceable Through Title V Permit
15. Source test results from an individual unit that is identical to this unit, in terms of rated capacity, operational conditions, fuel used, and control method, as approved by the APCO, will satisfy the NO_x and CO source testing requirement. [District Rule 4305] Federally Enforceable Through Title V Permit
16. Source testing shall be by District witnessed, or authorized, sample collection by ARB certified testing laboratory. [District Rule 1081] Federally Enforceable Through Title V Permit
17. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
18. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
19. Source testing shall be conducted under conditions representative of normal operation. [District Rule 1081] Federally Enforceable Through Title V Permit
20. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or ARB Method 100, and stack gas oxygen - EPA Method 3 or 3A or ARB Method 100. [District Rules 1081 & 4305] Federally Enforceable Through Title V Permit
21. Permittee shall maintain a record of the sulfur content (as H₂S) of the fuel gas, natural gas and blended gas. [District NSR Rule] Federally Enforceable Through Title V Permit
22. Permittee shall maintain records of hhv of fuel burned and cumulative annual fuel use. [District Rule 1070 and 2520, 9.3.2] Federally Enforceable Through Title V Permit
23. Annual test results submitted to the District from unit(s) representing a group of units may be used to measure NO_x emissions of this permit for that group, provided the selection of the representative unit(s) is approved by the APCO prior to testing. Should any of the representative units exceed the required NO_x emission limits of this permit, each of the units in the group shall demonstrate compliance by emissions testing within 90 days of the failed test. (This requirement shall not supersede a more stringent NSR or PSD permit testing requirement.) [District Rules 2520, 9.3.2, 4305, 6.3.2, and 4351, 6.3] Federally Enforceable Through Title V Permit
24. The following conditions must be met for representative unit(s) to be used to test for NO_x limits for a group of units: 1) all units are initially source tested and emissions from each unit in group are less than 90% of the permitted value and vary 25% or less from the average of all runs, 2) all units in group are similar in terms of rated heat input (rating not to exceed 100 MMBtu/hr), make and series, operation conditions, and control method, and 3) the group is owned by a single owner and located at a single stationary source. [District Rules 4305, 6.3.2] Federally Enforceable Through Title V Permit
25. All units in a group for which representative units are source for NO_x emissions shall have received the same maintenance and tune-up procedures as the representative unit(s). These tune-up procedures shall be completed according to District Rule 4304 (Adopted October 19, 1995) and tune-up test results shall show comparable results for each unit in the group. Records shall be maintained for each unit of the group including all preventative and corrective maintenance work done. [District Rule 4305, 6.3.2] 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.

26. All units in a group for which representative units are source tested for NO_x emissions of this permit shall be fired on the same fuel type during the entire compliance period. If a unit switches for any time to an alternate fuel type (e.g. from natural gas to oil) then that unit shall not be considered part of the group and shall be required to undergo a source test for all fuel types used, within one year of the switch. [District Rules 4305, 6.3.2] Federally Enforceable Through Title V Permit
27. The number of representative units source tested for NO_x emissions shall be at least 30% of the total number of units in the group. The units included in the 30% shall be rotated, so that in 3 years, all units in the entire group will have been tested at least once. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
28. The portable analyzer shall be calibrated prior to each use with a two-point calibration method (zero and span). Calibration shall be performed with certified calibration gases. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
29. Emissions for this unit shall be calculated using the arithmetic mean, pursuant to District Rule 1081(amended December 16, 1993), of 3 thirty-minute test runs for NO_x and CO. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
30. All required source testing shall conform to the compliance testing procedures described in District Rule 1081(Last Amended December 19,1993). [District Rule 1081, and Kern County Rule 108.1] Federally Enforceable Through Title V Permit
31. Copies of all fuel invoices, gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted and all dates on which unit is fired on any noncertified fuel. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
32. Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
33. Emissions of sulfur compounds from this unit shall not exceed 200 lb per hour, calculated as SO₂. Compliance with this requirement may be demonstrated by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rule 2520, 9.3.2 and District Rule 4301, 5.2.1] Federally Enforceable Through Title V Permit
34. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
35. When complying with SO_x emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6B; or Method 8; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, a grab sample analysis by GC-FPD/TCD performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months; however, annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
36. If the unit is fired on noncertified gaseous fuel and compliance with SO_x emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
37. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rule 2520, 9.3.2; 4305, 6.2.1; and 4351, 6.2.1] 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.

38. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period (Kern County Rule 407). To demonstrate compliance with this requirement the operator shall test the sulfur content of each fuel source and demonstrate the sulfur content does not exceed 3.3% by weight for gaseous fuels; or determine that the concentration of sulfur compounds in the exhaust does not exceed the concentration limit by a combination of source testing and fuel analysis. [District Rule 4801] Federally Enforceable Through Title V Permit
39. Nitrogen oxide (NO_x) emission concentrations in ppmv shall be referenced at dry stack gas conditions, and shall be calculated to 3.00 percent by volume stack gas oxygen and averaged over 60 minutes, and lb/MMBtu rates shall be calculated as lb NO₂/MMBtu of heat input (hhv). [District Rule 2520, 9.3.2, 4305, 5.0, 8.2 and/or 4351, 8.1] Federally Enforceable Through Title V Permit
40. Nitrogen oxide (NO_x) emissions shall not exceed 140 lb/hr, calculated as NO₂. [District Rules 4301, 5.2.2] Federally Enforceable Through Title V Permit
41. Valves, threaded connections, and flanges shall not leak VOCs at a rate of more than three (3) drops per minute or leak in excess of 10,000 ppm above background when measured at a distance of one (1) centimeter of the potential source with an instrument calibrated with methane, provided the total number of leaking components of any component type does not exceed two (2) percent of the total number of components of that type. [District Rule 4451, 5.1.1 & 5.1.2] Federally Enforceable Through Title V Permit
42. Pressure relief valves (PRVs) shall not leak VOCs in excess of 10,000 ppm above background when measured in the plane at the centroid of any atmospheric vent with an instrument calibrated with methane, provided the total number of leaking PRVs does not exceed two (2) percent. [District Rule 4451, 5.1.1 & 5.1.2] Federally Enforceable Through Title V Permit
43. Process drains shall not leak VOCs in excess of 10,000 ppm above background when measured at a distance of one (1) centimeter of the potential source with an instrument calibrated with methane, provided the total number of leaking process drains does not exceed two (2) percent. [District Rule 4451, 5.1.1 & 5.1.2] Federally Enforceable Through Title V Permit
44. The facility shall not use any valve, other than a valve on a product sampling line, a safety pressure relief valve, or a double block and bleeder valve, which is located at the end of a pipe or line containing VOCs unless such valve is sealed with a blind flange, plug, or cap; not including loading spouts and water drain valves. [District Rule 4451, 5.1.4] Federally Enforceable Through Title V Permit
45. Every leaking valve, flange, threaded connection, process drain and pressure relief valve shall be affixed with a record of inspection which shall bear a legible record of all inspections for at least a fifteen month period or coded with the records kept in a centralized location. [District Rule 4451, 5.1.5] Federally Enforceable Through Title V Permit
46. All valves, threaded connections and PRVs handling VOCs shall be inspected for leakage with a portable hydrocarbon detection instrument in accordance with EPA Method 21 at least once every three (3) months. If less than two (2) percent of the components of any component type, except PRVs, are found to leak during each five (5) consecutive quarterly inspections, the inspection frequency for that component type may be changed from quarterly to annual. If any annual inspection shows that two (2) percent or more of all of a specific component type subject to the prohibitions of this rule are leaking, then quarterly inspections of that component type shall be resumed. [District Rule 4451, 5.2.1] Federally Enforceable Through Title V Permit
47. All flanges and process drains handling VOCs shall be inspected for leakage with a portable hydrocarbon detection instrument in accordance with EPA Method 21 at least once every 12 months. [District Rule 4451, 5.2.2] Federally Enforceable Through Title V Permit
48. Within three (3) days after any pressure relief valve vents to the atmosphere, the operator shall inspect with a portable hydrogen detection instrument any such PRV and shall repair any leak. The inspection shall be accomplished by sampling for vapors with a portable hydrocarbon detection instrument and by visual examination for indication of liquid leakage. [District Rule 4451, 5.2.3 & 5.2.4] 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.

49. Any leaking valve, PRV, threaded connection, flange and process drain shall be identified by affixing a weatherproof, readily visible tag bearing the date on which the leak is detected. The tag shall remain in place until repair and reinspection documents compliance with the requirements of Rule 4451 (Amended December 17, 1992). [District Rule 4451, 5.2.5] Federally Enforceable Through Title V Permit
50. Each leak detected shall be recorded on the inspection record along with the date of inspection, component identification number, actual instrument reading, and the inspector's initials. [District Rule 4451, 5.2.6] Federally Enforceable Through Title V Permit
51. Within 15 days after detection any valve, pressure relief valve, flange, threaded connection, or process drain found to leak shall be repaired or vented to a flare satisfying the requirements of 40 CFR 60.18 or to a vapor control device that is at least 95 percent efficient as measured by EPA Method 25. [District Rule 4451, 5.3.1] Federally Enforceable Through Title V Permit
52. If a valve, pressure relief valve, flange, threaded connection, or process drain is found to leak and cannot be repaired to a no-leak condition without requiring the shutdown of essential refinery operations, the following repair schedule shall apply: (a) If the leak rate is less than ten (10) drops per minute the APCO shall be notified of the expected date of repair, not to exceed one (1) year or the date of the next process unit turnaround whichever is less for each valve, pressure relief valve, flange, threaded connection, and process drain, and the actual date of repair for each valve, pressure relief valve, flange, threaded connection, and process drain. (b) If the leak rate is greater than nine (9) drops per minute or 10,000 ppm measured one (1) centimeter from the source, the APCO shall be notified of an emergency repair, within 15 days after detection, to reduce the leak to less than ten (10) drops per minute or 10,000 ppm as methane measured one (1) centimeter from the source, or the venting, within 30 days after detection, of the emission to a flare or vapor control system that satisfies the requirements of 40 CFR 60.18 or to a vapor control device that is at least 95 percent efficient as measured by EPA Method 25, or a demonstration, with 30 days after detection, that the repair schedules are infeasible. The demonstration shall include documentation that the component is an essential device and that no vapor control device that satisfies the requirements of 40 CFR 60.18 or to a vapor control device that is at least 95 percent efficient as measured by EPA Method 25 exists. (c) Repair an essential device to eliminate the leak during the next process unit shutdown, but in no case later than one (1) year from the date of the original leak detection. [District Rule 4451, 5.3.2] Federally Enforceable Through Title V Permit
53. Analysis of halogenated exempt compounds shall be by ARB Method 422. [District Rule 4451, 6.3.1] Federally Enforceable Through Title V Permit
54. Efficiency of VOC destruction device shall be measured by EPA Method 25, 25a, or 25b, as applicable. [District Rule 4451, 6.3.2] Federally Enforceable Through Title V Permit
55. The TVP of organic liquids, including light crude and petroleum distillates, shall be measured using Reid vapor pressure ASTM Method No. D-323 modified by maintaining the hot water bath at storage temperature. Where storage temperature is above 1000F, TVP may be determined by Reid Vapor pressure at 1000F and ARB approved calculations. Organic liquids listed in Rule 4451 (Amended December 17, 1992), Table 1 shall be deemed to be in compliance with the appropriate vapor pressure limits for the material, provided actual operating temperature does not exceed the corresponding maximum temperature listed. [District Rule 4451, 6.3.3] Federally Enforceable Through Title V Permit
56. Copies of the inspection log shall be retained by the operator for a minimum of five (5) years after the date of an entry and made available upon request to District personnel. [District Rules 4451, 6.2.2, 6.2.3, and 2520, 9.4.2] Federally Enforceable Through Title V Permit
57. Pumps or compressors which handle a VOC or any associated seal fluid system which circulates a fluid through or between seals on process pumps or compressors shall be inspected for leaks with a portable hydrocarbon detection instrument in accordance with EPA Method 21 at least once every three (3) months. [District Rule 4452, 5.1.1] Federally Enforceable Through Title V Permit
58. Any pump shall be visually inspected weekly. Whenever volatile organic liquids are observed dripping from a pump seal, the seal shall be checked within three (3) day with a portable hydrocarbon detection instrument in accordance with EPA Method 21 to determine if a leak is present or the drippage stopped with the same time frame. [District Rule 4452, 5.1.2] 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.

59. Pumps or compressors which handle a VOC or any associated seal fluid system which circulates a fluid through or between seals on process pumps or compressors shall not leak in excess of 10,000 ppm above background when measured at a distance of one (1) centimeter from the potential source with an instrument calibrated with methane or the drip liquid VOCs at a rate of more than three (3) drops per minute. [District Rule 4452, 5.1.3] Federally Enforceable Through Title V Permit
60. Any person operating a pump or compressor which handles a VOC or any associated seal fluid system which circulates a fluid through or between seals on process pumps or compressors which is leaking shall repair the leaking device within 15 calendar days. If the leaking device is essential and cannot be repaired within 15 days after detection, one (1) of the following actions shall be taken: (a) replace the leaking device and inspect for leaks within three days after detection, (b) vent emissions to vapor recovery device that is at least 94 percent efficient as measured by EPA Method 25, or to a flare that satisfies the requirements of 40 CFR 60.18, or (c) repair the essential device to eliminate the leak during the next process unit shutdown, but in no case later than one (1) year from the date of the original leak detection. [District Rule 4452, 5.2.1] Federally Enforceable Through Title V Permit
61. A readily visible identification, in the form of a weather-proof tag shall be attached to any pumps or compressors which handle a VOC or any associated seal fluid system which circulates a fluid through or between seals on process pumps or compressors which leaks. Pumps or compressors which handle a VOC, or any associated seal fluid systems which circulates a fluid through or between seals on process pumps or compressors, to be repaired at the next shutdown shall be tagged, marked or coded in a manner easily identifiable by District personnel. [District Rule 4452, 5.2.2] Federally Enforceable Through Title V Permit
62. Sampling of a seal shall be performed one (1) centimeter from the outer end of the shaft seal interface or at a distance of one (1) centimeter of any other point on the seal which could leak. [District Rule 4452, 6.3.1.2] Federally Enforceable Through Title V Permit
63. Sampling of atmospheric vents on pump and compressor fluid systems shall be measured in the plane of the opening of the vent at the centrad. [District Rule 4452, 6.3.1.3] Federally Enforceable Through Title V Permit
64. Each operator shall maintain an inspection log containing, at a minimum, the following: name, location, type of components, and description of any unit where leaking components are found; date of leak detection, emission level (ppm) of leak, and method of detection; date and emission level of recheck after leak is repaired; identification of leaks that cannot be repaired until next process unit turnaround; total number of components inspected, and total number and percentage of leaking components found for each component type. [District Rules 4451, 6.2.1 & 4452, 6.2.1] Federally Enforceable Through Title V Permit
65. Operators shall not depressurize any vessel containing VOCs unless the process unit turnaround is accomplished by employing one of the following operating procedures: The organic vapors shall either be recovered, added to the refinery fuel gas system and combusted; or controlled and piped to an appropriate firebox or incinerated for combustion; or flared, until the pressure within the process vessel is as close to atmospheric pressure as is possible. All process vessels shall be depressurized into the control facilities to less than 1020 mm Hg (5 psig) before venting/opening to atmosphere. All organic compounds which emerge from a refinery process vessel during the purging of said vessel and which otherwise would be emitted to the atmosphere shall be either directed to a flare or incinerator or shall be used for fuel until such disposition of emissions is not technically feasible or is less safe than atmospheric venting. [District Rule 4454, 4.0] Federally Enforceable Through Title V Permit
66. The owner or operator may apply to the Administrator for a determination of equivalency for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in Subpart GGG. In doing so, the owner or operator shall comply with the requirements of 40 CFR 60.484. [40 CFR 60.592(c)] Federally Enforceable Through Title V Permit
67. Each pump in light liquid service (PLLS) shall be monitored monthly to detect leaks by the methods specified in 40 CFR 60.485(b), except as provided in 40 CFR 60.482-1(c) and 40 CFR 60.482-2(d), (e), and (f). Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. A leak is detected if an instrument reading of 10,000 ppm or greater is measured or if there are indications of liquids dripping from the pump seal. [40 CFR 60.482-2(a) and (b)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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68. When a leak is detected for each PLLS, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 60.482-9. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-2(c)] Federally Enforceable Through Title V Permit
69. Each PLLS equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of 40 CFR 60.482-2(a) provided the requirements specified in 40 CFR 60.482-2(d)(1) through (6) are met. [40 CFR 60.482(d)] Federally Enforceable Through Title V Permit
70. Any PLLS that is designated, as described in 40 CFR 60.486(e)(1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of 40 CFR 60.482-2(a), (c), and (d) if the pump meets the requirements specified in 40 CFR 60.482-2(e)(1), (2), and (3). [40 CFR 60.482-2(e)] Federally Enforceable Through Title V Permit
71. If any PLLS is equipped with a closed vent system capable of capturing and transporting leakage from the seal or seals to a control device that complies with the requirements of 40 CFR 60.482-10, it is exempt from the requirements of 40 CFR 60.482-2(a) through (e). [40 CFR 60.482-2(f)] Federally Enforceable Through Title V Permit
72. Any pump in PLLS that is designated, as described in 40 CFR 60.486(f)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of 40 CFR 60.482-2(a) and 40 CFR 60.482-2(d)(4) through (6) if: 1) The owner or operator of the pump demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with 40 CFR 60.482-2(a); and 2) The owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in 40 CFR 60.482-2(c) if a leak is detected. [40 CFR 60.482-2(g)] Federally Enforceable Through Title V Permit
73. Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of 40 CFR 60.482-2(a)(2) and (d)(4) and the daily requirements of 40 CFR 60.482-2(d)(5), provided that each pump is visually inspected as often as practicable and at least monthly. [40 CFR 60.482-2(h)] Federally Enforceable Through Title V Permit
74. Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in 40 CFR 60.485(c). [40 CFR 60.482-4(a)] Federally Enforceable Through Title V Permit
75. After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in 40 CFR 60.482-9. No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in 40 CFR 60.485(c). [40 CFR 60.482-4(b)] Federally Enforceable Through Title V Permit
76. Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in 40 CFR 60.482-10 is exempted from the requirements of 40 CFR 60.482-4(a) and (b). [40 CFR 60.482-4(c)] Federally Enforceable Through Title V Permit
77. Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the 40 CFR 60.482-4(a) and (b), provided the owner or operator complies with the requirements in 40 CFR 60.482-4(d)(2) of this section. After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-4(d)] Federally Enforceable Through Title V Permit
78. Except for in-situ sampling systems and sampling systems without purges, each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system, except as provided in 40 CFR 60.482-1(c). Each closed-purge, closed-loop, or closed-vent system shall comply with the requirements specified in 40 CFR 60.482-5(b)(1), (2), (3), and (4). [40 CFR 60.482-5(a), (b), and (c)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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79. Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in 40 CFR 60.482-1(c). The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line. When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with this condition at all other times. [40 CFR 60.482-6(a) and (c)] Federally Enforceable Through Title V Permit
80. Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed. [40 CFR 60.482-6(b)] Federally Enforceable Through Title V Permit
81. Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of 40 CFR 60.482-6(a), (b) and (c). [40 CFR 60.482-6(d)] Federally Enforceable Through Title V Permit
82. Open-ended valves or lines containing materials which would autocatalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in 40 CFR 60.482-6(a) through (c) are exempt from the requirements of 40 CFR 60.482-6(a) through (c). [40 CFR 60.482-6(e)] Federally Enforceable Through Title V Permit
83. Each valve in gas/vapor service and in light liquid service shall be monitored monthly to detect leaks by the methods specified in 40 CFR 60.485(b) and shall comply with 40 CFR 60.482-7(b) through (e), except as provided in 40 CFR 60.482-7(f), (g), and (h), 40 CFR 60.483-1, 40 CFR 60.483-2, and 40 CFR 60.482-1(c). A leak is detected if an instrument reading of 10,000 ppm or greater is measured. [40 CFR 60.482-7(a) and (b)] Federally Enforceable Through Title V Permit
84. Any valve in gas/vapor service or in light liquid service for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected. If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months. [40 CFR 60.482-7(c)] Federally Enforceable Through Title V Permit
85. When a leak is detected for any valve in gas/vapor service or in light liquid service, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in 40 CFR 60.482-9. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. First attempts at repair include, but are not limited to, the best practices specified in 40 CFR 60.482-7(e)(1), (2), (3), and (4), where practicable. [40 CFR 60.482-7(d) and (e)] Federally Enforceable Through Title V Permit
86. Any valve in gas/vapor service or in light liquid service that is designated, as described in 40 CFR 60.486(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of 40 CFR 60.482-7(a) if the valve meets the requirements specified in 40 CFR 60.482-7(f)(1), (2), and (3). [40 CFR 60.482-7(f)] Federally Enforceable Through Title V Permit
87. Any valve in gas/vapor service or in light liquid service that is designated, as described in 40 CFR 60.486(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of 40 CFR 60.482-7(a) if: 1) The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with 40 CFR 60.482-7(a); and 2) The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times. [40 CFR 60.482-7(g)] Federally Enforceable Through Title V Permit
88. Any valve in gas/vapor service or in light liquid service that is designated, as described in 40 CFR 60.486(f)(2), as a difficult-to-monitor valve is exempt from the requirements of 40 CFR 60.482-7(a) if: 1) The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface; 2) The process unit within which the valve is located either becomes an affected facility through 40 CFR 60.14 or 40 CFR 60.15 or the owner or operator designates less than 3.0 percent of the total number of valves as difficult-to-monitor; and 3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year. [40 CFR 60.482-7(h)] 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.

89. The owner or operator may elect to comply with the applicable provisions for valves in gas/vapor service and in light liquid service as specified in 40 CFR 60.483-1 and 60.483-2. [40 CFR 60.592(b)] Federally Enforceable Through Title V Permit
90. If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors, the owner or operator shall follow either one of the following procedures: 1) The owner or operator shall monitor the equipment within 5 days by the method specified in 40 CFR 60.485(b) and shall comply with the requirements of 40 CFR 60.482-8(b) through (d); or 2) The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak. A leak is detected if an instrument reading of 10,000 ppm or greater is measured. [40 CFR 60.482-8(a) and (b)] Federally Enforceable Through Title V Permit
91. When a leak is detected in pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 60.482-9. The first attempt at repair shall be made no later than 5 calendar days after each leak is detected. First attempts at repair include, but are not limited to, the best practices described under 40 CFR 60.482-7(e). [40 CFR 60.482-8(c) and (d)] Federally Enforceable Through Title V Permit
92. For closed vent systems and control devices, vapor recovery systems shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, whichever is less stringent. [40 CFR 60.482-10(b)] Federally Enforceable Through Title V Permit
93. For closed vent systems and control devices, enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 degrees C. [40 CFR 60.482-10(c)] Federally Enforceable Through Title V Permit
94. Flares used to comply with Subpart GGG shall comply with the requirements of 40 CFR 60.18. [40 CFR 60.482-10(d)] Federally Enforceable Through Title V Permit
95. Owners or operators of control devices used to comply with the provisions of Subpart GGG shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. [40 CFR 60.482-10(e)] Federally Enforceable Through Title V Permit
96. Except as provided in 40 CFR 60.482-10(i) through (k), each closed vent system used to comply with the provisions of Subpart GGG shall be inspected according to the procedures and schedule specified in 40 CFR 60.482-10(f)(1) and (f)(2). Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired as soon as practicable except as provided in 40 CFR 60.482-10(h). A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. Repair shall be completed no later than 15 calendar days after the leak is detected. [40 CFR 60.482-10(f) and (g)] Federally Enforceable Through Title V Permit
97. Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown. [40 CFR 60.482-10(h)] Federally Enforceable Through Title V Permit
98. If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of 40 CFR 60.482-10(f)(1)(i) and (f)(2). [40 CFR 60.482-10(i)] Federally Enforceable Through Title V Permit
99. Any parts of the closed vent system that are designated, as described in 40 CFR 60.482-10(l)(1), as unsafe to inspect are exempt from the inspection requirements of 40 CFR 60.482-10(f)(1)(i) and (f)(2) if they comply with the requirements specified in 40 CFR 60.482-10 (j)(1) and (j)(2). [40 CFR 60.482-10(j)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
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100. Any parts of the closed vent system that are designated, as described in 40 CFR 60.482-10(l)(2), as difficult to inspect are exempt from the inspection requirements of 40 CFR 60.482-10(f)(1)(i) and (f)(2) if they comply with the requirements specified in 40 CFR 60.482-10(k)(1) through (k)(3). [40 CFR 60.482-10(k)] Federally Enforceable Through Title V Permit
101. The owner or operator shall record the following information: 1) Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment; 2) Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment; 3) For each inspection during which a leak is detected, a record of the information specified in 40 CFR 60.486(c); 4) For each inspection conducted in accordance with 40 CFR 60.485(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected; and 5) For each visual inspection conducted in accordance with 40 CFR 60.482-10(f)(1)(ii) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected. [40 CFR 60.482-10(l)] Federally Enforceable Through Title V Permit
102. Closed vent systems and control devices used to comply with provisions Subpart GGG shall be operated at all times when emissions may be vented to them. [40 CFR 60.482-10(m)] Federally Enforceable Through Title V Permit
103. In conducting the performance tests required in 40 CFR 60.8, the owner or operator shall use as reference methods and procedures the test methods in 40 CFR 60, Appendix A or other methods and procedures as specified in 40 CFR 60.485, except as provided in 40 CFR 60.8(b). [40 CFR 60.485(a)] Federally Enforceable Through Title V Permit
104. The owner or operator shall determine compliance with the standards in 40 CFR 60.482, 60.483, and 60.484 as follows: Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21. The following calibration gases shall be used: (i) Zero air (less than 10 ppm of hydrocarbon in air); and (ii) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane. [40 CFR 60.485(b)] Federally Enforceable Through Title V Permit
105. The owner or operator shall determine compliance with the no detectable emission standards in 40 CFR 60.482-2(e), 60.482-3(i), 60.482-4, 60.482-7(f), and 60.482-10(e) as follows: 1) The requirements of 40 CFR 60.485(b) shall apply. 2) Method 21 shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance. [40 CFR 60.485(c)] Federally Enforceable Through Title V Permit
106. The owner or operator shall test each piece of equipment unless demonstrated that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used: 1) Procedures that conform to the general methods in ASTM E260-73, 91, or 96, E168-67, 77, or 92, E169-63, 77, or 93 (incorporated by reference as seen in 40 CFR 60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment; 2) Organic compounds that are considered by the Administrator to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid; and 3) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, the previous two procedures as specified in 40 CFR 60.485(d)(1) and (2) shall be used to resolve the disagreement. [40 CFR 60.485(d)] Federally Enforceable Through Title V Permit
107. The owner or operator shall demonstrate that an equipment is in light liquid service by showing that all the following conditions apply: 1) The vapor pressure of one or more of the components is greater than 0.3 kPa at 20 °C (1.2 in. H₂O at 68 degrees F). Standard reference texts or ASTM D2879-83, 96, or 97 (incorporated by reference as seen in 40 CFR 60.17) shall be used to determine the vapor pressures; 2) The total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20 degrees Celsius is equal to or greater than 20 percent by weight; and 3) The fluid is a liquid at operating conditions. [40 CFR 60.485(e)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
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108. Samples used in conjunction with 40 CFR 60.485(d), (e), and (g) shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare. [40 CFR 60.485(f)] Federally Enforceable Through Title V Permit
109. The owner or operator shall determine compliance with the standards of flares as specified in 40 CFR 60.485(g)(1), (2), (3), (4), (5), (6), and (7). [40 CFR 60.485(g)] Federally Enforceable Through Title V Permit
110. An owner or operator of more than one affected facility subject to the provisions Subpart GGG may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility. [40 CFR 60.486(a)] Federally Enforceable Through Title V Permit
111. When each leak is detected as specified in 40 CFR 60.482-2, 60.482-3, 60.482-7, 60.482-8, and 60.483-2, the following requirements apply: 1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment; 2) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in 40 CFR 60.482-7(c) and no leak has been detected during those 2 months; and 3) The identification on equipment except on a valve, may be removed after it has been repaired. [40 CFR 60.486(b)] Federally Enforceable Through Title V Permit
112. When each leak is detected as specified in 40 CFR 60.482-2, 60.482-3, 60.482-7, 60.482-8, and 60.483-2, the following information shall be recorded in a log and shall be kept for 5 years in a readily accessible location: 1) The instrument and operator identification numbers and the equipment identification number; 2) The date the leak was detected and the dates of each attempt to repair the leak; 3) Repair methods applied in each attempt to repair the leak; 4) "Above 10,000" if the maximum instrument reading measured by the methods specified in 40 CFR 60.485(a) after each repair attempt is equal to or greater than 10,000 ppm; 5) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak; 6) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown; 7) The expected date of successful repair of the leak if a leak is not repaired within 15 days; 8) Dates of process unit shutdown that occur while the equipment is unrepaired; and 9) The date of successful repair of the leak. [40 CFR 60.486(c) and District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
113. The following information pertaining to the design requirements for closed vent systems and control devices described in 40 CFR 60.482-10 shall be recorded and kept in a readily accessible location: 1) Detailed schematics, design specifications, and piping and instrumentation diagrams; 2) The dates and descriptions of any changes in the design specifications; 3) A description of the parameter or parameters monitored, as required in 40 CFR 60.482-10(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring; 4) Periods when the closed vent systems and control devices required in 40 CFR 60.482-2, 60.482-3, 60.482-4, and 60.482-5 are not operated as designed, including periods when a flare pilot light does not have a flame; and 5) Dates of startups and shutdowns of the closed vent systems and control devices required in 40 CFR 60.482-2, 60.482-3, 60.482-4, and 60.482-5. [40 CFR 60.486(d)] Federally Enforceable Through Title V Permit
114. The following information pertaining to all equipment subject to the requirements in 40 CFR 60.482-1 to 60.482-10 shall be recorded in a log that is kept in a readily accessible location: 1) A list of identification numbers for equipment subject to the requirements of Subpart GGG; 2) (i) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of 40 CFR 60.482-2(e), 60.482-3(i) and 60.482-7(f). (ii) The designation of equipment as subject to the requirements of 40 CFR 60.482-2(e), 60.482-3(i) and 60.482-7(f) shall be signed by the owner or operator; 3) A list of equipment identification numbers for pressure relief devices required to comply with §60.482-4; 4) (i) The dates of each compliance test as required in 40 CFR 60.482-2(e), 60.482-3(i), §60.482-4, and 60.482-7(f). (ii) The background level measured during each compliance test. (iii) The maximum instrument reading measured at the equipment during each compliance test; and 5) A list of identification numbers for equipment in vacuum service. [40 CFR 60.486(e)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
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115. The following information pertaining to all valves subject to the requirements of 40 CFR 60.482-7(g) and (h) and to all pumps subject to the requirements of 40 CFR 60.482-2(g) shall be recorded in a log that is kept in a readily accessible location: 1) A list of identification numbers for valves and pumps that are designated as unsafe-to-monitor, an explanation for each valve or pump stating why the valve or pump is unsafe-to-monitor, and the plan for monitoring each valve or pump; and 2) A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the schedule for monitoring each valve. [40 CFR 60.486(f)] Federally Enforceable Through Title V Permit
116. The following information shall be recorded for valves complying with 40 CFR 60.483-2: 1) A schedule of monitoring; 2) The percent of valves found leaking during each monitoring period. [40 CFR 60.486(g)] Federally Enforceable Through Title V Permit
117. The following information shall be recorded in a log that is kept in a readily accessible location: 1) Design criterion required in 40 CFR 60.482-2(d)(5) and 60.482-3(e)(2) and explanation of the design criterion; and 2) Any changes to this criterion and the reasons for the changes. [40 CFR 60.486(h)] Federally Enforceable Through Title V Permit
118. The following information shall be recorded in a log that is kept in a readily accessible location for use in determining exemptions as provided in 40 CFR 60.480(d): 1) An analysis demonstrating the design capacity of the affected facility; 2) A statement listing the feed or raw materials and products from the affected facilities and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol; and 3) An analysis demonstrating that equipment is not in VOC service. [40 CFR 60.486(i)] Federally Enforceable Through Title V Permit
119. Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location. [40 CFR 60.486(j)] Federally Enforceable Through Title V Permit
120. The provisions of 40 CFR 60.7 (b) and (d) do not apply to affected facilities subject to Subpart GGG. [District 40 CFR 60.486(k)] Federally Enforceable Through Title V Permit
121. All semiannual reports to the Administrator shall include the following information, summarized from the information in 40 CFR 60.486: 1) Process unit identification; 2) For each month during the semiannual reporting period, i) Number of valves for which leaks were detected as described in 40 CFR 60.482-7(b) or 40 CFR 60.483-2, (ii) Number of valves for which leaks were not repaired as required in 40 CFR 60.482-7(d)(1), (iii) Number of pumps for which leaks were detected as described in 40 CFR 60.482-2(b) and (d)(6)(i), (iv) Number of pumps for which leaks were not repaired as required in 40 CFR 60.482-2(c)(1) and (d)(6)(ii), (v) Number of compressors for which leaks were detected as described in 40 CFR 60.482-3(f), (vi) Number of compressors for which leaks were not repaired as required in 40 CFR 60.482-3(g)(1), and (vii) The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible; 3) Dates of process unit shutdowns which occurred within the semiannual reporting period; 4) Revisions to items reported in the semiannual report if changes have occurred since the initial report, as required in 40 CFR 60.487 (a) and (b), or subsequent revisions to the initial report. [40 CFR 60.487(c)] Federally Enforceable Through Title V Permit
122. An owner or operator electing to comply with the provisions of 40 CFR 60.483-1 and 60.483-2 shall notify the Administrator of the alternative standard selected 90 days before implementing either of the provisions. [40 CFR 60.487(d)] Federally Enforceable Through Title V Permit
123. An owner or operator shall report the results of all performance tests in accordance with 40 CFR 60.8 of the General Provisions. The provisions of 40 CFR 60.8(d) do not apply to affected facilities subject to the provisions of Subpart GGG except that an owner or operator must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests. [40 CFR 60.487(e)] Federally Enforceable Through Title V Permit
124. The semiannual reporting requirements of 40 CFR 60.487(a), (b), and (c) remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with the requirements of 40 CFR 60.487(a), (b), and (c), provided that they comply with the requirements established by the State. [40 CFR 60.487(f)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
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125. Compressors are exempt from the standards of Subpart GGG if the owner or operator demonstrates that a compressor is in hydrogen service. Each compressor is presumed not to be in hydrogen service unless an owner or operator demonstrates that the piece of equipment is in hydrogen service. For a piece of equipment to be considered in hydrogen service, it must be determined that the percent hydrogen content can be reasonably expected always to exceed 50 percent by volume. For purposes of determining the percent hydrogen content in the process fluid that is contained in or contacts a compressor, procedures that conform to the general method described in ASTM E-260, E-168, or E-169 shall be used. An owner or operator may use engineering judgment demonstrate that the percent content exceeds 50 percent by volume, provided the engineering judgment demonstrates that the content clearly exceeds 50 percent by volume. When an owner or operator and the Administrator do not agree on whether a piece of equipment is in hydrogen service, however, the procedures that conform to the general method described in ASTM E-260, E-168, or E-169 shall be used to resolve the disagreement. If an owner or operator determines that a piece of equipment is in hydrogen service, the determination can be revised only after following the procedures that conform to the general method described in ASTM E-260, E-168, or E-169. [40 CFR 60.593(b)] Federally Enforceable Through Title V Permit
126. Any existing reciprocating compressor that becomes an affected facility under provisions of 40 CFR 60.14 or 40 CFR 60.15 is exempt from 40 CFR 60.482-3 (a), (b), (c), (d), (e), and (h) provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of 40 CFR 60.482-3 (a), (b), (c), (d), (e), and (h). [40 CFR 60.593(c)] Federally Enforceable Through Title V Permit
127. An owner or operator may use the following provision in addition to 40 CFR 60.485(e): Equipment is in light liquid service if the percent evaporated is greater than 10 percent at 150 °C as determined by ASTM Method D86-78, 82, 90, 95, or 96. [40 CFR 60.593(d)] Federally Enforceable Through Title V Permit
128. Pumps in light liquid service and valves in gas/vapor and light liquid service within a procesic compounds of usually high molecular weight that consist of many repeated links, each link being a relatively light and simple molecule. [40 CFR 60.593(e)] Federally Enforceable Through Title V Permit
129. Equipment that is in vacuum service is excluded from the requirements of 40 CFR 60.482-2 to 40 CFR 60.482-10 if it is identified as required in 40 CFR 60.486(e)(5). [40 CFR 60.482-1(d)] Federally Enforceable Through Title V Permit
130. The operator shall not burn in any fuel gas combustion device any fuel that contains hydrogen sulfide (H₂S) in excess of 0.1 gr/dscf (230 mg/dscm) [40 CFR 60.104(a)(1)] Federally Enforceable Through Title V Permit
131. For fuel gas combustion devices, a continuous emissions monitoring system shall be installed, calibrated, operated, and reported according to EPA guidelines as specified under 40 CFR 60.105(a)(3). CEM results shall be calculated on a rolling three (3) hour basis. [40 CFR 60, 60.105(a)(3)] Federally Enforceable Through Title V Permit
132. For fuel gas combustion devices, operator shall report all rolling 3-hour periods during which the average concentration of H₂S as measured by the H₂S continuous monitoring system exceeds 0.10 gr/dscf (230 mg/dscm) or during which the average concentration of SO₂ as measured by the SO₂ continuous monitoring system exceeds 20 ppm (dry basis, zero percent excess air). [40 CFR 60.105(e)(3)] Federally Enforceable Through Title V Permit
133. Operator shall determine compliance with the H₂S standard using EPA Methods 11, 15, 15A, or 16. [40 CFR 60.106(e)] Federally Enforceable Through Title V Permit
134. For any periods for which sulfur dioxide or oxides emissions data are not available, the operator shall submit a signed statement indicating if any changes were made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit. Operations of the control system and affected facility during periods of data unavailability are to be compared with operation of the control system and affected facility before and following the period of data unavailability. [40 CFR 60.107(d)] Federally Enforceable Through Title V Permit
135. The owner or operator shall submit the reports required under this subpart to the District semiannually for each six-month period. All semiannual reports shall be postmarked by the 30th day following the end of each six-month period. The owner or operator shall submit a signed statement certifying the accuracy and completeness of the information contained in the report. [40 CFR 60.107(e) and 60.107(f)] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
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136. The operator shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
137. Compliance with permit conditions in the Title V permit shall be deemed compliance with SJVUAPCD Rule 4451 (Amended December 17, 1992). A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
138. Compliance with permit conditions in the Title V permit shall be deemed compliance with SJVUAPCD Rule 4452 (Amended December 17, 1992). A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
139. Compliance with permit conditions in the Title V permit shall be deemed compliance with 40 CFR 60 Subpart GGG. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

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San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-33-41-2

EXPIRATION DATE: 08/31/2007

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

EQUIPMENT DESCRIPTION:

3,360,000 GALLON FIXED ROOF PETROLEUM STORAGE TANK #80006 WITH VAPOR RECOVERY SYSTEM SERVING TANKS S-33-42, S-33-46 AND MARKETING TERMINAL S-3303-1 WITH VAPOR COMPRESSORS, VAPOR HOLDING TANK, CONDENSATE TANK AND MISC. PUMPS, PIPING AND VESSELS

PERMIT UNIT REQUIREMENTS

1. The tank shall be equipped with a vapor control system consisting of vapor and condensate collection systems capable of reducing VOC emissions by at least 95%, except for those periods described below when operation of the vapor control system is not required. [District Rule 4623, 5.6.1 and 40 CFR 60.112a(a)(3)] Federally Enforceable Through Title V Permit
2. All tank openings and fittings shall remain gas tight (as defined by Rule 4623) during normal operation, except for those periods described below when operation of the vapor control system is not required. [District Rule 4623] Federally Enforceable Through Title V Permit
3. Vapor control system serving marketing terminal truck loading operation S-3303-1 shall be in use at all times when marketing terminal truck loading operation is operating. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Tank vapor control system shall be in use at all times, except when tank is storing treated wastewater, liquids with a true vapor pressure less than 0.2 psia, liquids with an initial boiling point of 302 deg F or higher, or when tank is undergoing maintenance or cleaning. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Tank may be disconnected from vapor control system during maintenance and cleaning periods provided liquids and vapors subject to Rule 4623 are completely removed and vapor lines are isolated. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Permittee shall receive written or faxed approval from the District Compliance division prior to tank vapor control system disconnection. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Upon reconnection to vapor control system, permittee shall demonstrate using a portable hydrocarbon monitor that all tank pressure relief valves and other fugitive components associated with the tank are leak free, as defined in Rule 4623. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Permittee shall keep a record of each period of storage when tank vapor control system is not in operation and of the initial boiling point or true vapor pressure of each organic liquid stored in the tank during such periods. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Collected condensate shall be piped only to regular gasoline tank. [District NSR Rule] Federally Enforceable Through Title V Permit
10. Compressor(s) shall activate when tank internal pressure exceeds 0.2 psig. [District NSR Rule] Federally Enforceable Through Title V Permit
11. Gasoline condensate holding tank shall vent only to vapor holding tank #73-S-31, and vapor holding tank shall have no open vents. [District NSR Rule] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
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12. All vapor lines shall slope toward vapor holding tank. [District NSR Rule] Federally Enforceable Through Title V Permit
13. Collected vapors shall discharge only to refinery fuel gas or flare gas system. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a gas-tight cover which shall be closed at all times except during gauging or sampling. Gas-tight shall be defined as emitting no more than 10,000 ppmv, above background, of methane measured at a distance of one centimeter from the potential source with an instrument calibrated with methane in accordance with EPA Method 21. Emissions in excess of this limit shall be considered a leak. [District Rule 4623, 5.6.2] Federally Enforceable Through Title V Permit
15. All piping, valves and fittings shall be constructed and maintained in a gas-tight condition. Gas-tight shall be defined as emitting no more than 10,000 ppmv, above background, of methane measured at a distance of one centimeter from the potential source with an instrument calibrated with methane in accordance with EPA Method 21. Emissions in excess of this limit shall be considered a leak. [District Rule 4623, 5.6.3] Federally Enforceable Through Title V Permit
16. All piping, fittings, and valves 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 provisions of this permit. If any of the tank components are found to leak during an annual inspection, the inspection frequency for that component type shall be changed from annual to quarterly. If no tank components are subsequently found to be leaking during five consecutive inspections, the inspection frequency may be changed from quarterly to annual. Components located in inaccessible (over 15 feet above ground when access is required from the ground or over 6 feet away from a platform when access is required from the platform) locations shall be inspected at least annually and components located in unsafe areas shall be inspected and repaired at the next process unit turnaround (the scheduled shutdown of a unit for maintenance and repair work). [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
17. A facility operator, upon detection of a leaking component, shall affix to that component a weatherproof readily visible tag bearing the date on which the leak is detected. The tag shall remain in place until the leaking component is repaired, reinspected and found to be in compliance with the requirements of this rule. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
18. An operator shall reinspect a component for leaks within thirty working days after the date on which the component is repaired. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
19. Any component leak shall be repaired to a leak-free condition or vented to a flare satisfying the requirements of 40 CFR 60.18 or to a vapor control device that is at least 95 percent efficient as measured by EPA Method 25 within fifteen (15) calendar days of detection. The APCO may grant a ten (10) calendar day extension provided the operator demonstrates that necessary and sufficient actions are being taken to correct the leak within this time period. Any vapor control device, other than a flare, used to comply with this condition shall demonstrate at least 95% control efficiency as measured by EPA Method 25 at least annually. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
20. If the leaking component is an essential part of a critical process unit which cannot be immediately shut down for repairs, the operator shall 1) Minimize the leak within 15 calendar days; and 2) If the leak which has been minimized still exceeds the concentration allowed by this permit, the essential component shall be repaired to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection. A critical process unit is any process unit which would result in the automatic shutdown of other process units if it were shut down. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
21. Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date of leak detection, and method of detection; 3) Date and emission level of recheck after leak is repaired; 4) Identification and location of essential parts of critical process units found leaking that cannot be repaired until the next process unit turnaround; and 5) Method used to minimize the leak from essential parts of critical process units which cannot be repaired until the next process unit turnaround. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
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22. Operator shall keep a record of liquids stored in each container, storage temperature, the True vapor pressure (TVP), and the API gravity of such liquids. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
23. Control efficiency shall be determined by a comparison of controlled emissions to those emissions which would occur from a fixed or cone roof tank in the same product service without a vapor recovery system. Emissions shall be determined based on tank emission factors in EPA Publication AP-42, component counts for fugitive emissions sources, recognized emission factors for fugitive emission sources and the efficiency of any VOC destruction device. [District Rule 4623, 6.4] Federally Enforceable Through Title V Permit
24. The efficiency of any VOC destruction device shall be measured by EPA Method 25, 25a, or 25b, and analysis of halogenated exempt compounds shall be analyzed by ARB Method 432. [District Rule 4623, 6.2.5] Federally Enforceable Through Title V Permit
25. The operator shall ensure that the vapor recovery system is functional and is operating as designed whenever emissions are being vented to it. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
26. True vapor pressure shall be measured using Reid vapor pressure ASTM Method D323-82 modified by maintaining the hot water bath at storage temperature. Where storage temperature is above 100 °F true vapor pressure shall be determined by Reid vapor pressure at 100 °F and ARB approved calculations. [District Rule 4623, 6.2.2 and District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
27. True vapor pressure of crude oil with an API (American Petroleum Institute) gravity less than 30°, as determined by API 2547, may be determined by Headspace Gas Chromatography using the procedures from ARB Evaluation of a Method for Determining Vapor Pressures of Petroleum Mixtures by Headspace Gas Chromatography, October 1990. [District Rule 4623, 6.2.3 and District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
28. Operator shall determine the true vapor pressure of the petroleum liquid stored in the tank at least once per year in accordance with methods described in section 6.2 of District Rule 4623 (amended 12/17/1992). Determinations shall be made annually during summer and whenever there is a change in the source or type of petroleum entering the tank. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
29. Construction, reconstruction, or modification of this unit was commenced after May 18, 1978 and prior to July 23, 1984. Therefore, the requirements of 40 CFR 60 Subpart K and Kb do not apply to this source. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
30. As used in this permit, the term "source or type of petroleum" shall mean petroleum liquids with similar characteristics. The operator shall maintain records of API gravity of petroleum liquids store in this unit to determine which oil are from common source. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-33-67-1

EXPIRATION DATE: 08/31/2007

SECTION: 28 **TOWNSHIP:** 29S **RANGE:** 27E

EQUIPMENT DESCRIPTION:

30,000 BBL FIXED ROOF PETROLEUM STORAGE TANK #30M02

PERMIT UNIT REQUIREMENTS

1. Tank organic liquid throughput shall not exceed 60,000 bbl/day. Permittee shall maintain daily records of tank throughput and shall make such records readily available for District inspection upon request. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
2. The owner or operator shall not store, hold, or place any organic liquid with the TVP equal to or greater than 1.5 psia into this tank. [District Rule 4623, 5.1] Federally Enforceable Through Title V Permit
3. Operator shall keep a record of liquids stored in each container, storage temperature, the True vapor pressure (TVP), and the API gravity of such liquids. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
4. True vapor pressure shall be measured using Reid vapor pressure ASTM Method D323-82 modified by maintaining the hot water bath at storage temperature. Where storage temperature is above 100 °F true vapor pressure shall be determined by Reid vapor pressure at 100 °F and ARB approved calculations. [District Rule 4623, 6.2.2 and District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
5. True vapor pressure of crude oil with an API (American Petroleum Institute) gravity less than 30°, as determined by API 2547, may be determined by Headspace Gas Chromatography using the procedures from ARB Evaluation of a Method for Determining Vapor Pressures of Petroleum Mixtures by Headspace Gas Chromatography, October 1990. [District Rule 4623, 6.2.3 and District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
6. Operator shall determine the true vapor pressure of the petroleum liquid stored in the tank at least once per year in accordance with methods described in section 6.2 of District Rule 4623 (amended 12/17/1992). Determinations shall be made annually during summer and whenever there is a change in the source or type of petroleum entering the tank. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
7. Construction, reconstruction, or modification of this unit was commenced prior to June 11, 1973. Therefore, the requirements of 40CFR 60 Subpart K, Ka and Kb do not apply to this source. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
8. As used in this permit, the term "source or type of petroleum" shall mean petroleum liquids with similar characteristics. The operator shall maintain records of API gravity of petroleum liquids store in this unit to determine which oil are from common source. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

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

APPENDIX D

New Firewater Pumps Engine Data

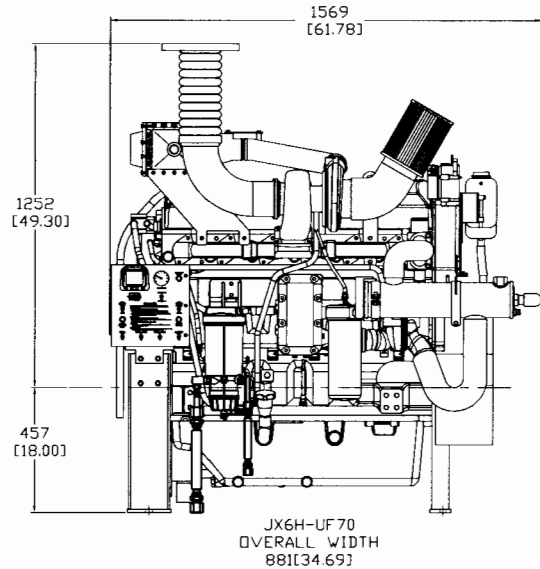
CLARKE

FIRE PUMP DRIVERS

JX6H-UF30
JX6H-UF40

MODELS
JX6H-UF50
JX6H-UF60
JX6H-UF70

FM-UL-cUL Approved Ratings BHP/kW			
JX6H MODEL	OPERATING SPEED		
	1470	1760	2100
UF30	350 261	420 313	430 322
UF40	380 283	460 343	485 362
UF50	405 302	485 362	510 380
UF60	430 321	510 380	525 392
UF70	485 362	575 429	575 429



Engine Equipment

Equipment	Standard	Optional
Air Cleaner	Direct Mounted, Washable, Indoor Service	Disposable, Drip proof, Indoor Service Outdoor Type
Alternator	24V-DC, 40 Amps; w/Belt Guard	
Coupling	Faulk Coupling, Engine Half 1090T10 Coupling	Drive Shaft & Guard; SC2140 for UF30 & UF40 models, SC2155 for UF50, UF60 & UF70 models
Droop	9%	4% 0%
Exhaust Blankets	For Manifolds & Turbocharger	
Exhaust Flex Connection		SS Flex, 150# Flange
Flywheel Housing	S.A.E. #2	
Flywheel Power Take Off	11.5" S.A.E. Industrial Flywheel Connection	
Fuel Connections	Fire Resistant Flexible Supply & Return Lines	
Fuel Filter	Primary Filter w/Priming Pump	
Fuel Injection System	Unit Injectors w/electronic control	
Engine Heater	230V-AC, 2500 Watt	115V-AC, 2500 Watt
Governor, Speed	Electronic	
Heat Exchanger	Tube & Shell Type, 60 PSI w/NPTF Connections	

Equipment	Standard	Optional
Instrument Panel	Multimeter to display: Tachometer, Hourmeter, Water Temperature & Oil Pressure. Voltmeter with selector switch	
Junction Box	Integral with Instrument Panel; For DC Wiring Interconnection to Engine Controller	
Lube Oil Cooler	Engine Water Cooled, Plate Type	
Lube Oil Filter	Full Flow w/By-Pass Valve	
Lube Oil Pump	Gear Driven, Gear Type	
Manual Start Controls	On Instrument Panel	
Overspeed Control	Electronic w/Reset	
Raw Water Solenoid Operation	Automatic from Engine Controller & from Instrument Panel	
Run Solenoid	24V-DC Energized to Stop (ETS)	
Run-Stop Control	On Instrument Panel With Control Position Warning Light	
Starter	One (1) 24V-DC	
Throttle Control	Adjustable Speed Control by increase/decrease button, Tamper Proof	
Water Pump	Gear Driven, Centrifugal Type	

Note: Diesel Controller needs to add 2 signals: Injector Failure, Alternate ECM Selected



LISTED
513Y



meets
NFPA-20
Requirements



approved
1333

Specifications

Item	JU6H Models				
	UF30	UF40	UF50	UF60	UF70
Number of Cylinders	6				
Aspiration	TJWA	TRWA			
Rotation*	Clockwise (CW)				
Weight - lb (kg)	3150 (1429)	3250 (1474)			
Compression Ratio	16:1				
Displacement - cu. in. (l)	766 (12.5)				
Engine Type	4 Cycle - Inline				
Bore & Stroke - in. (mm)	5.00 (127) x 6.50 (165)				
Installation Drawing	D - 546				
Wiring Diagram	C07957				
Engine Series	John Deere 6125 Series				

Abbreviations: CW – Clockwise TJWA – Turbocharged with Jacket Water Aftercooling TRWA – Turbocharged with Raw Water Aftercooling

*Rotation viewed from Heat Exchanger / Front of engine CCW Rotation is not available.

† Engine intended for Indoor use or inside weatherproof enclosure only

† ENGINE RATINGS BASELINES

Engines are rated at standard SAE conditions of 29.61 in. (7521 mm) Hg barometer and 77°F (25°C) inlet air temperature [approximates 300 ft. (91.4 m) above sea level] by the testing laboratory (see SAE Standard J 1349).

A deduction of 3 percent from engine horsepower rating at standard SAE conditions shall be made for diesel engines for each 1000 ft. (305 m) altitude above 300 ft. (91.4 m).

A deduction of 1 percent from engine horsepower rating as corrected to standard SAE conditions shall be made for diesel engines for every 10°F (5.6°C) above 77°F (25°C) ambient temperature.

CERTIFIED POWER AT ANY SPEED

Although FM-UL Certified BHP ratings are shown at specific speeds, Clarke engines can be applied at any intermediate speed. To determine the intermediate certified power, make a linear interpolation from the Clarke FM-UL certified power curve. Contact Clarke or your Pump OEM representative to obtain details.

CLARKE

www.clarkefire.com

CLARKE Fire Protection Products, Inc.

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Cincinnati, Ohio 45241
United States of America

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C131121 4/05

Fire Protection Products

CLARKEUK, Ltd.

Grange Works, Lomond Rd.
Coatbridge, ML5-2NN
United Kingdom

Tel +44-1236-429946 Fax +44-1236-427274

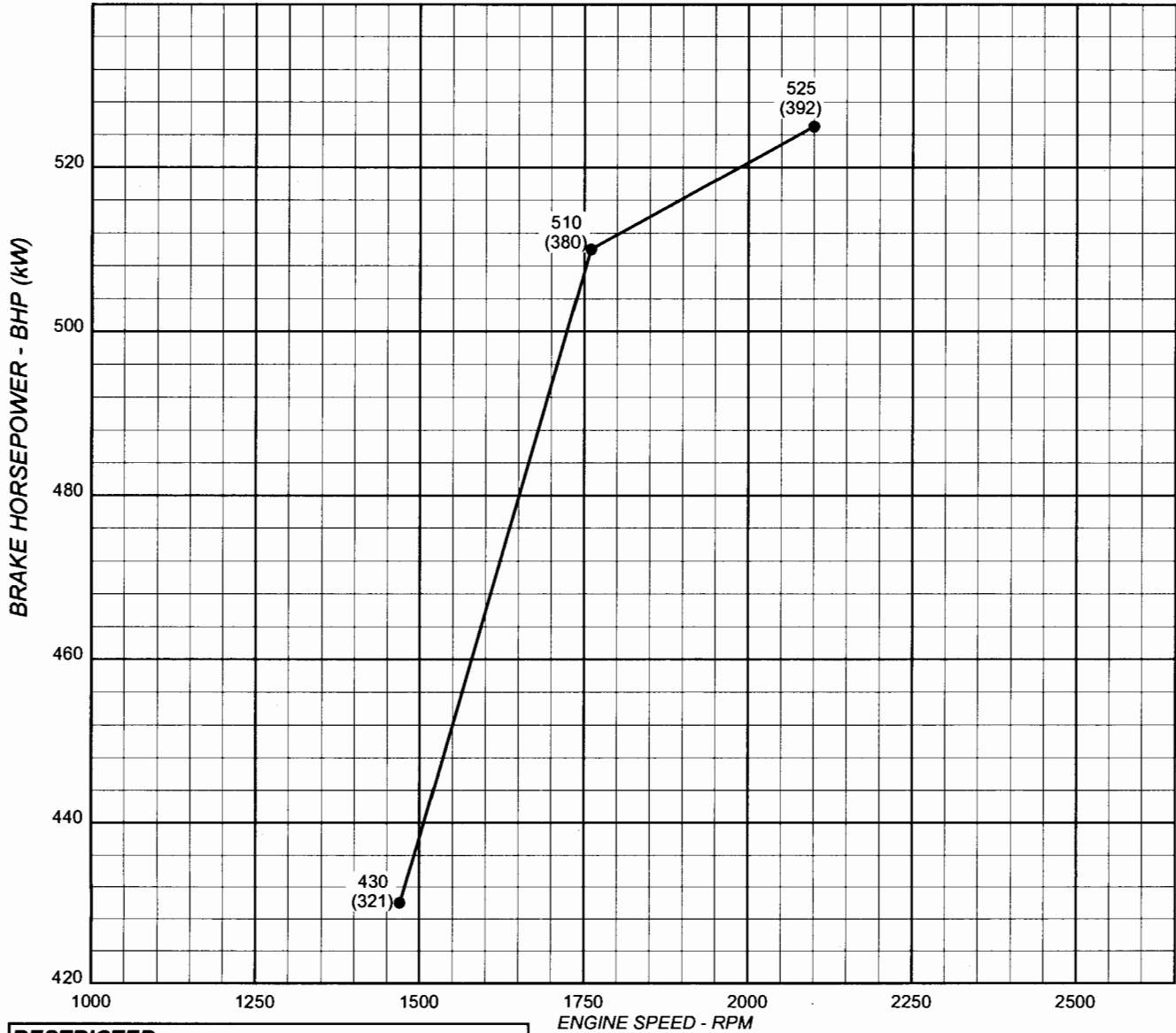
Specifications and information contained in this brochure subject to change without notice.

Printed in U.S.A.

CLARKE

Fire Protection Products, Inc.

FIRE PUMP MODEL: JX6H-UF60
Heat Exchanger Cooled
RE501587 Turbocharger
Raw Water Charge Cooling



RESTRICTED:
 USE ONLY FOR STAND-BY FIRE PUMP APPLICATIONS

ENGINE PERFORMANCE:
 STANDARD CONDITIONS: (SAE J1349, ISO 3046)
 77°F (25°C) AIR INLET TEMPERATURE
 29.61 IN. (751.1MM) HG BAROMETRIC PRESSURE
 #2 DIESEL FUEL (SEE C13940)

● — ● NAMEPLATE BHP (MAXIMUM PUMP LOAD)

Ken Waaligman
 KEN WAALIGMAN 11MAY04

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CREATED <i>KCW</i>	DATE CREATED 05/11/04
ENGINE MODEL JX6H-UF60	
DRAWING NO. C131086	REV A

**JX6H-UF60
INSTALLATION & OPERATION DATA**

Basic Engine Description

Engine Manufacturer.....	John Deere Co.
Ignition Type.....	Compression (Diesel)
Number of Cylinders.....	6
Bore and Stroke - in.(mm).....	5.00 (127) x 6.50 (165)
Displacement - in. ³ (L).....	763 (12.5)
Compression Ratio.....	14.7:1
Valves per cylinder - Intake.....	2
Exhaust.....	2
Combustion System.....	Unit Injection
Engine Type.....	In-Line, 4 Stroke Cycle
Aspiration.....	Turbocharged
Firing Order (CW Rotation).....	1-5-3-6-2-4
Charge Air Cooling Type.....	Raw Water Cooled
Rotation (Viewed from Front) - Clockwise.....	Standard
Counter-Clockwise.....	Not Available
Engine Crankcase Vent System.....	Open
Installation Drawing.....	D-546

Cooling System

	<u>1470</u>	<u>1760</u>	<u>2100</u>
Engine H ₂ O Heat -Btu/sec.(kW).....	98 (104)	130 (137)	134 (142)
Engine Radiated Heat - Btu/sec.(kW).....	48 (46)	54 (57)	56 (59)
Heat Exchanger Minimum Flow			
60°F (15°C) Raw H ₂ O - gal/min. (L/min.).....	20 (76)	26 (98)	28 (106)
95°F (35°C) Raw H ₂ O - gal/min. (L/min.).....	24 (91)	30 (114)	32 (121)
Heat Exchanger Maximum Cooling H ₂ O			
Inlet Pressure - bar (lb./in. ²) (kPa).....	4 (60) (400)		
Flow - gal./min (L/min.).....	80 (302)		
Thermostat, Start to Open - °F (°C).....	180 (82)		
Fully Opened - °F (°C).....	202 (94)		
Engine Coolant Capacity - qt. (L).....	29.6 (28)		
Coolant Pressure Cap - lb./in. ² (kPa).....	10 (69)		
Maximum Engine H ₂ O Temperature - °F (°C).....	212 (100)		
Minimum Engine H ₂ O Temperature - °F (°C).....	160 (71)		

Electric System - DC

System Voltage (Nominal).....	24
Battery Capacity for Ambients Above 32°F (0°C)	
Voltage (Nominal).....	12
Qty. per Battery Bank.....	2
SAE size per J537.....	8D-900
CCA @ 0°F (-18°C).....	900
Reserve Capacity - Minutes.....	430
Battery Cable Circuit*, Max Resistance - ohm.....	0.0012
Battery Cable Minimum Size	
0 -120 in. Circuit* Length.....	0
121 - 160 in. Circuit* Length.....	0
161 - 200 in. Circuit* Length.....	0
Charging Alternator Output - Amp.....	40
Starter Cranking Amps - @ 60°F (15°C).....	600

**Positive and Negative Cables Combined Length*

**JX6H-UF60
INSTALLATION & OPERATION DATA (Continued)**

Exhaust System	1470	1760	2100
Exhaust Flow - ft. ³ /min. (m ³ /min.).....	1811 (51)	2540 (72)	2774 (79)
Exhaust Temperature - °F (°C).....	929 (498)	862 (461)	812 (433)
Maximum Allowable Back Pressure - in. H ₂ O (kPa).....	30 (7.5)		
Minimum Exhaust Pipe Dia. - in. (mm)**.....	6 (152)		

Fuel System			
Fuel Consumption - gal./hr. (L/hr.).....	19 (73)	25 (93)	26 (98)
Fuel Return - gal./hr. (L/hr.).....			
Total Supply Fuel Flow - gal./hr (L/hr.).....			
Fuel Pressure - lb./in. ² (kPa).....	3-6 (21-41)		
Minimum Line Size - Supply - in. (mm)**.....	75 Sch. 40 - Black		
Minimum Line Size - Return - in. (mm)**.....	50 Sch. 40 - Black		
Maximum Allowable Fuel Pump Suction			
With Clean Filter - in. H ₂ O (mH ₂ O).....	100 (2.5)		
Maximum Allowable Fuel Head above Fuel pump, Supply or Return - ft(m)..	9 (2.7)		
Fuel Filter Micron Size.....	2		

Heater System	
Jacket Water Heater.....	Standard
Wattage (Nominal).....	2500
Voltage - AC, 1P.....	230 (+5%, -10%)
Optional Voltage - AC, 1P.....	115 (+5%, -10%)
Lube Oil Heater Wattage	
(Required Option When Ambient is Below 40°F (4°C)).....	150

Induction Air System			
Air Cleaner Type.....	Indoors Service Only - Washable		
Air Intake Restriction Maximum Limit			
Dirty Air Cleaner - in. H ₂ O (kPa).....	5.0 (1.2)		
Clean Air Cleaner - in. H ₂ O (kPa).....	1.0 (0.2)		
Engine Air Flow - ft. ³ /min. (m ³ /min.).....	700 (19.8)	1032 (29.2)	1171 (33.2)
Maximum Allowable Temperature (Air To Engine Inlet) - °F (°C)***.....	130 (54)		

Lubrication System	
Oil Pressure - normal - lb./in. ² (kPa).....	45 (310)
In Pan Oil Temperature - °F (°C).....	239 (115)
Total Oil Capacity with Filter - qt. (L).....	42 (40)

Performance			
BMEP - lb./in. ² (kPa).....	286 (1973)	300 (2071)	259 (1789)
Piston Speed - ft./min. (m/min.).....	1593 (485)	1907 (581)	2275 (693)
Mechanical Noise - dB(A) @ 1M.....	C131520		
Power Curve.....	C131086		

** Based On Nominal System. Flow Analysis Must Be Done To Assure Adherence To System Limitations.
(Minimum Exhaust pipe Diameter is based on 15 feet of pipe, one elbow, and a silencer
pressure drop no greter than one half the max. allowable back pressure.)

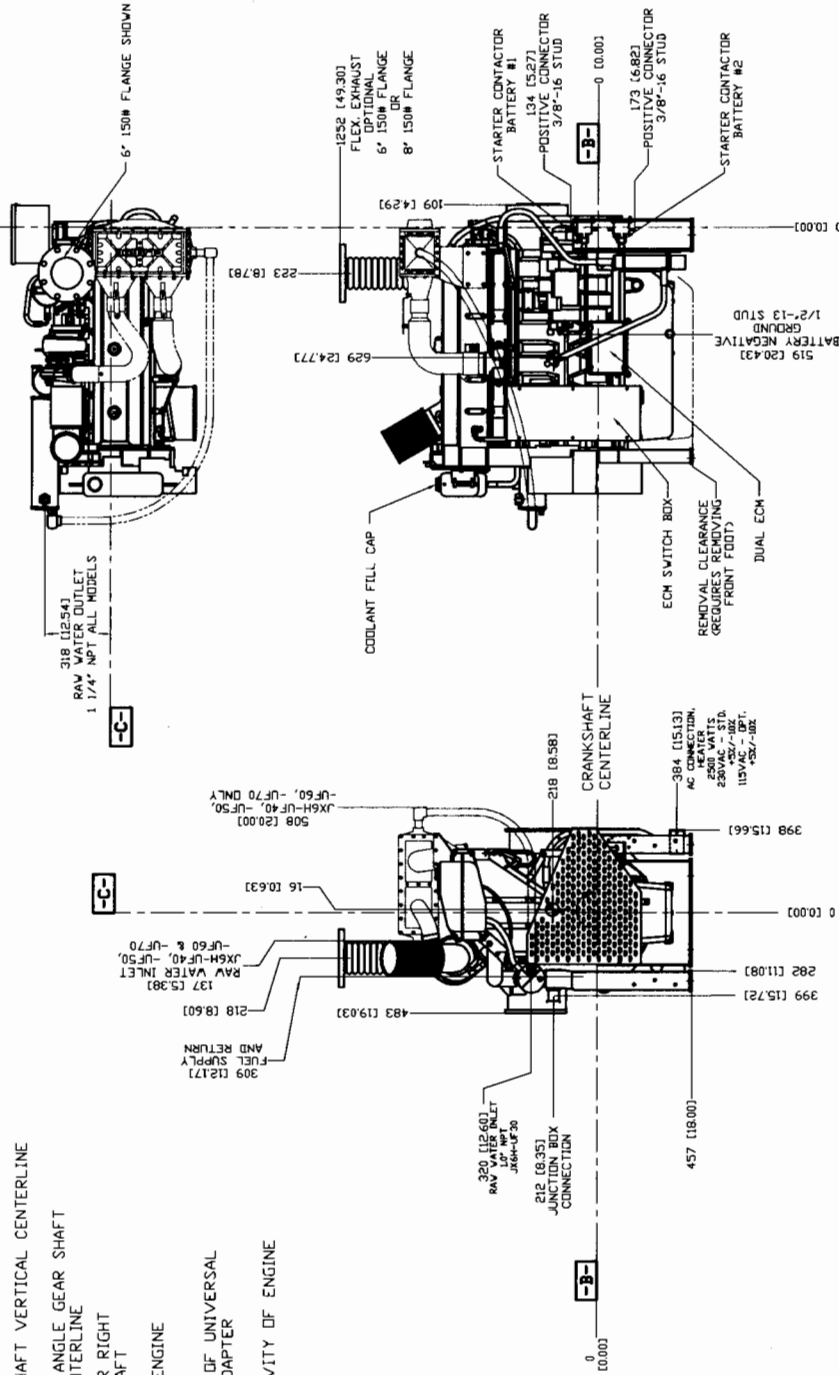
*** Review For Power Deration If Air Entering Engine Exceeds °77F (25°C)

DATUMS:

- A- MOUNTING FACE OF FLYWHEEL
- B- ENGINE CRANKSHAFT HORIZONTAL CENTERLINE
- C- ENGINE CRANKSHAFT VERTICAL CENTERLINE
- D- PUMP OR RIGHT ANGLE GEAR SHAFT HORIZONTAL CENTERLINE
- E- END OF PUMP OR RIGHT ANGLE GEAR SHAFT
- F- REAR FACE OF ENGINE HALF FALK HUB
- G- MOUNTING FACE OF UNIVERSAL DRIVE SHAFT ADAPTER
- ◆ CENTER OF GRAVITY OF ENGINE

CAUTION:
ALL PLUMBING MUST BE SUPPORTED AND/OR ISOLATED SO THAT NO WEIGHT OR STRESS IS APPLIED TO ANY ENGINE COMPONENT

ATTENTION:
REFER TO THE SPECIFIC MODEL 'INSTALLATION AND OPERATION DATA' FOR INSTALLATION GUIDELINES



VIEW FROM FRONT OF ENGINE

REV	DESCRIPTION	DATE	BY	CHKD	APP'D	DATE	BY	CHKD	APP'D
E	ADDED TOP VIEW OF ENGINE	13/03/06	SK	SK	SK	13/03/06	SK	SK	SK

CLARKE	Fire Protection Products, Inc.
INSTALLATION DRAWING	FIRE PUMP ENGINES
JK-UF30, -UF40, -UF50, -UF60 AND -UF70	
DATE	13/03/06
BY	SK
CHKD	SK
APP'D	SK
TITLE	JK-UF30, -UF40, -UF50, -UF60 AND -UF70
MATERIAL	JK-UF30, -UF40, -UF50, -UF60 AND -UF70
SCALE	AS SHOWN
UNIT	INCHES
PROJ. NO.	DS46
REV. NO.	1
REV. NO.	2

DRAWING SUBJECT TO CHANGE WITHOUT NOTICE

DO NOT SCALE

CLARKE

Fire Protection Products, Inc.

CARB ATCM Compliant Fire Pump Driver Models and Ratings

Heat Exchanger Cooled

ENGINE INFORMATION			EMISSION OUTPUTS (1)				EMISSION LIMITS		
CLARKE MODEL NUMBER	RPM	NAMEPLATE BHP	g / HP-hr				g / HP-hr		
			NMHC	NOx	CO	PM	NOx + NMHC	CO	ATCM PM
JU4H-UF10 (2)	1760	41	0.72	4.30	2.13	0.09	5.6	4.1	0.45
JU4H-UF10 (2)	2100	51	0.68	3.88	2.58	0.11	5.6	3.7	0.30
JU4H-UF10 (2)	2350	56	0.75	3.80	3.39	0.10	5.6	3.7	0.30
JU4H-UF14 (3)	2800	70	0.48	4.22	2.38	0.18	5.6	3.7	0.30
JU4H-UF14 (3)	3000	71	0.60	3.85	2.80	0.18	5.6	3.7	0.30
JU4H-UF20 (2)	1760	60	0.41	4.31	1.20	0.11	5.6	3.7	0.30
JU4H-UF20 (2)	2100	67	0.45	4.08	1.81	0.14	5.6	3.7	0.30
JU4H-UF20 (2)	2350	72	0.48	3.89	2.18	0.10	5.6	3.7	0.30
JU4H-UF22 (2)	2350	72	0.48	3.89	2.18	0.10	5.6	3.7	0.30
JU4H-UF22 (2)	2800	75	0.54	3.67	2.89	0.07	5.6	3.7	0.30
JU4H-UF24 (3)	2800	80	0.30	4.15	1.71	0.15	5.6	3.7	0.30
JU4H-UF24 (3)	3000	83	0.33	3.94	2.36	0.18	5.6	3.7	0.30
JU4H-UF30 (2)	1760	64	0.34	5.28	1.49	0.12	5.6	3.7	0.30
JU4H-UF30 (2)	2100	79	0.35	5.25	0.96	0.14	5.6	3.7	0.30
JU4H-UF30 (2)	2350	85	0.34	4.41	0.56	0.15	5.6	3.7	0.30
JU4H-UF32 (2)	2350	85	0.34	4.41	0.56	0.15	5.6	3.7	0.30
JU4H-UF32 (2)	2600	85	0.34	4.41	0.56	0.15	5.6	3.7	0.30
JU4H-UF34 (3)	2800	104	0.36	3.15	0.75	0.12	4.9	3.7	0.22
JU4H-UF34 (3)	3000	115	0.32	3.24	0.90	0.13	4.9	3.7	0.22
JU4H-UF40 (2)	1780	94	0.20	5.40	1.31	0.12	5.6	3.7	0.22
JU4H-UF40 (2)	2100	105	0.28	4.64	0.81	0.14	4.9	3.7	0.22
JU4H-UF40 (2)	2350	106	0.28	4.64	0.47	0.13	4.9	3.7	0.22
JU4H-UF42 (2)	2350	106	0.28	4.64	0.47	0.13	4.9	3.7	0.22
JU4H-UF42 (2)	2600	106	0.32	3.31	0.27	0.14	4.9	3.7	0.22
JU4H-UF50 (2)	1760	110	0.17	4.73	1.11	0.13	4.9	3.7	0.22
JU4H-UF50 (2)	2100	130	0.20	4.70	0.86	0.14	4.9	3.7	0.22
JU4H-UF50 (2)	2350	127	0.22	4.68	0.42	0.11	4.9	3.7	0.22
JU4H-UF52 (2)	2350	127	0.22	4.68	0.42	0.11	4.9	3.7	0.22
JU4H-UF52 (2)	2600	127	0.27	3.90	0.27	0.12	4.9	3.7	0.22
JU4H-UF54 (3)	2800	145	0.21	3.57	0.70	0.11	4.9	3.7	0.22
JU4H-UF54 (3)	3000	145	0.20	3.48	0.85	0.13	4.9	3.7	0.22
JU6H-UF30 (2)	1760	140	0.20	4.70	0.45	0.11	4.9	3.7	0.22
JU6H-UF30 (2)	2100	160	0.23	4.87	0.54	0.13	4.9	3.7	0.22
JU6H-UF30 (2)	2350	160	0.28	4.43	0.60	0.15	4.9	3.7	0.22
JU6H-UF32 (2)	2350	160	0.28	4.43	0.60	0.15	4.9	3.7	0.22
JU6H-UF32 (2)	2600	160	0.32	4.58	0.66	0.15	4.9	3.7	0.22
JU6H-UF50 (2)	1760	183	0.14	4.78	0.49	0.13	4.9	2.6	0.15
JU6H-UF50 (2)	2100	210	0.13	4.77	0.59	0.14	4.9	2.6	0.15
JU6H-UF50 (2)	2350	210	0.18	4.74	0.56	0.13	4.9	2.6	0.15
JU6H-UF52 (2)	2350	210	0.18	4.74	0.56	0.13	4.9	2.6	0.15
JU6H-UF52 (2)	2600	210	0.18	4.68	0.59	0.13	4.9	2.6	0.15
JU6H-UF60 (2)	1760	200	0.14	4.76	0.47	0.15	4.9	2.6	0.15
JU6H-UF60 (2)	2100	240	0.16	4.74	0.59	0.14	4.9	2.6	0.15
JU6H-UF60 (2)	2350	240	0.20	4.70	0.55	0.13	4.9	2.6	0.15
JU6H-UF62 (2)	2350	240	0.20	4.70	0.55	0.13	4.9	2.6	0.15
JU6H-UF62 (2)	2600	240	0.23	4.67	0.61	0.09	4.9	2.6	0.15
JW6H-UF40 (3)	2100	300	0.29	4.38	0.32	0.12	4.9	2.6	0.15
JX6H-UF60 (2)	2100	525	0.13	4.87	0.29	0.07	4.8	2.6	0.15
JX6H-UF70 (3)	2100	575	0.12	4.83	0.29	0.06	4.8	2.6	0.15

Radiator Cooled

ENGINE INFORMATION			EMISSION OUTPUTS (1)				EMISSION LIMITS		
CLARKE MODEL NUMBER	RPM	NAMEPLATE BHP	g / HP-hr				g / HP-hr		
			HC	NOx	CO	PM	NOx + NMHC	CO	ATCM PM
JU4R-UF09 (2)	1760	39	0.72	4.30	2.13	0.09	5.6	4.1	0.45
JU4R-UF09 (2)	2100	48	0.68	3.88	2.58	0.11	5.6	4.1	0.45
JU4R-UF09 (2)	2350	52	0.75	3.80	3.39	0.10	5.6	3.7	0.30
JU4R-UF13 (2)	2800	66.5	0.48	4.22	2.38	0.18	5.6	3.7	0.30
JU4R-UF13 (2)	3000	66.5	0.60	3.85	2.80	0.18	5.6	3.7	0.30
JU4R-UF19 (2)	1760	58.5	0.41	4.31	1.20	0.11	5.6	3.7	0.30
JU4R-UF19 (2)	2100	64.5	0.45	4.08	1.81	0.14	5.6	3.7	0.30
JU4R-UF19 (2)	2350	66	0.48	3.89	2.18	0.10	5.6	3.7	0.30
JU4R-UF21 (2)	2350	68	0.48	3.89	2.18	0.10	5.6	3.7	0.30
JU4R-UF21 (2)	2600	70.5	0.54	3.67	2.89	0.07	5.6	3.7	0.30
JU4R-UF23 (3)	2800	76.5	0.30	4.15	1.71	0.15	5.6	3.7	0.30
JU4R-UF23 (3)	3000	78	0.33	3.94	2.36	0.18	5.6	3.7	0.30
JU4R-UF40 (2)	1780	94	0.20	5.40	1.31	0.12	5.6	3.7	0.30
JU4R-UF40 (2)	2100	105	0.28	4.64	0.81	0.14	4.9	3.7	0.22
JU4R-UF40 (2)	2350	106	0.28	4.64	0.47	0.13	4.9	3.7	0.22
JU4R-UF49 (2)	1760	106	0.17	4.73	1.11	0.13	4.9	3.7	0.22
JU4R-UF49 (2)	2100	123	0.20	4.70	0.86	0.14	4.9	3.7	0.22
JU4R-UF49 (2)	2350	117	0.22	4.68	0.42	0.11	4.9	3.7	0.22
JU4R-UF51 (2)	2350	119	0.22	4.68	0.42	0.11	4.9	3.7	0.22
JU4R-UF51 (2)	2600	119	0.27	3.90	0.27	0.12	4.9	3.7	0.22
JU4R-UF53 (3)	2800	135	0.21	3.57	0.70	0.11	4.9	3.7	0.22
JU4R-UF53 (3)	3000	133	0.20	3.48	0.85	0.13	4.9	3.7	0.22

- Notes:
 (1) See attached disclaimer.
 (2) See disclaimer paragraphs 2-4.
 (3) See disclaimer paragraph 5.

APPENDIX E

Compliance Certifications



BIG WEST OF CALIFORNIA, LLC

A FLYING J Company

6451 Rosedale Highway • Bakersfield, CA 93308 • Phone 661.326.4200 • www.flyingj.com

September 7, 2006

Mr. Tom Goff
San Joaquin Valley Air Pollution Control District
Southern Region
2700 "M" Street, Suite 275
Bakersfield, CA 93301-2370

RECEIVED
SEP 08 2006
SJVAPCD
Southern Region

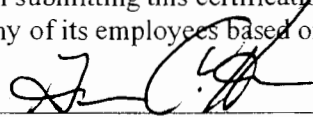
Re: Big West of California, LLC – Clean Fuels Project – Compliance Certification

Dear Mr. Goff:

In response to the District's request, I am providing this certification of compliance, as required by District Rule 2201, Section 4.15.2, to allow the District to determine that the permit applications associated the Big West of California, LLC Clean Fuels Project are complete. On behalf of Big West of California, LLC, I hereby certify, under penalty of perjury, the following:

- I am authorized to make this certification on behalf of Big West of California, LLC.
- This certification is made pursuant to District Rule 2201, Section 4.15.2.
- To the best of my knowledge, at 12:01 am on September 7, 2006 all major stationary sources owned or operated by Big West of California, LLC in the State of California were either in compliance or on a schedule of compliance with all applicable state and federal air quality emission limitations or standards.

Each of the statements made in this letter is made in good faith. Accordingly, it is Big West of California LLC's understanding in submitting this certification that the District shall take no action against Big West of California LLC or any of its employees based on any statement made in this certification.

Signed: 
Name: Gene Cotten, Refinery Manager
Dated: 9/7/06
Time: 5:00 AM (PM)

Thank you very much for your continued assistance in Big West of California's Clean Fuels Project. Please call Mr. Bill Chadick (661.326.4412) should you have any additional questions on this matter.

Very truly yours,

Gene Cotten
Vice President Refining
Refinery Manager
Big West of California, LLC

cc: Mr. Bill Chadick

RECEIVED
DEC 20 2006
SJVAPCD
Southern Region

San Joaquin Valley
Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

- SIGNIFICANT PERMIT MODIFICATION ADMINISTRATIVE
 MINOR PERMIT MODIFICATION AMENDMENT

COMPANY NAME: BIG WEST OF CALIFORNIA, LLC	FACILITY ID: S- 33
1. Type of Organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: Big West of California, LLC	
3. Agent to the Owner:	

II. COMPLIANCE CERTIFICATION (Read each statement carefully and initial all circles for confirmation):

- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).
- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.
- Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.
- Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:

Eugene C. Cotten
Signature of Responsible Official

12-19-06
Date

EUGENE COTTEN
Name of Responsible Official (please print)

REFINERY MANAGER, VICE PRESIDENT REFINING
Title of Responsible Official (please print)

APPENDIX F

HRA / AAQA Summary

San Joaquin Valley Air Pollution Control District Risk Management Review

To: L. Scandura, R. Karrs, D. Torri, AQE – Permit Services

From: Joe Aguayo, AQS – Technical Services

Date: August 8, 2008

Facility Name: Big West of California, LLC

Location: Bakersfield

Project #: S-1061149 S-1062742 S-1062741

Application #(s): S-33-407-0 S-33-13-18 S-3303-1-4
 S-33-408-0 S-33-67-4
 S-33-409-0 S-33-419-0
 S-33-410-0 S-33-420-0
 S-33-411-0 S-33-423-0
 S-33-413-0 S-33-424-0
 S-33-415-0 S-33-425-0
 S-33-416-0 S-33-426-0

A. RMR SUMMARY

Cumulative risks for the Clean Fuels Project (CFP) were reported for the PMI at which Maximum Individual Cancer Risk was calculated for a residential receptor (Receptor 4176). Risks for individual units are reported for the PMI at which each Hazard Index and Cancer Risk was highest. Receptor numbers are given in parentheses.

CFP Cumulative RMR Summary (Rec. 4176)¹	
Categories	Facility Totals
Prioritization Score	>1
Acute Hazard Index	7.89×10^{-2}
Chronic Hazard Index	1.11×10^{-2}
Maximum Individual Cancer Risk (10^{-6})	3.42

¹Includes only the risk estimated for new and previously permitted units at facility S-33.

RMR Summary Mild Hydrocracker	
Categories	Unit 13-18
Acute Hazard Index	7.41×10^{-4} (4140)
Chronic Hazard Index	5.05×10^{-4} (4176)
Maximum Individual Cancer Risk (10^{-6})	0.09 (4176)
T-BACT Required?	No
Special Permit Conditions?	No

RMR Summary for Tank 30M02	
Categories	Unit 67-4
Acute Hazard Index	1.24x10 ⁻⁵ (4144)
Chronic Hazard Index	2.07x10 ⁻⁵ (4144)
Maximum Individual Cancer Risk (10 ⁻⁶)	0.01 (4144)
T-BACT Required?	No
Special Permit Conditions?	No

RMR Summary for Hydrogen Plant (HGU2)	
Categories	Unit 407-0
Acute Hazard Index	1.49x10 ⁻³ (4144)
Chronic Hazard Index	1.05x10 ⁻³ (4144)
Maximum Individual Cancer Risk (10 ⁻⁶)	0.44 (4144)
T-BACT Required?	No
Special Permit Conditions?	No

RMR Summary for Vacuum Gas Oil Hydro-De-Sulfurization Unit (VGO-HDS)	
Categories	Unit 408-0
Acute Hazard Index	6.60x10 ⁻² (4144)
Chronic Hazard Index	6.34x10 ⁻³ (4140 and 4176)
Maximum Individual Cancer Risk (10 ⁻⁶)	0.09 (4176)
T-BACT Required?	No
Special Permit Conditions?	No

RMR Summary for Sour Water Ammonia to Ammonium Thiosulfate Unit (SWAATS)	
Categories	Unit 409-0
Acute Hazard Index	3.40x10 ⁻³ (4144)
Chronic Hazard Index	7.50x10 ⁻⁴ (4144)
Maximum Individual Cancer Risk (10 ⁻⁶)	0.13 (4144)
T-BACT Required?	No
Special Permit Conditions?	No

RMR Summary for Fluid Catalytic Cracking Unit (FCCU)	
Categories	Unit 410-0
Acute Hazard Index	3.09x10 ⁻³ (4144)
Chronic Hazard Index	9.98x10 ⁻⁴ (4144)
Maximum Individual Cancer Risk (10 ⁻⁶)	0.21 (4176)
T-BACT Required?	No
Special Permit Conditions?	No

RMR Summary for LPG Merox Treating Unit	
Categories	Unit 411-0
Acute Hazard Index	8.94x10 ⁻⁴ (4140)
Chronic Hazard Index	8.16x10 ⁻⁴ (4176)
Maximum Individual Cancer Risk (10 ⁻⁶)	0.24 (4176)
T-BACT Required?	No
Special Permit Conditions?	No

RMR Summary for Ground Flare	
Categories	Unit 413-0
Acute Hazard Index	1.92e-2 (4144)
Chronic Hazard Index	3.33e-4 (4140 and 4176)
Maximum Individual Cancer Risk (10 ⁻⁶)	0.26 (4140)
T-BACT Required?	No
Special Permit Conditions?	No

RMR Summary for General Cooling Tower	
Categories	Unit 415-0
Acute Hazard Index	7.77x10 ⁻⁵ (4176)
Chronic Hazard Index	4.90x10 ⁻⁵ (4176)
Maximum Individual Cancer Risk (10 ⁻⁶)	0.10 (4176)
T-BACT Required?	No
Special Permit Conditions?	No

RMR Summary for Alkylation Unit Cooling Tower	
Categories	Unit 416-0
Acute Hazard Index	5.35x10 ⁻⁵ (4144)
Chronic Hazard Index	8.17x10 ⁻⁵ (4176)
Maximum Individual Cancer Risk (10 ⁻⁶)	0.17 (4176)
T-BACT Required?	No
Special Permit Conditions?	No

RMR Summary for Emergency Diesel IC Engines	
Categories	Units 419-0, 420-0 and 429-0
Acute Hazard Index	0.0
Chronic Hazard Index	3.36x10 ⁻⁴ (4144)
Maximum Individual Cancer Risk (10 ⁻⁶)	0.70 (4144)
T-BACT Required?	No
Special Permit Conditions?	No

RMR Summary for 80K bbl Gasoline Tank	
Categories	Unit 423-0
Acute Hazard Index	4.49x10 ⁻⁵ (4144)
Chronic Hazard Index	5.57x10 ⁻⁵ (4144)
Maximum Individual Cancer Risk (10 ⁻⁶)	0.06 (4144)
T-BACT Required?	No
Special Permit Conditions?	No

RMR Summary Process Water Tank	
Categories	Unit 424-0
Acute Hazard Index	9.88e ⁻⁵ (4176)
Chronic Hazard Index	3.36e ⁻⁵ (4176)
Maximum Individual Cancer Risk (10 ⁻⁶)	0.03 (4176)
T-BACT Required?	No
Special Permit Conditions?	No

RMR Summary for Tank 20M01	
Categories	Unit 425-0
Acute Hazard Index	8.40x10 ⁻⁶ (4144)
Chronic Hazard Index	1.51x10 ⁻⁵ (4144)
Maximum Individual Cancer Risk (10 ⁻⁶)	0.01 (4144)
T-BACT Required?	No
Special Permit Conditions?	No

RMR Summary for Tank 20M02	
Categories	Unit 426-0
Acute Hazard Index	9.80x10 ⁻⁶ (4144)
Chronic Hazard Index	1.57x10 ⁻⁵ (4144)
Maximum Individual Cancer Risk (10 ⁻⁶)	0.01 (4144)
T-BACT Required?	No
Special Permit Conditions?	No

RMR Summary for Sales Terminal Loading Rack	
Categories	Unit S-3303-1-4
Acute Hazard Index	5.91x10 ⁻⁵ (4144)
Chronic Hazard Index	5.49x10 ⁻⁵ (4144)
Maximum Individual Cancer Risk (10 ⁻⁶)	0.05 (4144)
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:

All Units

No special conditions are required.

B. RMR REPORT

I. Project Description

Technical Services received a request in April 2006, to perform an Ambient Air Quality Analysis and a Risk Management Review for a proposed installation of: a 24,000 BPSD Vacuum Gas Oil Hydro-De-Sulfurization Unit, a 25,000 BPSD Fluid Catalytic Cracking Unit, a Sour Water Stripper, an 11,000 BPSD LPG Merox Treating Unit, a 11,000 BPSD Alkylation Unit a 28 MMSCFD Hydrogen Unit, a ATS unit to handle ammonia and sulfur removal, a low pressure Alky Unit Flare and a high pressure Ground Flare, a cooling tower for the alkylation unit, a cooling tower for the remaining cooling water needs, three (3) diesel fire pumps, and five (5) Storage Tanks. Included in this Risk Management Review are modifications to the following existing units: A Mild Hydrocracker, a Truck Loading Operation, and a Sales Terminal Loading Rack at S-3303. The RMR was completed in July 2006.

In December of 2006, Technical Services received revised Health Risk and Ambient Air Quality analyses from the Ashworth Leininger Group for the above project. This memorandum is a review of the risks estimated for those revised analyses. Changes to the project include the removal of the following emission sources: a low pressure Alkyl Unit Flare, a Steam Boiler, and 1 Diesel Fire Pump. The locations of the following units were also changed: The ATS unit, the General Cooling Tower, the HF Alkyl Cooling Tower, and the remaining 3 Diesel Fire Pumps.

In August 2008, the RMR was revised to include the results of modeling using AERMOD.

II. Analysis

Technical Services did not perform a prioritization using the District's HEARTs database. Since the previous total facility prioritization score was greater than one, a refined health risk assessment was required. Emissions calculated by Ashworth Leininger Group (see attachment) were input into the HARP model. In addition to the new and modified units in the Clean Fuels Project, all previously permitted and constructed new and modified units (since 1996) were modeled to determine cumulative impacts. The HARP dispersion module was used, with the attached source parameters and meteorological data for 2000 from Bakersfield to determine the maximum dispersion factors at the nearest residential, business and other sensitive receptors. These dispersion factors were input to the HARP risk module to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

Technical Services also performed an Ambient Air Quality Analysis (AAQA) for the following criteria pollutants: CO, NO_x, SO_x and PM₁₀. The emission rates used for criteria pollutant modeling are shown below:

Emissions Rates

		NOx g/s	SOx g/s	CO g/s	PM10g/s
VGOHTR		0.1438	0.0333	0.2189	0.0441
VGOFRHTR		0.1071	0.0248	0.1630	0.0329
H2REFORM		0.4904	0.4545	0.5971	0.6018
FCCUREG	Short	1.0604	1.4765	1.9046	1.1647
	Ann	2.1208	3.6913	16.1407	1.1647
MHC14H12		0.3748	0.0638	1.4904	0.0845
HFREBOIL		0.1645	0.1525	0.2003	0.2018
SWAATS		0.0000	0.2322	4.3994	0.0000
COOLT1		0.0000	0.0000	0.0000	0.0303
COOLT2		0.0000	0.0000	0.0000	0.0303
GNDFLARE	1hr	3.2444	12.5887	17.6532	N/A
	3hr	3.2444	4.1977	N/A	N/A
	8hr	2.4397	1.5755	13.2748	N/A
	24hr	0.8304	0.5266	N/A	0.3175
	Ann	0.0279	0.0057	N/A	0.0107
FIREPUMP	1hr	1.9425	0.0022	1.1375	N/A
	3hr	0.6475	0.0007	N/A	N/A
	8hr	0.2428	0.0003	0.1422	N/A
	24hr	0.0809	0.0001	N/A	0.0027
	Ann	0.0222	0.00002	N/A	0.0007
EMRFLARE		15.88	-	86.39	-

Results of the AAQA are as follows:

Criteria Pollutant Modeling Results*
Values are in $\mu\text{g}/\text{m}^3$

Pollutant	Avg Per	Max Imp.	Back Conc.	Total Conc.	CAAQS	NAAQS	Significance Impact Level
NOx	1h	195.42	138.95	334.37	470	N/A	-
	Ann	0.96	33.80	34.76	N/A	100	-
CO	1h	122.19	3,772.8	3894.99	23,000	40,000	-
	8h	32.90	2,515.4	2548.30	10,000	10,000	-
SOx	1h	86.11	78.44	164.55	655	N/A	-
	3h	86.11	39.22	125.33	N/A	1300	-
	24h	1.86	13.07	14.93	105	365	-
	Ann	0.42	5.23	5.65	N/A	80	-
PM10	24h	1.18 ¹	Non attainment	1.18	-	-	5
	Ann	0.44 ¹	Non attainment	0.44	-	-	1

¹The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

III. Conclusion

The acute and chronic indices are below 1.0, the cancer risk for the Clean Fuels Project is less than 1.0 in a million, and the cumulative cancer risk is less than 10 in a million. **In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).**

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

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

Based on the changes in the August 2008 analyses, overall risk for this project went down with respect to risk estimated using the April 2006 analyses and December 2006.

APPENDIX G

Modified Mild Hydrocracker Fugitive Emissions Calculations

Fugitive VOC Emissions
Mild Hydrocracker

Component Type	Service	Accessible	2002		2003		HAE		Increase			PE2	
			Count	VOC lb/yr	Count	VOC lb/yr	Count	VOC lb/yr	Count	L VOC lb/yr	G VOC lb/yr	Total VOC lb/yr	Count
CS	G	TRUE	5	3.73	5	5.11	5	4.42	2.5	0.00	2.21	7.5	6.63
DR	L	TRUE	37	17.57	37	24.70	37	21.14	18.5	10.57	0.00	55.5	31.70
FL	G	FALSE	56	10.09	56	24.72	56	17.40	28.0	0.00	8.70	84.0	26.11
FL	G	TRUE	620	166.67	618	216.56	620	191.61	310.0	0.00	95.81	930.0	287.42
FL	L	FALSE	4	1.09	4	2.50	4	1.80	2.0	0.90	0.00	6.0	2.70
FL	L	TRUE	172	44.01	172	60.88	172	52.45	86.0	26.22	0.00	258.0	78.67
OT	G	FALSE	4	0.92	4	2.43	4	1.68	2.0	0.00	0.84	6.0	2.52
OT	G	TRUE	48	23.93	48	24.82	48	24.38	24.0	0.00	12.19	72.0	36.57
OT	L	TRUE	21	9.28	21	13.66	21	11.47	10.5	5.73	0.00	31.5	17.20
PR	G	FALSE	2	0.67	2	2.44	2	1.56	1.0	0.00	0.78	3.0	2.33
PR	G	TRUE	27	13.97	27	17.31	27	15.64	13.5	0.00	7.82	40.5	23.46
PS	L	TRUE	2	507.61	2	22.12	2	264.86	1.0	132.43	0.00	3.0	397.30
TC	G	FALSE	283	25.01	283	39.97	283	32.49	141.5	0.00	16.24	424.5	48.73
TC	G	TRUE	3683	322.97	3679	468.53	3683	395.75	1841.5	0.00	197.88	5524.5	593.63
TC	L	FALSE	151	19.07	151	23.65	151	21.36	75.5	10.68	0.00	226.5	32.04
TC	L	TRUE	1513	126.37	1513	196.30	1513	161.34	756.5	80.67	0.00	2269.5	242.00
VL	G	FALSE	52	5.24	52	12.79	52	9.02	26.0	0.00	4.51	78.0	13.52
VL	G	TRUE	683	413.68	678	131.87	683	272.77	341.5	0.00	136.39	1024.5	409.16
VL	L	FALSE	1	0.04	1	0.06	1	0.05	0.5	0.02	0.00	1.5	0.07
VL	L	TRUE	177	31.87	177	33.16	177	32.51	88.5	16.26	0.00	265.5	48.77
Total				1743.81		1323.58		1533.69		283.49		483.36	766.85

Fugitive Emissions Increase - Speciated VOC

Mild Hydrocracker

Phase	L	G	Total
VOC Increase (lb/yr)	283.49	483.36	766.85
Speciation	Naphtha Fuel gas		
Units	wt%	lb/yr	wt%
Benzene	1.9	5.39	0.3263
Biphenyl	0	0.00	0.0000
1,3-Butadiene	0	0.00	0.2227
Cresols	0.04	0.11	0.0000
Cumene	0.059	0.17	0.0000
Cyclohexane	6	17.01	0.02479
Ethylene	0	0.00	0.3698
Ethyl Benzene	0.2	0.57	0.0082
H2S	0.000262882	0.00	0.0002629
Methanol	0	0.00	0
MTBE	0.00	0.00	0.00
n-Hexane	0.00	0.00	0.00
Naphthalene	0.012	0.03	0.0000000
Phenol	0	0.00	0
Propylene	0.014	0.04	1.004
Styrene	0	0.00	0
TMB-1,2,4	0.2	0.57	0
TMP-2,2,4	0.019	0.05	0.000
Toluene	0.2	0.57	0.0663
Xylene(s)	0.35	0.99	0.0133

APPENDIX H

Existing Refinery Storage Tanks Connected to the Refinery Vapor Control System Used as Models for Fugitive Component Counts of the New and Modified Tanks to be Connected to the Refinery Vapor Control System

Representative Existing Fixed Roof Tanks w/VRS Used as Models for New Tank Component Counts

Tank ID	Capacity (bbl)	Dia (ft)	Ht (ft)	Representative Tank(s)
Existing Tanks				
T11003	11000	45	40	
T20003	20000	71.5	28	
T35002	35000	75	44	
T35003	35000	75	44	
T55005	55000	92	48	
T55006	55000	92	48	
T80005	80000	110	48	
T80006	80000	110	48	
T80007	80000	110	48	
T80008	80000	110	47	
New/Modified Tanks				
20M01 (S-33-425-0)	20000	60	40	Max of 20003, 35002, 35003
20M02 (S-33-426-0)	20000	60	40	Max of 20003, 35002, 35003
30M02 (S-33-67-4)	30000	80	35.5	Max of 20003, 35002, 35003
80009 (S-33-423-0)	80000	110	48	Max of 80005, 80006, 80007, 80008
New 80 kbbbl (S-33-428-0)	80000	116	40	Max of 80005, 80006, 80007, 80008

**Fugitive Component Counts from Similar Refinery Tanks on VRS Used as Models for New/Modified Tanks
Connected to VRS Component Counts**

		Group 1	Group 2	Group 3	Totals	
		Piping to and from tank	VR and make up gas lines to trunk	All components directly on tanks	Liquid Phase	Gas Phase
T35002	Valve	28	4	3	31	4
	Connector	79	16	4	83	16
	Flange	31	9	4	35	9
	Pump Seal	0	0	0	0	0
	PRV	0	1	0	0	1
	Other	0	6	3	3	6
T20003	Valve	50	5	3	53	5
	Connector	781	16	8	789	16
	Flange	39	9	7	46	9
	Pump Seal	2	0	0	2	0
	PRV	2	1	0	2	1
	Other	2	6	2	4	6
T55005	Valve	64	5	7	71	5
	Connector	109	26	5	114	26
	Flange	72	9	3	75	9
	Pump Seal	4	0	0	4	0
	PRV	2	1	0	2	1
	Other	4	5	4	8	5
T35003	Valve	31	5	3	34	5
	Connector	116	15	8	124	15
	Flange	25	6	4	29	6
	Pump Seal	1	0	0	1	0
	PRV	1	1	0	1	1
	Other	2	5	3	5	5
T80006	Valve	54	2	3	57	2
	Connector	88	7	0	88	7
	Flange	53	2	4	57	2
	Pump Seal	2	0	0	2	0
	PRV	5	2	0	5	2
	Other	6	2	2	8	2
T80008	Valve	45	5	3	48	5
	Connector	79	2	2	81	2
	Flange	48	9	6	54	9
	Pump Seal	2	0	0	2	0
	PRV	4	1	0	4	1
	Other	4	2	5	9	2

		Group 1	Group 2	Group 3	Totals	
		Piping to and from tank	VR and make up gas lines to trunk	All components directly on tanks	Liquid Phase	Gas Phase
T80007	Valve	43	1	3	46	1
	Connector	126	2	0	126	2
	Flange	36	0	4	40	0
	Pump Seal	2	0	0	2	0
	PRV	4	1	0	4	1
	Other	4	2	2	6	2
T80005	Valve	36	1	7	43	1
	Connector	138	2	22	160	2
	Flange	28	2	3	31	2
	Pump Seal	3	0	0	3	0
	PRV	2	1	0	2	1
	Other	4	0	4	8	0

T55006	Valve	65	5	7	72	5
	Connector	131	7	5	136	7
	Flange	65	6	3	68	6
	Pump Seal	2	0	0	2	0
	PRV	1	1	0	1	1
	Other	3	5	3	6	5
T11003	Valve	18	1	1	19	1
	Connector	31	1	0	31	1
	Flange	16	2	2	18	2
	Pump Seal	1	0	0	1	0
	PRV	2	1	0	2	1
	Other	1	2	2	3	2

Max of 20003, 35002, 35003	Valve	50	5	3	53	5
	Connector	781	16	8	789	16
	Flange	39	9	7	46	9
	Pump Seal	2	0	0	2	0
	PRV	2	1	0	2	1
	Other	2	6	3	5	6
Max of 80005, 80006, 80007, 80008	Valve	54	5	7	61	5
	Connector	138	7	22	160	7
	Flange	53	9	6	59	9
	Pump Seal	3	0	0	3	0
	PRV	5	2	0	5	2
	Other	6	2	5	11	2

Post Project Fugitive VOC Emission Calculations - CAPCOA Parameters and Historical Leak Rates

Screening Values Used

<100 ppmv	50
<500 ppmv	300
<1,000 ppmv	750
<2,000 ppmv	1,500
<5,000 ppmv	3,500
<10,000 ppmv	7,500
>10,000 ppmv	See below

Contingency Factor	1.2
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Factor applied to estimated component counts as buffer.

Number of Components in New Units

	Valves (LL)	Valves (V)	Pumps (LL)	Flanges (LL)	Flanges (V)	Compressors	PRV to Atm	Connections (LL)	Connections (V)	Others (LL)	Others (V)
Tank 80009 (S-33-423-0)	61	5	3	59	9	0	7	160	7	11	2
Tank 20M01 (S-33-425-0)	53	5	2	46	9	0	3	789	16	5	6
Tank 20M02 (S-33-426-0)	53	5	2	46	9	0	3	789	16	5	6
Tank 30M02 (S-33-67-4)	53	5	2	46	9	0	3	789	16	5	6
80 kbbl Tank (S-33-428-0)	61	5	3	59	9	0	7	160	7	11	2

Historical Average Leak Rates

Based On:	VL (L)	VL (G)	PS (L)	FL (Total)	FL (Total)	CS	PR (Total)	OT (Total)	OT (Total)	OT (Total)	OT (Total)
<100 ppmv	98.64%	99.01%	55.61%	99.46%	99.46%	70.63%	87.56%	98.67%	98.67%	98.67%	98.67%
<500 ppmv	0.46%	0.30%	40.89%	0.45%	0.45%	27.27%	10.96%	1.11%	1.11%	1.11%	1.11%
<1,000 ppmv	0.21%	0.17%	1.42%	0.00%	0.00%	0.00%	0.00%	0.02%	0.02%	0.02%	0.02%
<2,000 ppmv	0.33%	0.20%	0.99%	0.04%	0.04%	0.00%	0.40%	0.08%	0.08%	0.08%	0.08%
<5,000 ppmv	0.24%	0.18%	0.56%	0.01%	0.01%	0.00%	0.40%	0.06%	0.06%	0.06%	0.06%
<10,000 ppmv	0.11%	0.11%	0.39%	0.01%	0.01%	0.70%	0.45%	0.05%	0.05%	0.05%	0.05%
>10,000 ppmv	0.02%	0.01%	0.13%	0.02%	0.02%	1.40%	0.23%	0.01%	0.01%	0.01%	0.01%

Parameters for CAPCOA Fugitive Calculations

Component Category	Valves (All)	Valves (All)	Pumps (All)	Flanges (All)	Flanges (All)	Others (All)	Others (All)	Connectors (All)	Connectors (All)	Others (All)	Others (All)
Multiplier Used	2.27E-06	2.27E-06	2.27E-06	4.53E-06	4.53E-06	8.69E-06	8.69E-06	1.53E-06	1.53E-06	8.69E-06	8.69E-06
Exponent Used	0.747	0.747	0.747	0.706	0.706	0.642	0.642	0.736	0.736	0.642	0.642
>10,000 EF Used*	0.064	0.064	0.064	0.095	0.095	0.082	0.082	0.030	0.030	0.082	0.082

APPENDIX H.1

Fugitive VOC Emissions From New and Modified Fixed Roof Storage Tanks On Refinery Vapor Control System

Post-Project Fugitive VOC Emissions

Tank 30M02 (S-33-67-4)

	Valves (LL)		Valves (V)		Pumps (LL)		Flanges (LL)		Flanges (V)		Compressors		PRV to Atm		Connections (LL)		Connections (V)		Others (LL)		Others (V)		Total VOC (lb/yr)				
	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	LL	V	All		
Total x																											
Contingency	63.60	76.11	6.00	6.26	2.40	9.03	55.20	98.26	10.80	19.22	0.00	0.00	3.60	23.77	946.80	589.26	19.20	11.95	6.00	14.00	7.20	16.80	786.66	78.00	864.67		
<100 ppmv	62.74	51.11	5.94	4.84	1.33	1.09	54.90	76.03	10.74	14.88	0.00	0.00	3.15	6.52	934.21	491.36	18.94	9.96	5.92	12.24	7.10	14.69					
<500 ppmv	0.29	0.91	0.02	0.06	0.98	3.05	0.25	1.22	0.05	0.24	0.00	0.00	0.39	2.58	10.51	20.67	0.21	0.42	0.07	0.44	0.08	0.52					
<1,000 ppmv	0.13	0.82	0.01	0.06	0.03	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.73	0.00	0.01	0.00	0.01	0.00	0.02					
<2,000 ppmv	0.21	2.17	0.01	0.12	0.02	0.25	0.02	0.34	0.00	0.07	0.00	0.00	0.01	0.26	0.76	4.87	0.02	0.10	0.00	0.09	0.01	0.11					
<5,000 ppmv	0.15	2.97	0.01	0.21	0.01	0.26	0.01	0.15	0.00	0.03	0.00	0.00	0.01	0.46	0.57	6.81	0.01	0.14	0.00	0.11	0.00	0.14					
<10,000 ppmv	0.07	2.41	0.01	0.23	0.01	0.32	0.01	0.26	0.00	0.05	0.00	0.00	0.02	0.84	0.47	9.95	0.01	0.20	0.00	0.15	0.00	0.19					
>10,000 ppmv	0.01	15.72	0.00	0.74	0.00	3.86	0.01	20.25	0.00	3.96	0.00	0.00	0.01	13.11	0.09	54.86	0.00	1.11	0.00	0.95	0.00	1.14					

New 80 kbbi Tank (S-33-428-0)

	Valves (LL)		Valves (V)		Pumps (LL)		Flanges (LL)		Flanges (V)		Compressors		PRV to Atm		Connections (LL)		Connections (V)		Others (LL)		Others (V)		Total VOC (lb/yr)			
	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	LL	V	All	
Total x																										
Contingency	73.20	87.60	6.00	6.26	3.60	13.55	70.80	126.03	10.80	19.22	0.00	0.00	8.40	55.45	192.00	119.50	8.40	5.23	13.20	30.80	2.40	5.60	377.47	91.77	469.24	
<100 ppmv	72.20	58.82	5.94	4.84	2.00	1.63	70.42	97.52	10.74	14.88	0.00	0.00	7.36	15.21	189.45	99.65	8.29	4.36	13.02	26.94	2.37	4.90				
<500 ppmv	0.34	1.05	0.02	0.06	1.47	4.57	0.32	1.56	0.05	0.24	0.00	0.00	0.92	6.02	2.13	4.19	0.09	0.18	0.15	0.96	0.03	0.17				
<1,000 ppmv	0.15	0.95	0.01	0.06	0.05	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.15	0.00	0.01	0.00	0.03	0.00	0.01				
<2,000 ppmv	0.24	2.50	0.01	0.12	0.04	0.37	0.03	0.43	0.00	0.07	0.00	0.00	0.03	0.62	0.15	0.99	0.01	0.04	0.01	0.19	0.00	0.04				
<5,000 ppmv	0.18	3.42	0.01	0.21	0.02	0.39	0.01	0.20	0.00	0.03	0.00	0.00	0.03	1.06	0.12	1.38	0.01	0.06	0.01	0.25	0.00	0.05				
<10,000 ppmv	0.08	2.77	0.01	0.23	0.01	0.48	0.01	0.34	0.00	0.05	0.00	0.00	0.04	1.95	0.10	2.02	0.00	0.09	0.01	0.34	0.00	0.06				
>10,000 ppmv	0.01	18.10	0.00	0.74	0.00	5.78	0.01	25.98	0.00	3.96	0.00	0.00	0.02	30.60	0.02	11.12	0.00	0.49	0.00	2.09	0.00	0.38				

Post-Project Fugitive VOC Emissions

Tank 80009 (S-33-423-0)

	Valves (LL)		Valves (V)		Pumps (LL)		Flanges (LL)		Flanges (V)		Compressors		PRV to Atm		Connections (LL)		Connections (V)		Others (LL)		Others (V)		Total VOC (lb/yr)			
	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	LL	V	All	
Total x																										
Contingency	73.20	87.60	6.00	6.26	3.60	13.55	70.80	126.03	10.80	19.22	0.00	0.00	8.40	55.45	192.00	119.50	8.40	5.23	13.20	30.80	2.40	5.60	377.47	91.77	469.24	
<100 ppmv	72.20	58.82	5.94	4.84	2.00	1.63	70.42	97.52	10.74	14.88	0.00	0.00	7.36	15.21	189.45	99.65	8.29	4.36	13.02	26.94	2.37	4.90				
<500 ppmv	0.34	1.05	0.02	0.06	1.47	4.57	0.32	1.56	0.05	0.24	0.00	0.00	0.92	6.02	2.13	4.19	0.09	0.18	0.15	0.96	0.03	0.17				
<1,000 ppmv	0.15	0.95	0.01	0.06	0.05	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.15	0.00	0.01	0.00	0.03	0.00	0.01				
<2,000 ppmv	0.24	2.50	0.01	0.12	0.04	0.37	0.03	0.43	0.00	0.07	0.00	0.00	0.03	0.62	0.15	0.99	0.01	0.04	0.01	0.19	0.00	0.04				
<5,000 ppmv	0.18	3.42	0.01	0.21	0.02	0.39	0.01	0.20	0.00	0.03	0.00	0.00	0.03	1.06	0.12	1.38	0.01	0.06	0.01	0.25	0.00	0.05				
<10,000 ppmv	0.08	2.77	0.01	0.23	0.01	0.48	0.01	0.34	0.00	0.05	0.00	0.00	0.04	1.95	0.10	2.02	0.00	0.09	0.01	0.34	0.00	0.06				
>10,000 ppmv	0.01	18.10	0.00	0.74	0.00	5.78	0.01	25.98	0.00	3.96	0.00	0.00	0.02	30.60	0.02	11.12	0.00	0.49	0.00	2.09	0.00	0.38				

Tank 20M01 (S-33-425-0)

	Valves (LL)		Valves (V)		Pumps (LL)		Flanges (LL)		Flanges (V)		Compressors		PRV to Atm		Connections (LL)		Connections (V)		Others (LL)		Others (V)		Total VOC (lb/yr)			
	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	LL	V	All	
Total x																										
Contingency	63.60	76.11	6.00	6.26	2.40	9.03	55.20	98.26	10.80	19.22	0.00	0.00	3.60	23.77	946.80	589.26	19.20	11.95	6.00	14.00	7.20	16.80	786.66	78.00	864.67	
<100 ppmv	62.74	51.11	5.94	4.84	1.33	1.09	54.90	76.03	10.74	14.88	0.00	0.00	3.15	6.52	934.21	491.38	18.94	9.96	5.92	12.24	7.10	14.69				
<500 ppmv	0.29	0.91	0.02	0.06	0.98	3.05	0.25	1.22	0.05	0.24	0.00	0.00	0.39	2.58	10.51	20.67	0.21	0.42	0.07	0.44	0.08	0.52				
<1,000 ppmv	0.13	0.82	0.01	0.06	0.03	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.73	0.00	0.01	0.00	0.01	0.00	0.02				
<2,000 ppmv	0.21	2.17	0.01	0.12	0.02	0.25	0.02	0.34	0.00	0.07	0.00	0.00	0.01	0.26	0.76	4.87	0.02	0.10	0.00	0.09	0.01	0.11				
<5,000 ppmv	0.15	2.97	0.01	0.21	0.01	0.26	0.01	0.15	0.00	0.03	0.00	0.00	0.01	0.46	0.57	6.81	0.01	0.14	0.00	0.11	0.00	0.14				
<10,000 ppmv	0.07	2.41	0.01	0.23	0.01	0.32	0.01	0.26	0.00	0.05	0.00	0.00	0.02	0.84	0.47	9.95	0.01	0.20	0.00	0.15	0.00	0.19				
>10,000 ppmv	0.01	15.72	0.00	0.74	0.00	3.86	0.01	20.25	0.00	3.96	0.00	0.00	0.01	13.11	0.09	54.86	0.00	1.11	0.00	0.95	0.00	1.14				

Tank 20M02 (S-33-426-0)

	Valves (LL)		Valves (V)		Pumps (LL)		Flanges (LL)		Flanges (V)		Compressors		PRV to Atm		Connections (LL)		Connections (V)		Others (LL)		Others (V)		Total VOC (lb/yr)			
	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	LL	V	All	
Total x																										
Contingency	63.60	76.11	6.00	6.26	2.40	9.03	55.20	98.26	10.80	19.22	0.00	0.00	3.60	23.77	946.80	589.26	19.20	11.95	6.00	14.00	7.20	16.80	786.66	78.00	864.67	
<100 ppmv	62.74	51.11	5.94	4.84	1.33	1.09	54.90	76.03	10.74	14.88	0.00	0.00	3.15	6.52	934.21	491.38	18.94	9.96	5.92	12.24	7.10	14.69				
<500 ppmv	0.29	0.91	0.02	0.06	0.98	3.05	0.25	1.22	0.05	0.24	0.00	0.00	0.39	2.58	10.51	20.67	0.21	0.42	0.07	0.44	0.08	0.52				
<1,000 ppmv	0.13	0.82	0.01	0.06	0.03	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.73	0.00	0.01	0.00	0.01	0.00	0.02				
<2,000 ppmv	0.21	2.17	0.01	0.12	0.02	0.25	0.02	0.34	0.00	0.07	0.00	0.00	0.01	0.26	0.76	4.87	0.02	0.10	0.00	0.09	0.01	0.11				
<5,000 ppmv	0.15	2.97	0.01	0.21	0.01	0.26	0.01	0.15	0.00	0.03	0.00	0.00	0.01	0.46	0.57	6.81	0.01	0.14	0.00	0.11	0.00	0.14				
<10,000 ppmv	0.07	2.41	0.01	0.23	0.01	0.32	0.01	0.26	0.00	0.05	0.00	0.00	0.02	0.84	0.47	9.95	0.01	0.20	0.00	0.15	0.00	0.19				
>10,000 ppmv	0.01	15.72	0.00	0.74	0.00	3.86	0.01	20.25	0.00	3.96	0.00	0.00	0.01	13.11	0.09	54.86	0.00	1.11	0.00	0.95	0.00	1.14				

APPENDIX H.2

Uncontrolled VOC Emissions From Diesel Storage In New and Modified Fixed Roof Storage Tanks

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

S-33-67-4
30M02

Identification

User Identification: .30kbbi diesel tank
City: Bakersfield
State: California
Company: Big West of California
Type of Tank: Vertical Fixed Roof Tank
Description: 30 kbbi fixed roof tank Diesel storage, no VRS connection Max throughput: 30,000 kbbi/day

Tank Dimensions

Shell Height (ft):	35.50
Diameter (ft):	80.00
Liquid Height (ft) :	34.00
Avg. Liquid Height (ft):	17.70
Volume (gallons):	1,260,000.00
Turnovers:	365.00
Net Throughput(gal/yr):	459,900,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
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

_30kbbbl diesel tank - 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	67.63	61.25	74.00	65.42	0.0084	0.0068	0.0102	130.0000			188.00	Option 1: VP60 = .0065 VP70 = .009
1,2,4-Trimethylbenzene						0.0276	0.0215	0.0351	120.1900	0.0100	0.0474	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
Benzene						1.4375	1.2091	1.7007	78.1100	0.0000	0.0020	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.1408	0.1134	0.1739	106.1700	0.0001	0.0031	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.3253	1.9767	2.7228	86.1700	0.0000	0.0004	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Toluene						0.4169	0.3432	0.5034	92.1300	0.0003	0.0229	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						0.0072	0.0065	0.0069	134.4587	0.9866	0.8654	189.60	
Xylene (-m)						0.1176	0.0944	0.1455	106.1700	0.0029	0.0587	106.17	Option 2: A=7.009, B=1462.266, C=215.11

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

_30kbbbl diesel tank - Vertical Fixed Roof Tank
Bakersfield, California

Annual Emission Calculations

Standing Losses (lb):	290.8990
Vapor Space Volume (cu ft):	93,661.3489
Vapor Density (lb/cu ft):	0.0002
Vapor Space Expansion Factor:	0.0444
Vented Vapor Saturation Factor:	0.9918
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	93,661.3489
Tank Diameter (ft):	80.0000
Vapor Space Outage (ft):	18.6333
Tank Shell Height (ft):	35.5000
Average Liquid Height (ft):	17.7000
Roof Outage (ft):	0.8333
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.8333
Roof Height (ft):	0.0000
Roof Slope (ft/ft):	0.0625
Shell Radius (ft):	40.0000
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):	0.0084
Daily Avg. Liquid Surface Temp. (deg. R):	527.2957
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):	525.0900
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,648.9051
Vapor Space Expansion Factor:	
Vapor Space Expansion Factor:	0.0444
Daily Vapor Temperature Range (deg. R):	25.4888
Daily Vapor Pressure Range (psia):	0.0034
Breather Vent Press. Setting Range (psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0084
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0068
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0102
Daily Avg. Liquid Surface Temp. (deg R):	527.2957
Daily Min. Liquid Surface Temp. (deg R):	520.9235
Daily Max. Liquid Surface Temp. (deg R):	533.6679
Daily Ambient Temp. Range (deg. R):	24.5000
Vented Vapor Saturation Factor:	
Vented Vapor Saturation Factor:	0.9918

Vapor Pressure at Daily Average Liquid:	
Surface Temperature (psia):	0.0084
Vapor Space Outage (ft):	18.6333
Working Losses (lb):	2,977.9742
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	0.0084
Annual Net Throughput (gal/yr.):	459,900,000.0000
Annual Turnovers:	365.0000
Turnover Factor:	0.2489
Maximum Liquid Volume (gal):	1,260,000.0000
Maximum Liquid Height (ft):	34.0000
Tank Diameter (ft):	80.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	3,268.8732

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

Emissions Report for: Annual

_30kbbbl diesel tank - Vertical Fixed Roof Tank
Bakersfield, California

Components	Losses(lbs)		
	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	2,977.97	290.90	3,268.87
Hexane (-n)	1.19	0.12	1.31
Benzene	5.89	0.58	6.47
Toluene	68.34	6.68	75.02
Ethylbenzene	9.38	0.92	10.30
Xylene (-m)	174.70	17.07	191.77
1,2,4-Trimethylbenzene	141.28	13.80	155.08
Unidentified Components	2,577.18	251.75	2,828.93

S-33-423-0

tank 80009

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

Identification

User Identification: 80 kbbl diesel tank
 City: Bakersfield
 State: California
 Company: Big West of California
 Type of Tank: Vertical Fixed Roof Tank
 Description: New 80 kbbl fixed roof tank Diesel storage, no VRS connection Max throughput: 80,000 bbl/day

Tank Dimensions

Shell Height (ft): 48.00
 Diameter (ft): 110.00
 Liquid Height (ft): 48.00
 Avg. Liquid Height (ft): 24.00
 Volume (gallons): 3,360,000.00
 Turnovers: 365.00
 Net Throughput(gal/yr): 1,226,400,000.00
 Is Tank Heated (y/n): N

Paint Characteristics

Shell Color/Shade: White/White
 Shell Condition: Good
 Roof Color/Shade: White/White
 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

_80 kbbi diesel tank - 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	67.63	61.25	74.00	65.42	0.0084	0.0068	0.0102	130.0000			188.00	Option 1: VP60 = .0065 VP70 = .009
1,2,4-Trimethylbenzene						0.0276	0.0215	0.0351	120.1900	0.0100	0.0474	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
Benzene						1.4375	1.2091	1.7007	78.1100	0.0000	0.0020	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.1408	0.1134	0.1739	106.1700	0.0001	0.0031	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.3253	1.9767	2.7228	86.1700	0.0000	0.0004	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Toluene						0.4169	0.3432	0.5034	92.1300	0.0003	0.0229	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						0.0072	0.0065	0.0069	134.4587	0.9866	0.8654	189.60	
Xylene (-m)						0.1176	0.0944	0.1455	106.1700	0.0029	0.0587	106.17	Option 2: A=7.009, B=1462.266, C=215.11

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

_80 kbbi diesel tank - Vertical Fixed Roof Tank
Bakersfield, California

Annual Emission Calculations

Standing Losses (lb):	740.0739
Vapor Space Volume (cu ft):	238,968.8447
Vapor Density (lb/cu ft):	0.0002
Vapor Space Expansion Factor:	0.0444
Vented Vapor Saturation Factor:	0.9889
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	238,968.8447
Tank Diameter (ft):	110.0000
Vapor Space Outage (ft):	25.1458
Tank Shell Height (ft):	48.0000
Average Liquid Height (ft):	24.0000
Roof Outage (ft):	1.1458
Roof Outage (Cone Roof)	
Roof Outage (ft):	1.1458
Roof Height (ft):	0.0000
Roof Slope (ft/ft):	0.0625
Shell Radius (ft):	55.0000
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):	0.0084
Daily Avg. Liquid Surface Temp. (deg. R):	527.2957
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):	525.0900
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,648.9051
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0444
Daily Vapor Temperature Range (deg. R):	25.4888
Daily Vapor Pressure Range (psia):	0.0034
Breather Vent Press. Setting Range (psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0084
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0068
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0102
Daily Avg. Liquid Surface Temp. (deg R):	527.2957
Daily Min. Liquid Surface Temp. (deg R):	520.9235
Daily Max. Liquid Surface Temp. (deg R):	533.6679
Daily Ambient Temp. Range (deg. R):	24.5000
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9889

Vapor Pressure at Daily Average Liquid:	
Surface Temperature (psia):	0.0084
Vapor Space Outage (ft):	25.1458
Working Losses (lb):	7,941.2646
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	0.0084
Annual Net Throughput (gal/yr.):	1,226,400,000.0000
Annual Turnovers:	365.0000
Turnover Factor:	0.2489
Maximum Liquid Volume (gal):	3,360,000.0000
Maximum Liquid Height (ft):	48.0000
Tank Diameter (ft):	110.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	8,681.3386

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

S-33-425-0 20M01
S-33-426-0 20M02

Identification

User Identification:	Tank 20M01
City:	Bakersfield
State:	California
Company:	Big West of California
Type of Tank:	Vertical Fixed Roof Tank
Description:	20 kbbbl fixed roof tank Diesel storage, no VRS connection Max throughput: 20,000 kbbbl/day

Tank Dimensions

Shell Height (ft):	40.00
Diameter (ft):	60.00
Liquid Height (ft):	40.00
Avg. Liquid Height (ft):	20.00
Volume (gallons):	840,000.00
Turnovers:	365.00
Net Throughput(gal/yr):	306,600,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
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 20M01 - 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	67.63	61.25	74.00	65.42	0.0084	0.0068	0.0102	130.0000			188.00	Option 1: VP60 = .0065 VP70 = .009
1,2,4-Trimethylbenzene						0.0276	0.0215	0.0351	120.1900	0.0100	0.0474	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
Benzene						1.4375	1.2091	1.7007	78.1100	0.0000	0.0020	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.1408	0.1134	0.1739	106.1700	0.0001	0.0031	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.3253	1.9767	2.7228	86.1700	0.0000	0.0004	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Toluene						0.4169	0.3432	0.5034	92.1300	0.0003	0.0229	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						0.0072	0.0065	0.0069	134.4587	0.9866	0.8654	189.60	
Xylene (-m)						0.1176	0.0944	0.1455	106.1700	0.0029	0.0587	106.17	Option 2: A=7.009, B=1462.266, C=215.11

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

Tank 20M01 - Vertical Fixed Roof Tank
Bakersfield, California

Annual Emission Calculations

Standing Losses (lb):	180.9615
Vapor Space Volume (cu ft):	58,315.8136
Vapor Density (lb/cu ft):	0.0002
Vapor Space Expansion Factor:	0.0444
Vented Vapor Saturation Factor:	0.9909
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	58,315.8136
Tank Diameter (ft):	60.0000
Vapor Space Outage (ft):	20.6250
Tank Shell Height (ft):	40.0000
Average Liquid Height (ft):	20.0000
Roof Outage (ft):	0.6250
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.6250
Roof Height (ft):	0.0000
Roof Slope (ft/ft):	0.0625
Shell Radius (ft):	30.0000
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):	0.0084
Daily Avg. Liquid Surface Temp. (deg. R):	527.2957
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):	525.0900
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,648.9051
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0444
Daily Vapor Temperature Range (deg. R):	25.4888
Daily Vapor Pressure Range (psia):	0.0034
Breather Vent Press. Setting Range (psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0084
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0068
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0102
Daily Avg. Liquid Surface Temp. (deg R):	527.2957
Daily Min. Liquid Surface Temp. (deg R):	520.9235
Daily Max. Liquid Surface Temp. (deg R):	533.6679
Daily Ambient Temp. Range (deg. R):	24.5000
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9909

Vapor Pressure at Daily Average Liquid:	
Surface Temperature (psia):	0.0084
Vapor Space Outage (ft):	20.6250
Working Losses (lb):	1,985.3162
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	0.0084
Annual Net Throughput (gal/yr.):	306,600,000.0000
Annual Turnovers:	365.0000
Turnover Factor:	0.2489
Maximum Liquid Volume (gal):	840,000.0000
Maximum Liquid Height (ft):	40.0000
Tank Diameter (ft):	60.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	2,166.2776

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

Emissions Report for: Annual

Tank 20M01 - Vertical Fixed Roof Tank
Bakersfield, California

Components	Losses(lbs)		
	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	1,985.32	180.96	2,166.28
Hexane (-n)	0.79	0.07	0.87
Benzene	3.93	0.36	4.29
Toluene	45.56	4.15	49.71
Ethylbenzene	6.25	0.57	6.82
Xylene (-m)	116.47	10.62	127.09
1,2,4-Trimethylbenzene	94.19	8.59	102.77
Unidentified Components	1,718.12	156.61	1,874.73

5-33-4/28-0

tank - new

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

Identification

User Identification: 80 kbbl diesel tank
 City: Bakersfield
 State: California
 Company: Big West of California
 Type of Tank: Vertical Fixed Roof Tank
 Description: New 80 kbbl fixed roof tank Diesel storage, no VRS connection Max throughput: 80,000 bbl/day

Tank Dimensions

Shell Height (ft):	48.00
Diameter (ft):	110.00
Liquid Height (ft):	48.00
Avg. Liquid Height (ft):	24.00
Volume (gallons):	3,360,000.00
Turnovers:	365.00
Net Throughput(gal/yr):	1,226,400,000.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition:	Good
Roof Color/Shade:	White/White
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

_80 kbbbl diesel tank - 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	67.63	61.25	74.00	65.42	0.0084	0.0068	0.0102	130.0000			188.00	Option 1: VP60 = .0065 VP70 = .009
1,2,4-Trimethylbenzene						0.0276	0.0215	0.0351	120.1900	0.0100	0.0474	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
Benzene						1.4375	1.2091	1.7007	78.1100	0.0000	0.0020	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.1408	0.1134	0.1739	106.1700	0.0001	0.0031	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.3253	1.9767	2.7228	86.1700	0.0000	0.0004	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Toluene						0.4169	0.3432	0.5034	92.1300	0.0003	0.0229	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						0.0072	0.0065	0.0069	134.4587	0.9866	0.8654	189.60	
Xylene (-m)						0.1176	0.0944	0.1455	106.1700	0.0029	0.0587	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d

Emissions Report - Detail Format

Detail Calculations (AP-42)

80 kbbbl diesel tank - Vertical Fixed Roof Tank Bakersfield, California

Annual Emission Calculations

Standing Losses (lb):	740.0739
Vapor Space Volume (cu ft):	238,968.8447
Vapor Density (lb/cu ft):	0.0002
Vapor Space Expansion Factor:	0.0444
Vented Vapor Saturation Factor:	0.9889
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	238,968.8447
Tank Diameter (ft):	110.0000
Vapor Space Outage (ft):	25.1458
Tank Shell Height (ft):	48.0000
Average Liquid Height (ft):	24.0000
Roof Outage (ft):	1.1458
Roof Outage (Cone Roof)	
Roof Outage (ft):	1.1458
Roof Height (ft):	0.0000
Roof Slope (ft/ft):	0.0625
Shell Radius (ft):	55.0000
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):	0.0084
Daily Avg. Liquid Surface Temp. (deg. R):	527.2957
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):	525.0900
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,648.9051
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0444
Daily Vapor Temperature Range (deg. R):	25.4888
Daily Vapor Pressure Range (psia):	0.0034
Breather Vent Press. Setting Range (psia):	0.0600
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0084
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0068
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0102
Daily Avg. Liquid Surface Temp. (deg R):	527.2957
Daily Min. Liquid Surface Temp. (deg R):	520.9235
Daily Max. Liquid Surface Temp. (deg R):	533.6679
Daily Ambient Temp. Range (deg. R):	24.5000
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9889

Vapor Pressure at Daily Average Liquid:	
Surface Temperature (psia):	0.0084
Vapor Space Outage (ft):	25.1458
Working Losses (lb):	7,941.2646
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid	
Surface Temperature (psia):	0.0084
Annual Net Throughput (gal/yr.):	1,226,400,000.0000
Annual Turnovers:	365.0000
Turnover Factor:	0.2489
Maximum Liquid Volume (gal):	3,360,000.0000
Maximum Liquid Height (ft):	48.0000
Tank Diameter (ft):	110.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	8,681.3386

APPENDIX H.3

VOC Emissions From Gasoline Storage In New External Floating Roof Storage Tank

TANKS 4.09 Emissions Reports

Tank: 80 kbbbl EFR Tank

Material: Gasoline

Daily throughput limit: 80,000 bbl/day (3,360,000 gal/day)

Annual throughput limit: 29,200,000 bbl/yr (1,226,400,000 gal/yr)

- TANKS annual emissions report
- TANKS July emissions report (for DEL)

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

Identification

User Identification: _80 kbbl EFR gasoline
 City: Bakersfield
 State: California
 Company: Big West of California
 Type of Tank: External Floating Roof Tank
 Description: New 80 kbbl EFR tank Gasoline storage Max throughput: 80,000 bbl/day

Tank Dimensions

Diameter (ft): 110.00
 Volume (gallons): 3,360,000.00
 Turnovers: 365.00

Paint Characteristics

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

Roof Characteristics

Type: Pontoon
 Fitting Category: Detail

Tank Construction and Rim-Seal System

Construction: Welded
 Primary Seal: Mechanical Shoe
 Secondary Seal: Shoe-mounted

Deck Fitting/Status**Quantity**

Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Bolted Cover, Gasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Unslotted Guide-Pole Well/Gasketed Sliding Cover, w. Sleeve	1
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Gasketed	18
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Gasketed	20
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	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

_80 kbbi EFR gasoline - External Floating 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.					
Gasoline (RVP 13)	All	67.63	61.25	74.00	65.42	7.9940	N/A	N/A	62.0000			92.00	Option 4: RVP=13, ASTM Slope=3
1,2,4-Trimethylbenzene						0.0276	N/A	N/A	120.1900	0.0244	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane (isooctane)						0.7392	N/A	N/A	114.2300	0.0043	0.0006	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene						1.4375	N/A	N/A	78.1100	0.0120	0.0032	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.1408	N/A	N/A	106.1700	0.0150	0.0004	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.3253	N/A	N/A	86.1700	0.0300	0.0129	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene						0.0637	N/A	N/A	120.2000	0.0010	0.0000	120.20	Option 2: A=6.93666, B=1460.793, C=207.78
Methyl alcohol						1.8261	N/A	N/A	32.0400	0.0014	0.0005	32.04	Option 2: A=7.897, B=1474.08, C=229.13
Naphthalene						0.0035	N/A	N/A	128.2000	0.0004	0.0000	128.20	Option 2: A=7.3729, B=1968.36, C=222.61
Toluene						0.4169	N/A	N/A	92.1300	0.0680	0.0053	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						10.3398	N/A	N/A	61.5602	0.7435	0.9748	90.12	
Xylenes (mixed isomers)						0.1176	N/A	N/A	106.1700	0.1000	0.0022	106.17	Option 2: A=7.009, B=1462.266, C=215.11

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

80 kbbi EFR gasoline - External Floating Roof Tank
Bakersfield, California

Annual Emission Calculations

Rim Seal Losses (lb):	9,974.5822
Seal Factor A (lb-mole/ft-yr):	1.6000
Seal Factor B (lb-mole/ft-yr (mph) ⁿ):	0.3000
Average Wind Speed (mph):	6.3500
Seal-related Wind Speed Exponent:	1.6000
Value of Vapor Pressure Function:	0.1983
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	7.9940
Tank Diameter (ft):	110.0000
Vapor Molecular Weight (lb/lb-mole):	62.0000
Product Factor:	1.0000
Withdrawal Losses (lb):	2,102.7185
Annual Net Throughput (gal/yr.):	1,226,400,000.0000
Shell Clingage Factor (bbi/1000 sqft):	0.0015
Average Organic Liquid Density (lb/gal):	5.6000
Tank Diameter (ft):	110.0000
Roof Fitting Losses (lb):	1,308.5759
Value of Vapor Pressure Function:	0.1983
Vapor Molecular Weight (lb/lb-mole):	62.0000
Product Factor:	1.0000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	106.4301
Average Wind Speed (mph):	6.3500
Total Losses (lb):	13,385.8767

Roof Fitting/Status	Quantity	KFa(lb-mole/yr)	Roof Fitting Loss Factors KFb(lb-mole/(yr mph ⁿ))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	19.6723
Automatic Gauge Float Well/Bolted Cover, Gasketed	1	2.80	0.00	0.00	34.4265
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	136.1974
Unslotted Guide-Pole Well/Gasketed Sliding Cover, w. Sleeve	1	8.60	12.00	0.81	599.6983
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	6.8239
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Gasketed	18	1.30	0.08	0.65	334.3957
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Gasketed	20	0.53	0.11	0.13	163.1670
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	1	0.71	0.10	1.00	14.1948

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

Emissions Report for: Annual

_80 kbbbl EFR gasoline - External Floating Roof Tank
Bakersfield, California

Components	Losses(lbs)				Total Emissions
	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	
Gasoline (RVP 13)	9,974.58	2,102.72	1,308.58	0.00	13,385.88
Benzene	31.94	25.23	4.19	0.00	61.36
Isopropyl benzene	0.12	2.12	0.02	0.00	2.26
Ethylbenzene	3.91	31.54	0.51	0.00	35.97
Methyl alcohol	4.83	3.01	0.63	0.00	8.48
Hexane (-n)	129.16	63.08	16.94	0.00	209.19
Naphthalene	0.00	0.82	0.00	0.00	0.82
1,2,4-Trimethylbenzene	1.24	51.26	0.16	0.00	52.67
2,2,4-Trimethylpentane (isooctane)	5.82	8.94	0.76	0.00	15.52
Toluene	52.49	142.98	6.89	0.00	202.36
Xylenes (mixed isomers)	21.77	210.27	2.86	0.00	234.90
Unidentified Components	9,723.29	1,563.46	1,275.61	0.00	12,562.36

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

Identification

User Identification: _80 kbbl EFR gasoline
City: Bakersfield
State: California
Company: Big West of California
Type of Tank: External Floating Roof Tank
Description: New 80 kbbl EFR tank Gasoline storage Max throughput: 80,000 bbl/day

Tank Dimensions

Diameter (ft): 110.00
Volume (gallons): 3,360,000.00
Turnovers: 365.00

Paint Characteristics

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

Roof Characteristics

Type: Pontoon
Fitting Category: Detail

Tank Construction and Rim-Seal System

Construction: Welded
Primary Seal: Mechanical Shoe
Secondary Seal: Shoe-mounted

Deck Fitting/Status**Quantity**

Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Automatic Gauge Float Well/Bolted Cover, Gasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Unslotted Guide-Pole Well/Gasketed Sliding Cover, w. Sleeve	1
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Gasketed	18
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Gasketed	20
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	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

_80 kbbi EFR gasoline - External Floating 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.					
Gasoline (RVP 13)	Jul	77.01	68.80	85.22	65.42	9.4498	N/A	N/A	62.0000			92.00	Option 4: RVP=13, ASTM Slope=3
1,2,4-Trimethylbenzene						0.0393	N/A	N/A	120.1900	0.0244	0.0002	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane (isooctane)						0.9545	N/A	N/A	114.2300	0.0043	0.0006	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene						1.8383	N/A	N/A	78.1100	0.0120	0.0035	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.1917	N/A	N/A	106.1700	0.0150	0.0005	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.9293	N/A	N/A	86.1700	0.0300	0.0138	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene						0.0887	N/A	N/A	120.2000	0.0010	0.0000	120.20	Option 2: A=6.93666, B=1460.793, C=207.78
Methyl alcohol						2.4158	N/A	N/A	32.0400	0.0014	0.0005	32.04	Option 2: A=7.897, B=1474.08, C=229.13
Naphthalene						0.0051	N/A	N/A	128.2000	0.0004	0.0000	128.20	Option 2: A=7.3729, B=1968.36, C=222.61
Toluene						0.5494	N/A	N/A	92.1300	0.0680	0.0059	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						12.2027	N/A	N/A	61.5190	0.7435	0.9726	90.12	
Xylenes (mixed isomers)						0.1605	N/A	N/A	106.1700	0.1000	0.0025	106.17	Option 2: A=7.009, B=1462.266, C=215.11

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

Emissions Report for: July

_80 kbbi EFR gasoline - External Floating Roof Tank
Bakersfield, California

Components	Losses(lbs)				Total Emissions
	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	
Gasoline (RVP 13)	1,272.95	178.59	149.36	0.00	1,600.89
1,2,4-Trimethylbenzene	0.19	4.35	0.02	0.00	4.57
2,2,4-Trimethylpentane (isooctane)	0.81	0.76	0.10	0.00	1.66
Benzene	4.41	2.14	0.52	0.00	7.07
Ethylbenzene	0.57	2.68	0.07	0.00	3.32
Hexane (-n)	17.57	5.36	2.06	0.00	24.98
Isopropyl benzene	0.02	0.18	0.00	0.00	0.20
Methyl alcohol	0.69	0.26	0.08	0.00	1.03
Naphthalene	0.00	0.07	0.00	0.00	0.07
Toluene	7.47	12.14	0.88	0.00	20.49
Unidentified Components	1,238.01	132.79	145.26	0.00	1,516.06
Xylenes (mixed isomers)	3.21	17.86	0.38	0.00	21.44

Fugitive VOC Emission Calculations - CAPCOA Parameters and Historical Leak Rates

Screening Values Used

<100 ppmv	50
<500 ppmv	300
<1,000 ppmv	750
<2,000 ppmv	1,500
<5,000 ppmv	3,500
<10,000 ppmv	7,500
>10,000 ppmv	See below

Contingency Factor	1.2
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Factor applied to estimated component counts as buffer.

Historical Average Leak Rates

Based On:	VL (L)	VL (G)	PS (L)	FL (Total)	FL (Total)	CS	PR (Total)	OT (Total)	OT (Total)	OT (Total)	OT (Total)
<100 ppmv	98.64%	99.01%	55.61%	99.46%	99.46%	70.63%	87.56%	98.67%	98.67%	98.67%	98.67%
<500 ppmv	0.46%	0.30%	40.89%	0.45%	0.45%	27.27%	10.96%	1.11%	1.11%	1.11%	1.11%
<1,000 ppmv	0.21%	0.17%	1.42%	0.00%	0.00%	0.00%	0.00%	0.02%	0.02%	0.02%	0.02%
<2,000 ppmv	0.33%	0.20%	0.99%	0.04%	0.04%	0.00%	0.40%	0.08%	0.08%	0.08%	0.08%
<5,000 ppmv	0.24%	0.18%	0.56%	0.01%	0.01%	0.00%	0.40%	0.06%	0.06%	0.06%	0.06%
<10,000 ppmv	0.11%	0.11%	0.39%	0.01%	0.01%	0.70%	0.45%	0.05%	0.05%	0.05%	0.05%
>10,000 ppmv	0.02%	0.01%	0.13%	0.02%	0.02%	1.40%	0.23%	0.01%	0.01%	0.01%	0.01%

Parameters for CAPCOA Fugitive Calculations

Component Category	Valves (All)	Valves (All)	Pumps (All)	Flanges (All)	Flanges (All)	Others (All)	Others (All)	Connectors (All)	Connectors (All)	Others (All)	Others (All)
Multiplier Used	2.27E-06	2.27E-06	2.27E-06	4.53E-06	4.53E-06	8.69E-06	8.69E-06	1.53E-06	1.53E-06	8.69E-06	8.69E-06
Exponent Used	0.747	0.747	0.747	0.706	0.706	0.642	0.642	0.736	0.736	0.642	0.642
>10,000 EF Used*	0.064	0.064	0.064	0.095	0.095	0.082	0.082	0.030	0.030	0.082	0.082

Fugitive VOC Emissions

80 kbbl Tanks

	Valves (LL)		Valves (V)		Pumps (LL)		Flanges (LL)		Flanges (V)		Compressors		PRV to Atm		Connections (LL)		Connections (V)		Others (LL)		Others (V)		Total VOC (lb/yr)					
	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	LL	V	Total	
Total x																												
Contingency	73.20	87.60	6.00	6.26	3.60	13.55	70.80	126.03	10.80	19.22	0.00	0.00	8.40	55.45	192.00	119.50	8.40	5.23	13.20	30.80	2.40	5.60				377.47	91.77	469.24
<100 ppmv	72.20	58.82	5.94	4.84	2.00	1.63	70.42	97.52	10.74	14.88	0.00	0.00	7.36	15.21	189.45	99.65	8.29	4.36	13.02	26.94	2.37	4.90						
<500 ppmv	0.34	1.05	0.02	0.06	1.47	4.57	0.32	1.56	0.05	0.24	0.00	0.00	0.92	6.02	2.13	4.19	0.09	0.18	0.15	0.96	0.03	0.17						
<1,000 ppmv	0.15	0.95	0.01	0.06	0.05	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.15	0.00	0.01	0.00	0.03	0.00	0.01						
<2,000 ppmv	0.24	2.50	0.01	0.12	0.04	0.37	0.03	0.43	0.00	0.07	0.00	0.00	0.03	0.62	0.15	0.99	0.01	0.04	0.01	0.19	0.00	0.04						
<5,000 ppmv	0.18	3.42	0.01	0.21	0.02	0.39	0.01	0.20	0.00	0.03	0.00	0.00	0.03	1.06	0.12	1.38	0.01	0.06	0.01	0.25	0.00	0.05						
<10,000 ppmv	0.08	2.77	0.01	0.23	0.01	0.48	0.01	0.34	0.00	0.05	0.00	0.00	0.04	1.95	0.10	2.02	0.00	0.09	0.01	0.34	0.00	0.06						
>10,000 ppmv	0.01	18.10	0.00	0.74	0.00	5.78	0.01	25.98	0.00	3.96	0.00	0.00	0.02	30.60	0.02	11.12	0.00	0.49	0.00	2.09	0.00	0.38						

80 kbbl Tanks, No VRS

	Valves (LL)		Valves (V)		Pumps (LL)		Flanges (LL)		Flanges (V)		Compressors		PRV to Atm		Connections (LL)		Connections (V)		Others (LL)		Others (V)		Total VOC (lb/yr)					
	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	Count	lb/yr	LL	V	Total	
Total x																												
Contingency	64.80	77.55	0.00	0.00	3.60	13.55	63.60	113.21	0.00	0.00	0.00	0.00	0.00	0.00	165.60	103.06	0.00	0.00	7.20	16.80	0.00	0.00				324.17	0.00	324.17
<100 ppmv	63.92	52.07	0.00	0.00	2.00	1.63	63.26	87.60	0.00	0.00	0.00	0.00	0.00	0.00	163.40	85.94	0.00	0.00	7.10	14.69	0.00	0.00						
<500 ppmv	0.30	0.93	0.00	0.00	1.47	4.57	0.29	1.40	0.00	0.00	0.00	0.00	0.00	0.00	1.84	3.61	0.00	0.00	0.08	0.52	0.00	0.00						
<1,000 ppmv	0.14	0.84	0.00	0.00	0.05	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.13	0.00	0.00	0.00	0.02	0.00	0.00						
<2,000 ppmv	0.21	2.21	0.00	0.00	0.04	0.37	0.03	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.85	0.00	0.00	0.01	0.11	0.00	0.00						
<5,000 ppmv	0.16	3.03	0.00	0.00	0.02	0.39	0.01	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.10	1.19	0.00	0.00	0.00	0.14	0.00	0.00						
<10,000 ppmv	0.07	2.45	0.00	0.00	0.01	0.48	0.01	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.08	1.74	0.00	0.00	0.00	0.19	0.00	0.00						
>10,000 ppmv	0.01	16.02	0.00	0.00	0.00	5.78	0.01	23.34	0.00	0.00	0.00	0.00	0.00	0.00	0.02	9.59	0.00	0.00	0.00	1.14	0.00	0.00						

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

_80 kbbi EFR gasoline - External Floating Roof Tank
Bakersfield, California

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):							1,272.9479					
Seal Factor A (lb-mole/ft-yr):							1.6000					
Seal Factor B (lb-mole/ft-yr (mph) ⁿ):							0.3000					
Average Wind Speed (mph):							7.2000					
Seal-related Wind Speed Exponent:							1.6000					
Value of Vapor Pressure Function:							0.2586					
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):							9.4498					
Tank Diameter (ft):							110.0000					
Vapor Molecular Weight (lb/lb-mole):							62.0000					
Product Factor:							1.0000					
Withdrawal Losses (lb):							178.5871					
Net Throughput (gal/mo.):							104,160,000.0000					
Shell Coingage Factor (bbl/1000 sqft):							0.0015					
Average Organic Liquid Density (lb/gal):							5.6000					
Tank Diameter (ft):							110.0000					
Roof Fitting Losses (lb):							149.3599					
Value of Vapor Pressure Function:							0.2586					
Vapor Molecular Weight (lb/lb-mole):							62.0000					
Product Factor:							1.0000					
Tot. Roof Fitting Loss Fact. (lb-mole/yr):							111.7824					
Average Wind Speed (mph):							7.2000					
Total Losses (lb):							1,600.8948					

Roof Fitting/Status	Quantity	KFa (lb-mole/yr)	Roof Fitting Loss Factors KFb (lb-mole/(yr mph ⁿ))	m	Losses (lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	2.1789
Automatic Gauge Float Well/Bolted Cover, Gasketed	1	2.80	0.00	0.00	3.8130
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	15.9175
Unslotted Guide-Pole Well/Gasketed Sliding Cover, w. Sleeve	1	8.60	12.00	0.81	72.2818
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	0.7708
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Gasketed	18	1.30	0.08	0.65	37.4771
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Gasketed	20	0.53	0.11	0.13	18.1320
Rim Vent (6-in. Diameter)/Weighted Mech. Actuation, Gask.	1	0.71	0.10	1.00	1.6532

APPENDIX I

Quarterly Net Emissions Change (QNEC)

Quarterly Net Emissions Change (QNEC)

The QNEC is entered into PAS database and subsequently reported to CARB. For seasonal sources, or where the emissions differ quarter to quarter, then evaluate each pollutant for each quarter separately. The QNEC is calculated for each pollutant, for each unit, as the difference between the post-project quarterly potential to emit (PE2) and the quarterly baseline emissions (BE).

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.

QNEC [S-33-13-18]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	15,593	15,593	0
SO _x	3,263	3,263	0
PM ₁₀	1,165	1,165	0
CO	26,193	26,193	0
VOC	1,182	990	192

QNEC [S-33-41-4]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	0	0	0

QNEC [S-33-67-4]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	817	216	601

QNEC [S-33-419-0]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	135	0	135
SO _x	0	0	0
PM ₁₀	4	0	4
CO	75	0	75
VOC	4	0	4

QNEC [S-33-420-0]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	135	0	135
SO _x	0	0	0
PM ₁₀	4	0	4
CO	75	0	75
VOC	4	0	4

QNEC [S-33-423-0]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	2,215	0	2,215

QNEC [S-33-424-0]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	3,428	0	3,428

QNEC [S-33-425-0]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	542	0	542

QNEC [S-33-426-0]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	542	0	542

QNEC [S-33-428-0]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	2,215	0	2,215

QNEC [S-33-429-0]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	135	0	135
SO _x	0	0	0
PM ₁₀	4	0	4
CO	75	0	75
VOC	4	0	4

QNEC [S-33-434-0]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	3,427	0	3,427

APPENDIX I

Quarterly Net Emissions Change (QNEC)

Quarterly Net Emissions Change (QNEC)

The QNEC is entered into PAS database and subsequently reported to CARB. For seasonal sources, or where the emissions differ quarter to quarter, then evaluate each pollutant for each quarter separately. The QNEC is calculated for each pollutant, for each unit, as the difference between the post-project quarterly potential to emit (PE2) and the quarterly baseline emissions (BE).

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.

QNEC [S-33-13-18]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	15,593	15,593	0
SO _x	3,263	3,263	0
PM ₁₀	1,165	1,165	0
CO	26,193	26,193	0
VOC	1,182	990	192

QNEC [S-33-41-4]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	0	0	0

QNEC [S-33-67-4]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	216	0	216

QNEC [S-33-419-0]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	135	0	135
SO _x	0	0	0
PM ₁₀	2	0	2
CO	9	0	9
VOC	4	0	4

QNEC [S-33-420-0]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	135	0	135
SO _x	0	0	0
PM ₁₀	2	0	2
CO	9	0	9
VOC	4	0	4

QNEC [S-33-423-0]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	117	0	117

QNEC [S-33-424-0]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	3427	0	3427

QNEC [S-33-425-0]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	216	0	216

QNEC [S-33-426-0]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	216	0	216

QNEC [S-33-428-0]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	117	0	117

QNEC [S-33-429-0]			
	PE2 (lb/qtr)	BE (lb/qtr)	NEC (lb/qtr)
NO _x	135	0	135
SO _x	0	0	0
PM ₁₀	2	0	2
CO	8	0	8
VOC	4	0	4

APPENDIX J

Top-Down BACT Determinations and Guidelines

APPENDIX J.1

**Top-Down BACT Determination and Guideline for Fugitive
Component VOC Emissions and Pump and Compressor Seal VOC
Emissions from Modified Mild Hydrocracker**

Top Down BACT Analysis for the Mild Hydrocracker; S-33-13

As shown in Section VII.C.2 of the Application Review, the proposed addition of a 2nd stage reactor and ancillary equipment to the mild Hydrocracker #14 trigger BACT for VOC emissions.

Volatile organic compounds (VOC) are emitted as fugitive emissions from the multitude of pipe fittings, valves, flanges, and connectors that are associated with the mild hydrocracker including the proposed 2nd stage reactor. The emission rate of fugitive VOC components is constant and not affected by vapor pressure, liquid pressure, or flowrate.

BACT ANALYSIS Valves and Connectors

I. PROPOSAL

As part of its refinery upgrade project, Big West of California proposes the installation of process equipment to convert approximately 30,000 barrel per day of heavy gas oil to gasoline, diesel and LPG. Valves, flanges and other connectors are required for this installation. These fugitive components have the potential to leak and, therefore, to emit VOC to the atmosphere. VOC is the only pollutant emitted from these components.

II. EMISSION CONTROL TECHNOLOGY EVALUATION:

A. BACT Applicability

Collectively, these components have potential to emit or more than 2 lb/day, and, thus require BACT.

B. BACT Policy

For classes and categories covered in the District's BACT Clearinghouse, the list of available control technologies shall be limited to those listed in the Clearinghouse as of the date the application is deemed complete.

BACT Guideline 7.2.2 is listed, *Petroleum Refining – Valves and Connectors*, is listed in the District BACT Clearinghouse and is applicable to the valves and connectors proposed in this project.

C. TOP DOWN BACT Analysis – Valves and Connectors

BACT for VOC

Step 1 - Identify All Possible Control Technologies

1. Leak defined as a reading of methane in excess of 100 ppmv above background when measured per EPA Method 21, and an inspection and maintenance program pursuant to District Rule 4455.

Step 2 - Eliminate Technologically Infeasible Options

The listed option is feasible and is achieved in practice.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. Leak defined as a reading of methane in excess of 100 ppmv above background when measured per EPA Method 21, and an inspection and maintenance program pursuant to District Rule 4455.

Step 4 - Cost Effectiveness Analysis

As the applicant is proposing the highest ranked control option not eliminated in Step 2, a cost effectiveness analysis is not required.

Step 5 - Select BACT

1. Leak defined as a reading of methane in excess of 100 ppmv above background when measured per EPA Method 21, and an inspection and maintenance program pursuant to District Rule 4455

BACT ANALYSIS

Pump and Compressor Seals

I. PROPOSAL

As part of its refinery upgrade project, Big West of California proposes the installation of process equipment to convert approximately 30,000 barrel per day of heavy gas oil to gasoline, diesel and LPG. Liquid pumps and vapor compressors are required for this installation. Pumps and compressors experience leaks from their seals, and thus will emit VOC to the atmosphere. VOC is the only pollutant emitted from these components.

II. EMISSION CONTROL TECHNOLOGY EVALUATION:

A. BACT Applicability

Collectively, leaks from pump and compressor seals have the potential to exceed 2 lb/day, thus the pumps and compressors proposed for this project must satisfy BACT.

B. BACT Policy

For classes and categories covered in the District's BACT Clearinghouse, the list of available control technologies shall be limited to those listed in the Clearinghouse as of the date the application is deemed complete.

BACT Guideline 7.2.3 is listed, *Petroleum Refining – Pump and Compressor Seals*, is listed in the District BACT Clearinghouse and is applicable to the pump and compressor seal proposed in this project.

C. TOP DOWN BACT Analysis – Pump and Compressor Seals

BACT for VOC

Step 1 - Identify All Possible Control Technologies

1. Leak defined as a reading of methane in excess of 500 ppmv above background when measured per EPA Method 21, and an inspection and maintenance program pursuant to District Rule 4455.

Step 2 - Eliminate Technologically Infeasible Options

The listed option is feasible and is achieved in practice.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. Leak defined as a reading of methane in excess of 500 ppmv above background when measured per EPA Method 21, and an inspection and maintenance program pursuant to District Rule 4455.

Step 4 - Cost Effectiveness Analysis

As the applicant is proposing the highest ranked control option not eliminated in Step 2, a cost effectiveness analysis is not required.

Step 5 - Select BACT

1. Leak defined as a reading of methane in excess of 500 ppmv above background when measured per EPA Method 21, and an inspection and maintenance program pursuant to District Rule 4455.

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 7.2.2*

Last Update: 11/27/2006

Petroleum Refining - Valves & Connectors

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Leak defined as a reading of methane in excess of 100 ppmv above background when measure per EPA Method 21 and an Inspection and Maintenance Program pursuant to District Rule 4455		

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 - Permit Specific BACT Determinations on Next Page(s)**

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 7.2.3*

Last Update: 11/27/2006

Petroleum Refining - Pump and Compressor Seals

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Leak defined as a reading of methane in excess of 500 ppmv above background when measure per EPA Method 21 and an Inspection and Maintenance Program pursuant to District Rule 4455		

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 - Permit Specific BACT Determinations on Next Page(s)**

APPENDIX J.2

Top-Down BACT Determination and Guideline for New External Floating Roof Storage Tank

Top Down BACT Analysis for External Floating Roof Tank S-33-424-0

As shown in Section VII.C.2 of the Application Review, the 80,000 bbl external floating roof tank triggers BACT for VOC emissions.

1. BACT Analysis for VOC Emissions:

Emissions from floating roof tanks are the sum of withdrawal losses and standing storage losses. Withdrawal losses occur as the liquid level, and thus the floating roof, is lowered. Some liquid remains on the inner tank wall surface and evaporates. For an internal floating roof tank that has a column supported fixed roof, some liquid also clings to the columns and evaporates. Evaporative loss occurs until the tank is filled and the exposed surfaces are again covered. Standing storage losses from floating roof tanks include rim seal and deck fitting losses, and for internal floating roof tanks also include deck seam losses for constructions other than welded decks. Other potential standing storage loss mechanisms include breathing losses as a result of temperature and pressure changes.

a. Step 1 - Identify all control technologies

The SJVAPCD BACT Clearinghouse Guideline 7.3.3 identifies achieved in practice BACT for VOC emissions from external floating roof tanks as follows:

- 1) 95% control (Primary metal shoe seal with secondary wiper seal, or equal)

In addition, the SJVAPCD BACT Clearinghouse guideline 7.3.3 identifies technologically feasible BACT for VOC emissions from external floating roof tanks as follows:

- 2) 95% Control (Dual wiper seal with drip curtain or primary metal shoe seal with secondary wiper seal, or equal.)

No control alternatives identified as alternate basic equipment for this class and category of source are listed.

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.)
- 2) 95% control (Primary metal shoe seal with secondary wiper seal, or equal)

d. Step 4 - Cost effectiveness analysis

A cost effective analysis must be performed for all control options in the list from Step 3 in the order of their ranking to determine the cost effective option with the lowest emissions.

The applicant has proposed the highest listed technologically feasible control from the ranking list of Step 3. Therefore, per SJVAPCD BACT policy, the cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for VOC emissions from this external floating roof tank is 95% Control (Dual wiper seal with drip curtain or primary metal shoe seal with secondary wiper seal, or equal.); therefore, BACT for VOC emissions is satisfied.

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 - Permit Specific BACT Determinations on Next Page(s)**

APPENDIX J.3

Top-Down BACT Determination and Guideline for New Emergency Firewater Pump Engines

Top Down BACT Analysis for the Emergency IC Engines; S-33-419-0, '420-0, '429-0

As shown in Section VII.C.2 of the Application Review, the three proposed 525 bhp diesel powered emergency firewater pumps trigger BACT for NO_x, CO, and VOC emissions.

Oxides of nitrogen (NO_x) are generated from the high temperature combustion of the diesel fuel. A majority of the NO_x emissions are formed from the high temperature reaction of nitrogen and oxygen in the inlet air. The rest of the NO_x emissions are formed from the reaction of fuel-bound nitrogen with oxygen in the inlet air.

1. BACT Analysis for NO_x Emissions:

a. Step 1 - Identify all control technologies

The SJVAPCD BACT Clearinghouse Guideline 3.1.4, identifies achieved in practice BACT for NO_x emissions from emergency diesel IC engines powering a firewater pump as follows:

- 1) Certified emissions of 6.9 g-NO_x/bhp-hr or less

No technologically feasible alternatives or control alternatives identified as alternate basic equipment for this class and category of source are listed.

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

No ranking needs to be done because the applicant has proposed the achieved in practice option.

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the only control achieved in practice in the ranking list from Step 3. Therefore, per SJVAPCD BACT policy, the cost effectiveness analysis is not required.

APPENDIX J.4

**New Top-Down BACT Determination And Guideline For Fixed Roof
Variable Product Petroleum Storage Tank With Vapor Control And
Gas Blanketing Except When Storing Diesel Fuel**

BACT ANALYSIS

Fixed Roof Diesel Storage Tank (**not used exclusively to store diesel**)

Facility Name: Big West of California, LLC

Date: August 1, 2007

Mailing Address: 6451 Rosedale Hwy
Bakersfield, CA 93308

Contact Person: Bill Chadick (Big West), Lara Gertler, PhD. (Ashworth Leininger Group)

Telephone: (661) 326-4412, (805) 370-1470

Application #: S-33-67-4, '-423-0, '-425-0, '-426-0, '-428-0

Project #: 1062742

Deemed Complete: January 23, 2007

Engineer: Stephen Leonard

I. Proposal

As part of their "Clean Fuels Project", Big West of California is proposing the installation of two new 80,000 bbl capacity fixed roof petroleum storage tanks, the change of service and permitting of two existing 19,620 bbl fixed roof petroleum storage tanks and connecting one existing 30,000 bbl fixed roof petroleum storage tank to the refinery vapor control system (VCS). These tanks will primarily be used to store liquids produced in a new fluidized catalytic cracking unit (FCCU), part of project S1061149.

When storing liquids produced by the FCCU, the facility proposes to connect all the new and modified fixed roof tanks to the existing refinery VCS. This satisfies existing District BACT Guideline 7.3.2 for "*Petroleum and Petrochemical Production - Fixed Roof Organic Liquid Storage or Processing Tank, = or > 5,000 bbl Tank Capacity*".

The subject tanks may be used to store diesel as well. When storing diesel, Big West requests the ability to disconnect the tanks from the VCS. They've explained that if the VCS is connected to the tanks when the tanks are storing diesel, the light ends in the VCS blanket gas (which is refinery fuel gas) will contaminate the diesel, and as a result the diesel will not meet certain flash point specifications (see technical explanation in Appendix J.4.i).

As there is no applicable District BACT guideline concerning storage of diesel fuel (in tanks that do not exclusively store diesel fuel), a new BACT determination for storage of diesel fuel in fixed roof tanks will be created with this project. Please note that if the tanks exclusively stored diesel they would be exempt from permit.

II. Process Description

Big West of California, LLC (Big West) has proposed a major upgrade to their refinery located at 6541 Rosedale Highway, Bakersfield (Areas 1 and 2). The project proposes the installation of process equipment to convert approximately 30,000 barrel per day of heavy gas oil to gasoline, diesel and LPG. Currently, the refinery exports the 30,000 barrel per day of gas oil feeds to other refineries for processing. The project will not increase the overall capacity of the refinery, which is approximately 70,000 barrels per day of crude oil. As part of this upgrade to produce more diesel and gasoline at the refinery, the following tanks (two new 80,000 bbl, two existing currently permit exempt 19,620 bbl, and one modified 30,000 bbl) will be utilized to store both gasoline and diesel at different times.

The following equipment being added/modified in the Big West upgrade project is the subject of this BACT analysis:

- S-33-67-4: MODIFICATION OF 30,000 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK (# 30M02): CONNECT TO REFINERY VAPOR CONTROL SYSTEM
- S-33-423-0: 80,000 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK CONNECTED TO REFINERY VAPOR CONTROL SYSTEM (TANK # 80009)
- S-33-425-0: 19,620 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK CONNECTED TO REFINERY VAPOR CONTROL SYSTEM (TANK # 20M01)
- S-33-426-0: 19,620 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK CONNECTED TO REFINERY VAPOR CONTROL SYSTEM (TANK # 20M02)
- S-33-428-0: 80,000 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK CONNECTED TO REFINERY VAPOR CONTROL SYSTEM

III. EMISSION CONTROL TECHNOLOGY EVALUATION:

When one or more of the tanks undergoes a switch over from storing gasoline to storing diesel, the following procedure will be undertaken by Big West:

- First, the liquid is drained. When emptied, the tank will contain VCS blanketing gas.
- In preparation for drawing gas out, the thief hatch is opened to avoid drawing a vacuum; the vapor recovery is blinded off to avoid pulling in additional hydrocarbons from the VCS; and every device is grounded to prevent starting a fire.
- A combustor is hooked up to the tank nozzle to draw the gas out of the tank and combust it (tank degassing).
- As the gas in the tank is diluted with air, some propane is added to the combustor feed to make sure it continues to burn.

- When the percent of LEL (Lower Explosive Limit) gets down to a certain level, the combustor is shut down, and the tank ready to receive diesel.
- This procedure is expected to take ~2 days for an 80,000 bbl tank.

This procedure is more complex and lengthy than simple “switch loading” at a diesel and gasoline supplier’s “bulk plant”. Most, if not all, California air districts have prohibitions in their Rules and Regulations concerning switch loading. Switch loading is defined differently for different air districts, but always involves the loading of diesel fuel into a tanker truck where the last load carried was gasoline and gasoline vapors may still be present in the cargo tank. The definitions of switch loading from some major California Air Districts follows:

BAAQMD

“Switch loading is the loading of organic liquids with a Reid vapor pressure of less than 4.0 pounds into a delivery vehicle where the previous load was gasoline.”

AVAPCD

“SWITCH LOADING is a transfer of organic liquids with a vapor pressure of less than 1.5 psia (77.5 mm Hg) under actual loading condition into any tank truck, trailer or railroad tank car that was loaded with an organic liquid with a vapor pressure of 1.5 psia (77.5 mm Hg) or greater immediately preceding the transfer”.

SJVAPCD

“Switch Loading: the transfer of diesel fuel into a delivery vessel or storage tank with a capacity over 250 gallons which previously contained gasoline”.

To address switch loading, all air districts have loading rack vapor control requirements in place that are much like the following from the SJVAPCD:

“Switch loading shall not be conducted unless such transfer is made using a permanently installed certified vapor control system”.

There is not the level of cleaning and preparation in place for cargo tanker delivery vessels prior to switch loading that there is for refinery storage tanks with capacities in the millions of gallons. In addition, once cargo vessels are filled, they are disconnected from the VCS and drive off.

District BACT Guideline 4.6.3 addresses “Motor Vehicle Gasoline Storage and Dispensing Operation – Bulk Plants with Diesel Fuel Switch Loading” and requires a CARB certified 95% effective vapor control system. In practice, the control systems for switch loading are the same as when the delivery vessels places gasoline products in service station underground tanks, a Phase I balance system. This is not a suitable setup for when diesel fuel is produced at the refinery and placed in large storage tanks.

A. BACT Applicability

District Rule 2201 Section 4.1 requires that BACT be applied to any unit with an IPE of any affected pollutant of greater than 2 lb/day. Additionally, Section 4.1.3 requires BACT be applied to any new or modified emissions unit, in a stationary source project, which results in a Major Modification, as defined in Rule 2201. These units are part of a Major Modification stationary source project.

Because the tanks are required to be equipped with BACT at all times, a separate BACT guideline must be developed when the tanks are storing diesel and are disconnected from vapor control.

B. BACT Policy

As there is no applicable District BACT guideline concerning storage of diesel fuel (in tanks that do not exclusively store diesel fuel), a new BACT determination for storage of diesel fuel in fixed roof tanks has been developed in accordance with the District's BACT policy.

Background and Research of Other Air Districts and BACT Guidelines:

EPA's RACT/BACT/LAER Clearinghouse (RBLC)

at <http://www.epa.gov/ttn/catc/rblc/htm/welcome.html> was reviewed. BACT for storage of diesel fuel was not identified as Achieved in Practice or Technologically Feasible.

The Bay Area Air Quality Management District (BAAQMD) BACT Guidelines:

BAAQMD requires permits for storage of diesel motor fuel in containers greater than 10,000 gallons. However, no permits were identified requiring vapor control for diesel storage and BACT for storage of diesel fuel was not identified as Achieved in Practice or Technologically Feasible.

South Coast Air Quality Management District (SCAQMD) BACT Guidelines:

SCAQMD requires permits for storage of diesel motor fuel in containers greater than 40,000 gallons. However, no permits were identified requiring vapor control for diesel storage and BACT for storage of diesel fuel was not identified as Achieved in Practice or Technologically Feasible.

Rules and Regulations and the BACT Guidelines of other California Air Districts were consulted (SDAPCD, SLOAPCD, SBAPCD, MBUAPCD, VCAPCD). Other Districts have exemptions levels for the storage of diesel fuel, similarly worded as described in SJVAPCD Rule 2020 as *"The storage of petroleum distillates used as motor fuel with 0.8251 specific gravity or higher (40°API or lower) as measured by test method API 2547 or ASTM D-1298-80.* However, these other Districts do not maintain their own compilation of District formed BACT Guidelines.

Methodology for New BACT Guideline

SJVAPCD BACT Guideline 4.6.3 addresses "Motor Vehicle Gasoline Storage and Dispensing Operation - Bulk Plants With Diesel Fuel Switch Loading".

Technology transfer, using control techniques listed in SJVAPCD BACT Guideline 7.3.2, *Fixed Roof Organic Liquid Storage or Processing Tank, = or > 5,000 Bbl Tank Capacity*, will be utilized for this new determination.

C. Top-Down BACT Analysis for Permit Units S-33-67-4, '423-0, '425-0, '426-0, '428-0

BACT for VOC

Step 1 - Identify All Possible Control Technologies

1. 99% control. Vapors collected and transferred to refinery VCS via tank connection utilized when storing non-diesel organic liquids. *Reference:* Technology transfer from BACT Guidelines 7.3.2.
2. 99% control. Vapors collected in stand alone vapor control system via separate connection that segregates diesel fuel headspace from refinery VCS. Collected vapors routed to dedicated thermal oxidizer for destruction. *Reference:* BACT Guideline 7.3.2.
3. Approximately 10% control. Pressure/vacuum relief valve (PVRV) set to within 10% of allowable working pressure. *Reference:* BACT Guideline 7.3.1.

Step 2 - Eliminate Technologically Infeasible Options

Vapors collected and transferred to refinery VCS via tank connection utilized when storing non-diesel organic liquids. Reason: Big West has explained in a technical justification letter that if the refinery VCS remains connected to the tanks when the tanks are storing diesel, the light ends in the VCS blanket gas (which is refinery fuel gas) will contaminate the diesel, and as a result the diesel will not meet certain flash point specifications (see technical explanation in Appendix J.4.i)

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

1. 99% control. Vapors collected in stand alone vapor control system via separate connection segregating diesel fuel headspace from refinery VCS. Collected vapors routed to dedicated thermal oxidizer for destruction. *Reference:* BACT Guideline 7.3.2.
2. Approximately 10% control. Pressure/vacuum relief valve (PVRV) set to within 10% of allowable working pressure. *Reference:* BACT Guideline 7.3.1.

Step 4 - Cost Effectiveness Analysis

The highest ranked option was analyzed to determine if it is cost effective. As such a system would control emissions from all five subject tanks, the cost effectiveness determination is done for all five tanks as a group.

The results of the cost effectiveness analysis show that installing a stand alone VCS utilizing a thermal oxidizer is not cost effective for this project. The quote for the capital cost of purchase and installation of the thermal oxidizer is provided by International Alliance Group (See Appendix J.4.ii for quote specifications).

Please note that this cost effectiveness analysis is very conservative and only includes capital costs. It does not include ongoing operational costs. It also assumes a full year of diesel storage for each tank to obtain annual VOC emissions.

The annualized capital cost shown was prepared in accordance with the District BACT Policy. The diesel storage emissions from fixed roof tanks were calculated using the USEPA's software "Tanks", version 4.09. The complete cost effective analysis calculations are provided in Appendix J.4.iii. A summary of the cost effectiveness analysis is provided below. The uncontrolled diesel fuel VOC emissions from the new and modified fixed roof storage tanks is contained in Appendix H.2

Description	Cost
Direct Fields Costs (Material and Labor)	\$994,800
Engineering Costs	\$149,220
Total Capital Costs⁺	\$1,144,020
Annualized Capital Cost	\$176,000
Uncontrolled VOC (lbs/yr)	24,963
Controlled VOC Emissions [@] from tanks @ 99% control (lbs/yr)	251
VOC from Oxidizer Combustion (lbs/yr)	482
Total Controlled VOC emissions (lbs/yr)	733
VOC Emission Reduction (lbs/yr)	24,230
VOC Emission Reduction (tons/yr)	12.1
Cost Effectiveness (\$/ton)	\$14,545
VOC Cost Effectiveness Threshold (\$/ton)	\$5,000
Cost Effective	NO

⁺ Capital cost assumes conservative approach of direct material and installation labor cost plus design engineering cost. Contingency, shipping, clerical costs are not included.

[@] For simplicity, the controlled VOC emissions are estimated to be 1% of the uncontrolled VOC emissions. Actual controlled VOC emissions would be estimated based on a fugitive component count plus incinerator VOC emissions.

Step 5 - Select BACT

The applicant has proposed the next most effective control technology, utilizing a PVRV set to within 10 % of allowable working pressure of the tank.

APPENDIX J.4.i

Technical Description of Diesel Contamination Caused By Use of Vapor Control System



BIG WEST OF CALIFORNIA, LLC
A FLYING J Company

6451 Rosedale Highway • Bakersfield, CA 93308 • Phone 661.326.4200 • www.flyingj.com

September 7, 2006

Mr. Steve Tomlin
San Joaquin Valley APCD
2700 "M" Street
Bakersfield, CA 93301

Re: Storage of Diesel in Fixed Roof Tanks Equipped with Vapor Recovery

Dear Mr. Tomlin:

This letter is written in response to your recent inquiry concerning the technical feasibility of storing diesel range products in fixed roof tanks equipped with vapor recovery. As you are aware, a vapor recovery system involves replacing the headspace of a tank with fuel gas or natural gas and then providing facilities to manage that gas as the tank level changes and diurnal temperature and pressure increases and decreases. In addition, diesel fuel is required to meet a number of specifications, including initial boiling point, flash point and sulfur content, in order to be sold in the California.

As outlined below, the operation of a vapor recovery system on diesel storage tanks would be detrimental to the refinery's ability to product diesel fuel in accordance with California specifications. Following is a technical justification related to the feasibility of storing diesel fuel in fixed roof tanks equipped with vapor recovery.

The California specification flash point of diesel fuel is 130F as a minimum. Physically, the flash point is the lowest temperature at which a fuel can form an ignitable vapor mixture in air. It is a function of the vapor pressure of the liquid mixture along with the flammability of the vapor produced. Every flammable liquid has a vapor pressure, which is a function of that liquid's temperature. As the temperature increases, the vapor pressure increases. As the vapor pressure increases, the concentration of evaporated flammable liquid in the air above it increases. Hence, it is the temperature which determines the concentration of evaporated flammable liquid in the air under equilibrium conditions.

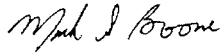
Diesel fuel is a mixture of hydrocarbons that contain from 8 to 20 carbon atoms per molecule. The vapor pressure of a liquid mixture is a function of the vapor pressures and composition of the mixture constituents. When a small amount of a high vapor pressure material is introduced, the vapor pressure of the mixture is increased by the product of the mole fraction of the material and the material's vapor pressure as a pure component.

Mr. Steve Tomlin
September 7, 2006
Page 2

In a vapor recovery system, the headspace of the tank is replaced with fuel gas. Fuel gas is made up of a mixture of light gases such as hydrogen, methane, and ethane, along with trace concentrations of hydrogen sulfide. With time, these gases will enter solution into the diesel fuel up to their solubility limits as determined by their partial pressures in the gas and liquid phase. In the case of diesel stored under vapor recovery, the fuel would become saturated with hydrogen, methane, ethane, and hydrogen sulfide -- each exhibiting extremely low flammability limits along with pure component vapor pressures measuring several atmospheres at typical storage temperatures. Due to off gassing of these materials once the fuel is removed from the tank, the diesel flash point will be measurably lower, affecting the ability to meet product specifications. In addition, the sulfur content of the fuel may be impacted. It is for these reasons that refinery standards dictate non-vapor recovery storage for diesel products.

Big West of California appreciates the District's efforts to date in processing the permit applications for the Clean Fuels Project. If additional information is needed to resolve this matter, please contact Brian Pellens at (661) 326-4401.

Regards,



Mark Boone
Operations Manager
Big West of California, LLC

APPENDIX J.4.ii

**Quote for Stand-Alone Thermal Oxidizer from
International Alliance Group**



Project Description: Clean Fuels Project
 Client: Big West of California
 IAG Projects No. 25601
 Location: Bakersfield, California

ROM Estimate

25-Aug-06

Incinerator

DESCRIPTION	WORK HOURS	ESTIMATED COST			TOTALS
		LABOR	MATERIAL	S/C	
Demo	0	\$0	\$0	\$0	\$0
Site Work and Civil	52	\$3,700	\$900	\$0	\$4,600
Concrete	479	\$34,500	\$7,200	\$0	\$41,700
Structural Steel	110	\$7,900	\$5,900	\$0	\$13,800
Buildings	0	\$0	\$0	\$0	\$0
Equipment	1,000	\$72,000	\$750,000	\$0	\$822,000
Piping	419	\$30,200	\$7,800	\$0	\$38,000
Electrical	133	\$9,600	\$6,300	\$0	\$15,900
Control Systems	0	\$0	\$0	\$0	\$0
Paint and Insulation	300	\$21,600	\$13,000	\$0	\$34,600
Support Work	337	\$24,200	\$0	\$0	\$24,200
TOTAL DIRECT FIELD COSTS	2,830	\$203,700	\$791,100	\$0	\$994,800
Construction Indirect Field Costs (All-in Rate included w/ Directs)					In Rate
TOTAL INDIRECT FIELD COSTS					\$0
TOTAL FIELD COSTS					\$994,800
CM					\$49,740
Engineering Costs					\$149,220
TOTAL OFFICE COSTS					\$198,960
TOTAL FIELD & OFFICE COSTS					\$1,193,760
Sales Tax					Excluded
Fee					Excluded
Freight					\$31,644
Escalation					Excluded
Contingency					\$183,811
TOTAL					\$1,409,215

Notes:

APPENDIX J.4.iii

Cost Effectiveness Calculations for Stand-Alone Vapor Control System with Thermal Oxidizer

Cost Effectiveness of VOC Control on Diesel Storage in Fixed-Roof Tanks

Per District Policy APR 1305:

Interest Rate	10%
Equipment Life (years)	10
VOC Cost Effectiveness Threshold (\$/ton)	\$ 5,000

Incinerator

Capital Cost	\$1,100,000
Heat Rating (MMBtu/hr)	10
Annualized capital costs	\$ 176,000

Scenario	Tank	Tank	Tank	Tank	Tank	Total
	S-33-67-4	S-33-423-0	S-33-425-0	S-33-426-0	S-33-428-0	
Uncontrolled VOC, lb/yr	3,269	8,681	2,166	2,166	8,681	24,963
Controlled VOC*(99% efficiency), lb/yr	33	87	22	22	87	251
VOC Reduction, lb/year						24,712
VOC reduction, ton/year						12.4

Cost effectiveness = \$176,000/year / 12.1 ton/year
 = \$14,545/ton

As the cost effectiveness of \$14,545/ton is greater than the cost effectiveness threshold of \$5,000/ton, this level of control is not effective,

Calculated Equivalent Annual Capital Cost is greater than the cost effectiveness threshold, therefore control is not cost effective

APPENDIX K

Draft Authority to Construct (ATC) Documents

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-33-41-4

LEGAL OWNER OR OPERATOR: BIG WEST OF CA, LLC
MAILING ADDRESS: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

LOCATION: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

SECTION: 27 TOWNSHIP: 29S RANGE: 27E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 80,000 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK #80006 WITH VAPOR CONTROL SYSTEM SERVING TANKS S-33-42, S-33-46 AND MARKETING TERMINAL S-3303-1 WITH VAPOR COMPRESSORS, VAPOR HOLDING TANK, CONDENSATE TANK AND MISC. PUMPS, PIPING AND VESSELS: INCREASE CONTROL EFFICIENCY TO 99%

CONDITIONS

1. 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. The tank shall be equipped with a vapor control system consisting of vapor and condensate collection systems capable of reducing VOC emissions by at least 99%, except for those periods described below when operation of the vapor control system is not required. [District Rule 2201, District Rule 4623, 5.6.1 and 40 CFR 60.112a(a)(3)] Federally Enforceable Through Title V Permit
4. All tank openings and fittings shall remain gas tight (as defined by Rule 4623) during normal operation, except for those periods described below when operation of the vapor control system is not required. [District Rule 4623] Federally Enforceable Through Title V Permit
5. Vapor control system shall be in use at all times when marketing terminal truck loading operation S-3301-1 is operating. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 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-33-41-4 Aug 25 2008 1:02PM - LEONARDS : Joint Inspection Required with LEONARDS

6. Tank vapor control system shall be in use at all times, except when tank is storing treated wastewater, liquids with a true vapor pressure less than 0.2 psia, liquids with an initial boiling point of 302 deg F or higher, or when tank is undergoing maintenance or cleaning. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Tank may be disconnected from vapor control system during maintenance and cleaning periods provided liquids and vapors subject to Rule 4623 are completely removed and vapor lines are isolated. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Permittee shall receive written or faxed approval from the District Compliance division prior to tank vapor control system disconnection. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Upon reconnection to vapor control system, permittee shall demonstrate using a portable hydrocarbon monitor that all tank pressure relief valves and other fugitive components associated with the tank are leak free, as defined in Rule 4623. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Permittee shall keep a record of each period of storage when tank vapor control system is not in operation and of the initial boiling point or true vapor pressure of each organic liquid stored in the tank during such periods. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Collected condensate shall be piped only to regular gasoline tank. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Compressor(s) shall activate when tank internal pressure exceeds 0.2 psig. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Gasoline condensate holding tank shall vent only to vapor holding tank #73-S-31, and vapor holding tank shall have no open vents. [District Rule 2201] Federally Enforceable Through Title V Permit
14. All vapor lines shall slope toward vapor holding tank. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Collected vapors shall discharge only to refinery fuel gas or flare gas system. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a gas-tight cover which shall be closed at all times except during gauging or sampling. Gas-tight shall be defined as emitting no more than 10,000 ppmv, above background, of methane measured at a distance of one centimeter from the potential source with an instrument calibrated with methane in accordance with EPA Method 21. Emissions in excess of this limit shall be considered a leak. [District Rule 4623, 5.6.2] Federally Enforceable Through Title V Permit
17. All piping, valves and fittings shall be constructed and maintained in a gas-tight condition. Gas-tight shall be defined as emitting no more than 10,000 ppmv, above background, of methane measured at a distance of one centimeter from the potential source with an instrument calibrated with methane in accordance with EPA Method 21. Emissions in excess of this limit shall be considered a leak. [District Rule 4623, 5.6.3] Federally Enforceable Through Title V Permit
18. All piping, fittings, and valves 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 provisions of this permit. If any of the tank components are found to leak during an annual inspection, the inspection frequency for that component type shall be changed from annual to quarterly. If no tank components are subsequently found to be leaking during five consecutive inspections, the inspection frequency may be changed from quarterly to annual. Components located in inaccessible (over 15 feet above ground when access is required from the ground or over 6 feet away from a platform when access is required from the platform) locations shall be inspected at least annually and components located in unsafe areas shall be inspected and repaired at the next process unit turnaround (the scheduled shutdown of a unit for maintenance and repair work). [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
19. A facility operator, upon detection of a leaking component, shall affix to that component a weatherproof readily visible tag bearing the date on which the leak is detected. The tag shall remain in place until the leaking component is repaired, reinspected and found to be in compliance with the requirements of this rule. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. An operator shall reinspect a component for leaks within thirty working days after the date on which the component is repaired. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
21. Any component leak shall be repaired to a leak-free condition or vented to a flare satisfying the requirements of 40 CFR 60.18 or to a vapor control device that is at least 95 percent efficient as measured by EPA Method 25 within fifteen (15) calendar days of detection. The APCO may grant a ten (10) calendar day extension provided the operator demonstrates that necessary and sufficient actions are being taken to correct the leak within this time period. Any vapor control device, other than a flare, used to comply with this condition shall demonstrate at least 95% control efficiency as measured by EPA Method 25 at least annually. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
22. If the leaking component is an essential part of a critical process unit which cannot be immediately shut down for repairs, the operator shall 1) Minimize the leak within 15 calendar days; and 2) If the leak which has been minimized still exceeds the concentration allowed by this permit, the essential component shall be repaired to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection. A critical process unit is any process unit which would result in the automatic shutdown of other process units if it were shut down. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
23. Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date of leak detection, and method of detection; 3) Date and emission level of recheck after leak is repaired; 4) Identification and location of essential parts of critical process units found leaking that cannot be repaired until the next process unit turnaround; and 5) Method used to minimize the leak from essential parts of critical process units which cannot be repaired until the next process unit turnaround. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
24. Operator shall keep a record of liquids stored in each container, storage temperature, the True vapor pressure (TVP), and the API gravity of such liquids. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
25. Control efficiency shall be determined by a comparison of controlled emissions to those emissions which would occur from a fixed or cone roof tank in the same product service without a vapor recovery system. Emissions shall be determined based on tank emission factors in EPA Publication AP-42, component counts for fugitive emissions sources, recognized emission factors for fugitive emission sources and the efficiency of any VOC destruction device. [District Rule 4623, 6.4] Federally Enforceable Through Title V Permit
26. The efficiency of any VOC destruction device shall be measured by EPA Method 25, 25a, or 25b, and analysis of halogenated exempt compounds shall be analyzed by ARB Method 432. [District Rule 4623, 6.2.5] Federally Enforceable Through Title V Permit
27. The operator shall ensure that the vapor recovery system is functional and is operating as designed whenever emissions are being vented to it. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
28. True vapor pressure shall be measured using Reid vapor pressure ASTM Method D323-82 modified by maintaining the hot water bath at storage temperature. Where storage temperature is above 100 °F true vapor pressure shall be determined by Reid vapor pressure at 100 °F and ARB approved calculations. [District Rule 4623, 6.2.2 and District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
29. True vapor pressure of crude oil with an API (American Petroleum Institute) gravity less than 30°, as determined by API 2547, may be determined by Headspace Gas Chromatography using the procedures from ARB Evaluation of a Method for Determining Vapor Pressures of Petroleum Mixtures by Headspace Gas Chromatography, October 1990. [District Rule 4623, 6.2.3 and District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
30. Operator shall determine the true vapor pressure of the petroleum liquid stored in the tank at least once per year in accordance with methods described in section 6.2 of District Rule 4623 (amended 5/19/2005). Determinations shall be made annually during summer and whenever there is a change in the source or type of petroleum entering the tank. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
31. Construction, reconstruction, or modification of this unit was commenced after May 18, 1978 and prior to July 23, 1984. Therefore, the requirements of 40 CFR 60 Subpart K and Kb do not apply to this source. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

32. As used in this permit, the term "source or type of petroleum" shall mean petroleum liquids with similar characteristics. The operator shall maintain records of API gravity of petroleum liquids stored in this unit to determine which oil are from common source. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-33-13-18

LEGAL OWNER OR OPERATOR: BIG WEST OF CA, LLC
MAILING ADDRESS: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

LOCATION: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

SECTION: 27 TOWNSHIP: 29S RANGE: 27E

EQUIPMENT DESCRIPTION:

MODIFICATION OF MILD HYDROCRACKER #14 INCLUDING 50 MMBTU/HR GAS FIRED CHARGE HEATER 14-H1, 40 MMBTU/HR GAS FIRED FEED HEATER 14-H2, REACTOR 14-R1, 4 SEPARATORS 14-D4/5, V6/9, FRACTIONATOR 14-V1, DIESEL STRIPPER 14-V4 AND MISC PUMPS, HEAT EXCHANGERS, PIPING AND VESSELS - AREA 1: ADD SECOND STAGE REACTOR, HEAT EXCHANGER SURFACE, RECYCLE AND MAKE-UP HYDROGEN COMPRESSORS, AND MISC PUMPS, PIPING AND VESSELS

CONDITIONS

1. 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. Permittee shall comply with applicable requirements of Rule 4001 NSPS Subparts A, J, and GGG. [40 CFR 60 Subparts A, J, and GGG] Federally Enforceable Through Title V Permit
4. Sour gas shall discharge only to amine treater or sulfur recovery plant, except that sour gas may be discharged to the flare under emergency or upset conditions as provided under Rules 1100 (Breakdown Conditions) and 4001 (NSPS Subparts A and J). [District NSR Rule] Federally Enforceable Through Title V Permit
5. VOC emissions from fugitive VOC components shall not exceed 6.3 lbs/day. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 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-33-13-18 Aug 25 2008 1:03PM - LEONARDS : Joint Inspection Required with LEONARDS

6. Total fugitive emissions rate from valves, pumps, flanges, others, and connectors from components in this permit unit shall be periodically calculated as described below using the California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities (February 1999), Table IV-3a:CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals (as described in the following condition). [District Rule 2201] Federally Enforceable Through Title V Permit
7. Permit holder shall maintain accurate component count and resultant emissions according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-3a (Feb 1999), CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals. Permit holder shall update such records when new components are installed. Components shall be screened and leak rate shall be measured at least once each quarter. If compliance with the daily emission limit is shown during each of five (5) consecutive quarterly inspections, the inspection frequency may be changed from quarterly to annual. If any annual inspection shows non-compliance with the daily emission limit, then quarterly inspections shall be resumed. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Heater 14-H1 shall be equipped with eight (8) - 6.25 MMBtu/hr John Zink COOLstar-12M low-NOx burners. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Heater 14-H2 shall be equipped with four (4) - 10 MMBtu/hr John Zink COOLstar-15M low-NOx burners. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Sulfur content (as H₂S) of fuel gas, natural gas or blended gas supplied to heaters 14H1 and 14H2 shall not exceed 100 ppmv (three hour rolling average). [District Rule 2201 and 40 CFR 60 subpart J] Federally Enforceable Through Title V Permit
11. Emission rate from heater 14H1 shall not exceed any of the following PM₁₀: 0.075 lb/MMBtu; NO_x (as NO₂): 30 ppmv @ 3% O₂ or 0.030 lb/MMBtu; VOC: 0.005 lb/MMBtu; nor CO: 240 ppmv @ 3% O₂. [District Rules 2201, 4305, 4306, and 4351] Federally Enforceable Through Title V Permit
12. Emission rate from heater 14H2 shall not exceed any of the following VOC: 0.0028 lb/MMBtu; NO_x (as NO₂): 30 ppmv @ 3% O₂ or 0.036 lb/MMBtu; nor CO: 100 ppmv @ 3% O₂. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Heaters 14H1 and 14H2 stack concentration of NO_x (as NO₂), CO, and O₂ shall be measured at least on a monthly basis using District approved portable analyzers. [District Rules 4305, 4306] Federally Enforceable Through Title V Permit
14. The permittee shall maintain records of the date and time of NO_x, CO, and O₂ measurements, the measured NO₂ and CO concentrations corrected to 3%O₂, and the O₂ concentration. The records must also include a description of any corrective action taken to maintain the emissions within the acceptable range. These records shall be retained at the facility for a period of no less than 5 years and shall be made available for District inspection upon request. [District Rules 4305, 4306] Federally Enforceable Through Title V Permit
15. If the NO_x or CO concentrations, as measured by the portable analyzer, exceed the allowable emissions rate, the permittee shall notify the District and take corrective action within one (1) hour after detection. If the portable analyzer readings continue to exceed the allowable emissions rate, the permittee shall conduct an emissions test within 60 days, utilizing District-approved test methods, to demonstrate compliance with the applicable emissions limits. [District Rules 4305, 4306] Federally Enforceable Through Title V Permit
16. Source testing to demonstrate compliance with NO_x and CO emission limits shall be conducted not less than once every 12 months, except as provided below. [District Rules 4305, 4306] Federally Enforceable Through Title V Permit
17. Source testing to demonstrate compliance with NO_x and CO emission limits shall be conducted not less than once every 36 months if compliance is demonstrated on two consecutive annual tests. [District Rules 4305, 4306] Federally Enforceable Through Title V Permit
18. If permittee fails any compliance demonstration for NO_x and CO emission limits when testing not less than once every 36 months, compliance with NO_x and CO emission limits shall be demonstrated not less than once every 12 months. [District Rules 4305, 4306] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

19. Source test results from an individual unit that is identical to this unit, in terms of rated capacity, operational conditions, fuel used, and control method, as approved by the APCO, will satisfy the NO_x and CO source testing requirement. [District Rule 4305] Federally Enforceable Through Title V Permit
20. Source testing shall be by District witnessed, or authorized, sample collection by ARB certified testing laboratory. [District Rule 1081] Federally Enforceable Through Title V Permit
21. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. [District Rule 1081] Federally Enforceable Through Title V Permit
22. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081] Federally Enforceable Through Title V Permit
23. Compliance source testing shall be conducted under conditions representative of normal operation. [District Rule 1081] Federally Enforceable Through Title V Permit
24. The following test methods shall be used: NO_x (ppmv) - EPA Method 7E or ARB Method 100, NO_x (lb/MMBtu) - EPA Method 19, CO (ppmv) - EPA Method 10 or ARB Method 100, and stack gas oxygen - EPA Method 3 or 3A or ARB Method 100. [District Rules 1081, 4305, 4306] Federally Enforceable Through Title V Permit
25. Permittee shall maintain a record of the sulfur content (as H₂S) of the fuel gas, natural gas and blended gas. [District Rule 2201] Federally Enforceable Through Title V Permit
26. Permittee shall maintain records of hhv of fuel burned and cumulative annual fuel use. [District Rules 1070 and 2520, 9.3.2] Federally Enforceable Through Title V Permit
27. Annual test results submitted to the District from unit(s) representing a group of units may be used to measure NO_x emissions of this permit for that group, provided the selection of the representative unit(s) is approved by the APCO prior to testing. Should any of the representative units exceed the required NO_x emission limits of this permit, each of the units in the group shall demonstrate compliance by emissions testing within 90 days of the failed test. (This requirement shall not supersede a more stringent NSR or PSD permit testing requirement.) [District Rules 2520, 9.3.2, 4305, 4306, and 4351, 6.3] Federally Enforceable Through Title V Permit
28. The following conditions must be met for representative unit(s) to be used to test for NO_x limits for a group of units: 1) all units are initially source tested and emissions from each unit in group are less than 90% of the permitted value and vary 25% or less from the average of all runs, 2) all units in group are similar in terms of rated heat input (rating not to exceed 100 MMBtu/hr), make and series, operation conditions, and control method, and 3) the group is owned by a single owner and located at a single stationary source. [District Rules 4305, 4306] Federally Enforceable Through Title V Permit
29. All units in a group for which representative units are source for NO_x emissions shall have received the same maintenance and tune-up procedures as the representative unit(s). These tune-up procedures shall be completed according to District Rule 4304 (Adopted October 19, 1995) and tune-up test results shall show comparable results for each unit in the group. Records shall be maintained for each unit of the group including all preventative and corrective maintenance work done. [District Rules 4305, 4306] Federally Enforceable Through Title V Permit
30. All units in a group for which representative units are source tested for NO_x emissions of this permit shall be fired on the same fuel type during the entire compliance period. If a unit switches for any time to an alternate fuel type (e.g. from natural gas to oil) then that unit shall not be considered part of the group and shall be required to undergo a source test for all fuel types used, within one year of the switch. [District Rules 4305, 4306] Federally Enforceable Through Title V Permit
31. The number of representative units source tested for NO_x emissions shall be at least 30% of the total number of units in the group. The units included in the 30% shall be rotated, so that in 3 years, all units in the entire group will have been tested at least once. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
32. The portable analyzer shall be calibrated prior to each use with a two-point calibration method (zero and span). Calibration shall be performed with certified calibration gases. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

DRAFT
CONDITIONS CONTINUE ON NEXT PAGE

33. Emissions for this unit shall be calculated using the arithmetic mean, pursuant to District Rule 1081(amended December 16, 1993), of 3 thirty-minute test runs for NO_x and CO. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
34. All required source testing shall conform to the compliance testing procedures described in District Rule 1081(Last Amended December 19,1993). [District Rule 1081] Federally Enforceable Through Title V Permit
35. Copies of all fuel invoices, gas purchase contracts, supplier certifications, and test results to determine compliance with the conditions of this permit shall be maintained. The operator shall record daily amount and type(s) of fuel(s) combusted and all dates on which unit is fired on any noncertified fuel. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
36. {588} Particulate matter emissions shall not exceed 0.1 grain/dscf, 0.1 grain/dscf calculated to 12% CO₂, nor 10 lb/hr. [District Rules 4201, 3.1 and 4301, 5.1 and 5.2.3] Federally Enforceable Through Title V Permit
37. Emissions of sulfur compounds from this unit shall not exceed 200 lb per hour, calculated as SO₂. Compliance with this requirement may be demonstrated by testing the sulfur content of each fuel and determining the maximum hourly emissions of sulfur compounds by multiplying the sulfur content of each fuel in lb/MMBtu by the maximum heat input rating of the unit; or by source testing in combination with fuel analysis. [District Rule 2520, 9.3.2 and District Rule 4301, 5.2.1] Federally Enforceable Through Title V Permit
38. When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, each fuel source shall be tested weekly for sulfur content and higher heating value. If compliance with the fuel sulfur content limit and sulfur emission limits has been demonstrated for 8 consecutive weeks for a fuel source, then the fuel testing frequency shall be semi-annually. If a semi-annual fuel content source test fails to show compliance, weekly testing shall resume. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
39. When complying with SO_x emission limits by testing of stack emissions, testing shall be performed not less than once every 12 months using EPA Method 6B; or Method 8; or, for units using gaseous fuel scrubbed for sulfur pre-combustion, a grab sample analysis by GC-FPD/TCD performed in the laboratory and EPA Method 19 to calculated emissions. Gaseous fuel fired units demonstrating compliance on two consecutive annual source tests shall be tested not less than once every thirty-six months; however, annual source testing shall resume if any test fails to show compliance. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
40. If the unit is fired on noncertified gaseous fuel and compliance with SO_x emission limits is achieved through fuel sulfur content limitations, then the sulfur content of the gaseous fuel being fired in the unit shall be determined using ASTM D 1072, D 3031, D 4084, D 3246 or grab sample analysis by GC-FPD/TCD performed in the laboratory. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
41. If fuel analysis is used to demonstrate compliance with the conditions of this permit, the fuel higher heating value for each fuel shall be certified by third party fuel supplier or determined by: ASTM D 1826 or D 1945 in conjunction with ASTM D 3588 for gaseous fuels. [District Rules 2520, 9.3.2, and District Rules 4305, 4306 and 4351, 6.2.1] Federally Enforceable Through Title V Permit
42. The concentration of sulfur compounds in the exhaust from this unit shall not exceed 0.2% by volume as measured on a dry basis over a 15 minute period (Kern County Rule 407). To demonstrate compliance with this requirement the operator shall test the sulfur content of each fuel source and demonstrate the sulfur content does not exceed 3.3% by weight for gaseous fuels; or determine that the concentration of sulfur compounds in the exhaust does not exceed the concentration limit by a combination of source testing and fuel analysis. [District Rule 4801] Federally Enforceable Through Title V Permit
43. Nitrogen oxide (NO_x) emission concentrations in ppmv shall be referenced at dry stack gas conditions, and shall be calculated to 3.00 percent by volume stack gas oxygen and averaged over 60 minutes, and lb/MMBtu rates shall be calculated as lb NO₂/MMBtu of heat input (hhv). [District Rules 2520, 9.3.2, and District Rules 4305, 5.0, 8.2, 4306, 5.0, 8.1, and/or 4351, 8.1] Federally Enforceable Through Title V Permit
44. Nitrogen oxide (NO_x) emissions shall not exceed 140 lb/hr, calculated as NO₂. [District Rules 4301, 5.2.2] Federally Enforceable Through Title V Permit

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE

45. Operators shall not depressurize any vessel containing VOCs unless the process unit turnaround is accomplished by employing one of the following operating procedures: The organic vapors shall either be recovered, added to the refinery fuel gas system and combusted; or controlled and piped to an appropriate firebox or incinerated for combustion; or flared, until the pressure within the process vessel is as close to atmospheric pressure as is possible. All process vessels shall be depressurized into the control facilities to less than 1020 mm Hg (5 psig) before venting/opening to atmosphere. All organic compounds which emerge from a refinery process vessel during the purging of said vessel and which otherwise would be emitted to the atmosphere shall be either directed to a flare or incinerator or shall be used for fuel until such disposition of emissions is not technically feasible or is less safe than atmospheric venting. [District Rule 4454, 4.0] Federally Enforceable Through Title V Permit
46. A component shall be considered leaking if one or more of the conditions specified in Sections 5.1.4.1 through 5.1.4.4 of Rule 4455 exist at the facility. For this permit unit, except for pumps and compressors, a minor gas leak shall be defined for any component listed in Rule 4455 Section 3.22 Table 1 in either liquid or gas/vapor service as a reading in excess of 100 ppmv above background up to and including a reading of 10,000 ppmv above background. For pumps, compressors and other component types not specifically listed in Rule 4455 Section 3.22 Table 1 in either liquid or gas/vapor service, a minor gas leak shall be defined as a reading in excess of 500 ppmv above background up to and including a reading of 10,000 ppmv above background. Readings shall be taken as methane using a portable hydrocarbon detection instrument and shall be made in accordance with the methods specified in Section 6.4.1 of Rule 4455. [District Rule 2201, and District Rule 4455, 5.1.4] Federally Enforceable Through Title V Permit
47. The operator shall not use any component that leaks in excess of the allowable leak standards of Rule 4455, or is found to be in violation of the provisions specified in Section 5.1.3. A component identified as leaking in excess of an allowable leak standard may be used provided it has been identified with a tag for repair, has been repaired, or is awaiting re-inspection after repair, within the applicable time period specified within the rule. [District Rule 4455, 5.1.1] Federally Enforceable Through Title V Permit
48. Each hatch shall be closed at all times except during sampling or adding of process material through the hatch, or during attended repair, replacement, or maintenance operations, provided such activities are done as expeditiously as possible and with minimal spillage of material and VOC emissions to the atmosphere. [District Rule 4455, 5.1.2] Federally Enforceable Through Title V Permit
49. The operator shall be in violation of Rule 4455 if any District inspection demonstrates that one or more of the conditions in Sections 5.1.4 exist at the facility. [District Rule 4455, 5.1.3.1] Federally Enforceable Through Title V Permit
50. Except for annual operator inspection described in Section 5.1.3.2.3, any operator inspection that demonstrates one or more of the conditions in Section 5.1.4 exist at the facility shall not constitute a violation of Rule 4455 if the leaking components are repaired as soon as practicable but not later than the time frame specified in Rule 4455. Such components shall not be counted towards determination of compliance with the provisions of Section 5.1.4. [District Rule 4455, 5.1.3.2.1] Federally Enforceable Through Title V Permit
51. Leaking components detected during operator inspection pursuant Section 5.1.3.2.1 that are not repaired, replaced, or removed from operation as soon as practicable but not later than the time frame specified in Rule 4455 shall be counted toward determination of compliance with the provisions of Section 5.1.4. [District Rule 4455, 5.1.3.2.2] Federally Enforceable Through Title V Permit
52. Any operator inspection conducted annually for a component type (including operator annual inspections pursuant to Section 5.2.5, 5.2.6, 5.2.7, or 5.2.8) that demonstrates one or more of the conditions in Section 5.1.4 exist at the facility shall constitute a violation of Rule 4455 regardless of whether or not the leaking components are repaired, replaced, or removed from operation within the allowable repair time frame specified in Rule 4455. [District Rule 4455, 5.1.3.2.3] Federally Enforceable Through Title V Permit
53. The operator shall audio-visually inspect for leaks all accessible operating pumps, compressors and Pressure Relief Devices (PRDs) in service at least once every 24 hours, except when operators do not report to the facility for that given 24 hours. Any identified leak that cannot be immediately repaired shall be reinspected within 24 hours using a portable analyzer. If a leak is found, it shall be repaired as soon as practical but not later than the time frame specified in Table 3. [District Rule 4455, 5.2.1 & 5.2.2] Federally Enforceable Through Title V Permit

54. The operator shall inspect all components at least once every calendar quarter, except for inaccessible components, unsafe-to-monitor components and pipes. Inaccessible components, unsafe-to-monitor components and pipes shall be inspected in accordance with the requirements set forth in Sections 5.2.5, 5.2.6, and 5.2.7. New, replaced, or repaired fittings, flanges and threaded connections shall be inspected immediately after being placed into service. Components shall be inspected using EPA Method 21. [District Rule 4455, 5.2.3, 5.2.4, 5.2.5, 5.2.6 & 5.2.7] Federally Enforceable Through Title V Permit
55. The operator may apply for a written approval from the APCO to change the inspection frequency from quarterly to annually for a component type, provided the operator meets all the criteria specified in Sections 5.2.8.1 through 5.2.8.3. This approval shall apply to accessible component types, specifically designated by the APCO, except pumps, compressors, and PRDs which shall continue to be inspected on a quarterly basis. [District Rule 4455, 5.2.8] Federally Enforceable Through Title V Permit
56. An annual inspection frequency approved by the APCO shall revert to quarterly inspection frequency for a component type if either the operator inspection or District inspection demonstrates that a violation of the provisions of Sections 5.1, 5.2 and 5.3 of the rule exists for that component type, or the APCO issued a Notice of Violation for violating any of the provisions of Rule 4455 during the annual inspection period for that component type. When the inspection frequency changes from annual to quarterly inspections, the operator shall notify the APCO in writing within five (5) calendar days after changing the inspection frequency, giving the reason(s) and date of change to quarterly inspection frequency. [District Rule 4455, 5.2.9 & 5.2.10] Federally Enforceable Through Title V Permit
57. The operator shall initially inspect a process PRD that releases to the atmosphere as soon as practicable but not later than 24 hours after the time of the release. To insure that the process PRD is operating properly, and is leak-free, the operator shall re-inspect the process PRD not earlier than 24 hours after the initial inspection but not later than 15 calendar days after the date of the release using EPA Method 21. If the process PRD is found to be leaking at either inspection, the PRD leak shall be treated as if the leak was found during quarterly operator inspections. [District Rule 4455, 5.2.11] Federally Enforceable Through Title V Permit
58. Except for process PRD, a component shall be inspected within 15 calendar days after repairing the leak or replacing the component using EPA Method 21. [District Rule 4455, 5.2.12] Federally Enforceable Through Title V Permit
59. Upon detection of a leaking component, the operator shall affix to that component a weatherproof readily visible tag that contains the information specified in Section 5.3.3. The tag shall remain affixed to the component until the leaking component has been repaired or replaced; has been re-inspected using EPA Method 21; and is found to be in compliance with the requirements of Rule 4455. [District Rule 4455, 5.3.1, 5.3.2 and 5.3.3] Federally Enforceable Through Title V Permit
60. An operator shall minimize all component leaks immediately to the extent possible, but not later than one (1) hour after detection of leaks in order to stop or reduce leakage to the atmosphere. [District Rule 4455, 5.3.4] Federally Enforceable Through Title V Permit
61. If the leak has been minimized but the leak still exceeds the applicable leak standards of Rule 4455, an operator shall repair or replace the leaking component, vent the leaking component to a closed vent system, or remove the leaking component from operation as soon as practicable but not later than the time period specified in Table 3. For each calendar quarter, the operator may be allowed to extend the repair period as specified in Table 3, for a total number of leaking components, not to exceed 0.05 percent of the number of components inspected, by type, rounded upward to the nearest integer where required. [District Rule 4455, 5.3.5] Federally Enforceable Through Title V Permit
62. If the leaking component is an essential component or a critical component and which cannot be immediately shut down for repairs, the operator shall minimize the leak within one hour after detection of the leak. If the leak has been minimized, but the leak still exceeds any of the applicable leak standards of Rule 4455, the essential component or critical component shall be repaired or replaced to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection, whichever comes earlier. [District Rule 4455 5.3.6] Federally Enforceable Through Title V Permit

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE

63. For any component that has incurred five repair actions for major gas leaks or major liquid leaks, or any combination of major gas leaks and major liquid leaks within a continuous 12-month period, the operator shall comply with at least one of the requirements specified in Sections 5.3.7.1, 5.3.7.2, 5.3.7.3, or 5.3.7.4 by the applicable deadlines specified in Sections 5.3.7.5 and 5.3.7.6. If the original leaking component is replaced with a new like-in-kind component before incurring five repair actions for major leaks within 12-consecutive months, the repair count shall start over for the new component. An entire compressor or pump need not be replaced provided the compressor part(s) or pump part(s) that have incurred five repair actions as described in Section 5.3.7 are brought into compliance with at least one of the requirements of Sections 5.3.7.1 through 5.3.7.6. [District Rule 4455, 5.3.7] Federally Enforceable Through Title V Permit
64. The operator shall monitor process PRD by using electronic process control instrumentation that allows for real time continuous parameter monitoring or by using telltale indicators for the process PRD where parameter monitoring is not feasible. This requirement applies only to any PRD that is vented to atmosphere. [District Rule 4455, 5.4.1] Federally Enforceable Through Title V Permit
65. All major components and critical components shall be physically identified clearly and visibly for inspection, repair, and recordkeeping purposes. The physical identification shall consist of labels, tags, manufacturer's nameplate identifier, serial number, or model number, or other system approved by the APCO that enables an operator or District personnel to locate each individual component. The operator shall replace tags or labels that become missing or unreadable as soon as practicable but not later than 24 hours after discovery. The operator shall comply with the requirements of Sections 6.1.4 if there is any change in the description of major components or critical components. [District Rule 4455, 5.5.1 & 5.5.2] Federally Enforceable Through Title V Permit
66. The operator shall keep a copy of the operator management plan at the facility and make it available to the APCO, ARB and US EPA upon request. By January 30 of each year, the operator shall submit to the APCO for approval, in writing, an annual report indicating any changes to the existing, approved operator management plan. [District Rule 4455, 6.1.2 & 6.1.4] Federally Enforceable Through Title V Permit
67. The operator shall maintain an inspection log containing, at a minimum, 1) total number of components inspected, and total number and percentage of leaking components found by component types, 2) location, type, name or description of each leaking component, and description of any unit where the leaking component is found, 3) date of leak detection and method of leak detection, 4) for gaseous leaks, record the leak concentration in ppmv, and for liquid leaks record whether the leak is a major liquid leak or a minor liquid leak, 5) date of repair, replacement, or removal from operation of leaking components, 6) identification and location of essential component and critical components found leaking that cannot be repaired until the next process unit turnaround or not later one year after leak detection, whichever comes earlier, 7) methods used to minimize the leak from essential components and critical components that cannot be repaired until the next process unit turnaround or not later one year after leak detection, whichever comes earlier, 8) after the component is repaired or is replaced, the date of reinspection and the leak concentration in ppmv, 9) inspector's name, business mailing address, and business telephone number, and 10) the facility operator responsible for the inspection and repair program shall sign and date the inspection log certifying the accuracy of the information recorded in the log. [District Rule 4455, 6.2.1] Federally Enforceable Through Title V Permit
68. Records of each calibration of the portable hydrocarbon detection instrument utilized for inspecting components, including a copy of current calibration gas certification from the vendor of said calibration gas cylinder, the date of calibration, concentration of calibration gas, analyzer reading of calibration gas before adjustment, instrument reading of calibration gas after adjustment, calibration gas expiration date, and calibration gas cylinder pressure at the time of calibration. [District Rule 4455, 6.2.3] Federally Enforceable Through Title V Permit
69. The operator shall notify the APCO, by telephone or other methods approved by the APCO, of any process PRD release described in Sections 5.4.4 and 5.4.5, and any release in excess of the reportable quantity limits as stipulated in 40 CFR, Part 117, Part 302 and Part 355, including any release in excess of 100 pounds of VOC, within one hour of such occurrence or within one hour of the time said person knew or reasonably should have known of its occurrence. This requirement applies only to any PRD that is vented to atmosphere. [District Rule 4455, 6.3.1] Federally Enforceable Through Title V Permit

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE

70. The operator shall submit a written report to the APCO within thirty (30) calendar days following a PRD release subject to 6.3.1. The written report shall include 1) process PRD type, size, and location, 2) date, time and duration of the process PRD release, 3) types of VOC released and individual amounts, in pounds, including supporting calculations, 4) cause of the process PRD release, and 5) corrective actions taken to prevent a subsequent process PRD release. This requirement applies only to any PRD that is vented to atmosphere. [District Rule 4455, 6.3.2] Federally Enforceable Through Title V Permit
71. Copies of all records shall be retained for a minimum of five (5) years after the date of an entry. Such records shall be made available to the APCO, ARB, or US EPA upon request. [District Rule 4455, 6.2.2, 6.2.3 & 6.2.4] Federally Enforceable Through Title V Permit
72. Measurements of gaseous leak concentrations shall be conducted according to US EPA Method 21 using an appropriate portable hydrocarbon detection instrument calibrated with methane. The instrument shall be calibrated in accordance with the procedures specified in US EPA Method 21 or the manufacturer's instruction, as appropriate, not more than 30 days prior to its use. The operator shall record the calibration date of the instrument. [District Rule 4455, 6.4.1] Federally Enforceable Through Title V Permit
73. The VOC content shall be determined using American Society of Testing and Materials (ASTM) D 1945 for gases and South Coast Air Quality Management District (SCAQMD) Method 304-91 for liquids. [District Rule 4455, 6.4.2] Federally Enforceable Through Title V Permit
74. The percent by volume liquid evaporated at 1500C shall be determined using ASTM D 86. [District Rule 4455, 6.4.3] Federally Enforceable Through Title V Permit
75. The owner or operator may apply to the Administrator for a determination of equivalency for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in Subpart GGG. In doing so, the owner or operator shall comply with the requirements of 40 CFR 60.484. [40 CFR 60.592(c)] Federally Enforceable Through Title V Permit
76. Each pump in light liquid service (PLLS) shall be monitored monthly to detect leaks by the methods specified in 40 CFR 60.485(b), except as provided in 40 CFR 60.482-1(c) and 40 CFR 60.482-2(d), (e), and (f). Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. A leak is detected if an instrument reading of 10,000 ppm or greater is measured or if there are indications of liquids dripping from the pump seal. [40 CFR 60.482-2(a) and (b)] Federally Enforceable Through Title V Permit
77. When a leak is detected for each PLLS, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 60.482-9. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-2(c)] Federally Enforceable Through Title V Permit
78. Each PLLS equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of 40 CFR 60.482-2(a) provided the requirements specified in 40 CFR 60.482-2(d)(1) through (6) are met. [40 CFR 60.482(d)] Federally Enforceable Through Title V Permit
79. Any PLLS that is designated, as described in 40 CFR 60.486(e)(1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of 40 CFR 60.482-2(a), (c), and (d) if the pump meets the requirements specified in 40 CFR 60.482-2(e)(1), (2), and (3). [40 CFR 60.482-2(e)] Federally Enforceable Through Title V Permit
80. If any PLLS is equipped with a closed vent system capable of capturing and transporting leakage from the seal or seals to a control device that complies with the requirements of 40 CFR 60.482-10, it is exempt from the requirements of 40 CFR 60.482-2(a) through (e). [40 CFR 60.482-2(f)] Federally Enforceable Through Title V Permit
81. Any pump in PLLS that is designated, as described in 40 CFR 60.486(f)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of 40 CFR 60.482-2(a) and 40 CFR 60.482-2(d)(4) through (6) if: 1) The owner or operator of the pump demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with 40 CFR 60.482-2(a); and 2) The owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in 40 CFR 60.482-2(c) if a leak is detected. [40 CFR 60.482-2(g)] Federally Enforceable Through Title V Permit

DRAFT
CONDITIONS CONTINUE ON NEXT PAGE

82. Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of 40 CFR 60.482-2(a)(2) and (d)(4) and the daily requirements of 40 CFR 60.482-2(d)(5), provided that each pump is visually inspected as often as practicable and at least monthly. [40 CFR 60.482-2(h)] Federally Enforceable Through Title V Permit
83. Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in 40 CFR 60.485(c). [40 CFR 60.482-4(a)] Federally Enforceable Through Title V Permit
84. After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in 40 CFR 60.482-9. No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in 40 CFR 60.485(c). [40 CFR 60.482-4(b)] Federally Enforceable Through Title V Permit
85. Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in 40 CFR 60.482-10 is exempted from the requirements of 40 CFR 60.482-4(a) and (b). [40 CFR 60.482-4(c)] Federally Enforceable Through Title V Permit
86. Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the 40 CFR 60.482-4(a) and (b), provided the owner or operator complies with the requirements in 40 CFR 60.482-4(d)(2) of this section. After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in 40 CFR 60.482-9. [40 CFR 60.482-4(d)] Federally Enforceable Through Title V Permit
87. Except for in-situ sampling systems and sampling systems without purges, each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system, except as provided in 40 CFR 60.482-1(c). Each closed-purge, closed-loop, or closed-vent system shall comply with the requirements specified in 40 CFR 60.482-5(b)(1), (2), (3), and (4). [40 CFR 60.482-5(a), (b), and (c)] Federally Enforceable Through Title V Permit
88. Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in 40 CFR 60.482-1(c). The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line. When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with this condition at all other times. [40 CFR 60.482-6(a) and (c)] Federally Enforceable Through Title V Permit
89. Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed. [40 CFR 60.482-6(b)] Federally Enforceable Through Title V Permit
90. Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of 40 CFR 60.482-6(a), (b) and (c). [40 CFR 60.482-6(d)] Federally Enforceable Through Title V Permit
91. Open-ended valves or lines containing materials which would autocatalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in 40 CFR 60.482-6(a) through (c) are exempt from the requirements of 40 CFR 60.482-6(a) through (c). [40 CFR 60.482-6(e)] Federally Enforceable Through Title V Permit
92. Each valve in gas/vapor service and in light liquid service shall be monitored monthly to detect leaks by the methods specified in 40 CFR 60.485(b) and shall comply with 40 CFR 60.482-7(b) through (e), except as provided in 40 CFR 60.482-7(f), (g), and (h), 40 CFR 60.483-1, 40 CFR 60.483-2, and 40 CFR 60.482-1(c). A leak is detected if an instrument reading of 10,000 ppm or greater is measured. [40 CFR 60.482-7(a) and (b)] Federally Enforceable Through Title V Permit

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE

93. Any valve in gas/vapor service or in light liquid service for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected. If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months. [40 CFR 60.482-7(c)] Federally Enforceable Through Title V Permit
94. When a leak is detected for any valve in gas/vapor service or in light liquid service, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in 40 CFR 60.482-9. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. First attempts at repair include, but are not limited to, the best practices specified in 40 CFR 60.482-7(e)(1), (2), (3), and (4), where practicable. [40 CFR 60.482-7(d) and (e)] Federally Enforceable Through Title V Permit
95. Any valve in gas/vapor service or in light liquid service that is designated, as described in 40 CFR 60.486(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of 40 CFR 60.482-7(a) if the valve meets the requirements specified in 40 CFR 60.482-7(f)(1), (2), and (3). [40 CFR 60.482-7(f)] Federally Enforceable Through Title V Permit
96. Any valve in gas/vapor service or in light liquid service that is designated, as described in 40 CFR 60.486(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of 40 CFR 60.482-7(a) if: 1) The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with 40 CFR 60.482-7(a); and 2) The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times. [40 CFR 60.482-7(g)] Federally Enforceable Through Title V Permit
97. Any valve in gas/vapor service or in light liquid service that is designated, as described in 40 CFR 60.486(f)(2), as a difficult-to-monitor valve is exempt from the requirements of 40 CFR 60.482-7(a) if: 1) The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface; 2) The process unit within which the valve is located either becomes an affected facility through 40 CFR 60.14 or 40 CFR 60.15 or the owner or operator designates less than 3.0 percent of the total number of valves as difficult-to-monitor; and 3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year. [40 CFR 60.482-7(h)] Federally Enforceable Through Title V Permit
98. The owner or operator may elect to comply with the applicable provisions for valves in gas/vapor service and in light liquid service as specified in 40 CFR 60.483-1 and 60.483-2. [40 CFR 60.592(b)] Federally Enforceable Through Title V Permit
99. If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors, the owner or operator shall follow either one of the following procedures: 1) The owner or operator shall monitor the equipment within 5 days by the method specified in 40 CFR 60.485(b) and shall comply with the requirements of 40 CFR 60.482-8(b) through (d); or 2) The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak. A leak is detected if an instrument reading of 10,000 ppm or greater is measured. [40 CFR 60.482-8(a) and (b)] Federally Enforceable Through Title V Permit
100. When a leak is detected in pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR 60.482-9. The first attempt at repair shall be made no later than 5 calendar days after each leak is detected. First attempts at repair include, but are not limited to, the best practices described under 40 CFR 60.482-7(e). [40 CFR 60.482-8(c) and (d)] Federally Enforceable Through Title V Permit
101. For closed vent systems and control devices, vapor recovery systems shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, whichever is less stringent. [40 CFR 60.482-10(b)] Federally Enforceable Through Title V Permit
102. For closed vent systems and control devices, enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 degrees C. [40 CFR 60.482-10(c)] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

103. Flares used to comply with Subpart GGG shall comply with the requirements of 40 CFR 60.18. [40 CFR 60.482-10(d)] Federally Enforceable Through Title V Permit
104. Owners or operators of control devices used to comply with the provisions of Subpart GGG shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. [40 CFR 60.482-10(e)] Federally Enforceable Through Title V Permit
105. Except as provided in 40 CFR 60.482-10(i) through (k), each closed vent system used to comply with the provisions of Subpart GGG shall be inspected according to the procedures and schedule specified in 40 CFR 60.482-10(f)(1) and (f)(2). Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired as soon as practicable except as provided in 40 CFR 60.482-10(h). A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. Repair shall be completed no later than 15 calendar days after the leak is detected. [40 CFR 60.482-10(f) and (g)] Federally Enforceable Through Title V Permit
106. Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown. [40 CFR 60.482-10(h)] Federally Enforceable Through Title V Permit
107. If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of 40 CFR 60.482-10(f)(1)(i) and (f)(2). [40 CFR 60.482-10(i)] Federally Enforceable Through Title V Permit
108. Any parts of the closed vent system that are designated, as described in 40 CFR 60.482-10(l)(1), as unsafe to inspect are exempt from the inspection requirements of 40 CFR 60.482-10(f)(1)(i) and (f)(2) if they comply with the requirements specified in 40 CFR 60.482-10 (j)(1) and (j)(2). [40 CFR 60.482-10(j)] Federally Enforceable Through Title V Permit
109. Any parts of the closed vent system that are designated, as described in 40 CFR 60.482-10(l)(2), as difficult to inspect are exempt from the inspection requirements of 40 CFR 60.482-10(f)(1)(i) and (f)(2) if they comply with the requirements specified in 40 CFR 60.482-10(k)(1) through (k)(3). [40 CFR 60.482-10(k)] Federally Enforceable Through Title V Permit
110. The owner or operator shall record the following information: 1) Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment; 2) Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment; 3) For each inspection during which a leak is detected, a record of the information specified in 40 CFR 60.486(c); 4) For each inspection conducted in accordance with 40 CFR 60.485(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected; and 5) For each visual inspection conducted in accordance with 40 CFR 60.482-10(f)(1)(ii) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected. [40 CFR 60.482-10(l)] Federally Enforceable Through Title V Permit
111. Closed vent systems and control devices used to comply with provisions Subpart GGG shall be operated at all times when emissions may be vented to them. [40 CFR 60.482-10(m)] Federally Enforceable Through Title V Permit
112. In conducting the performance tests required in 40 CFR 60.8, the owner or operator shall use as reference methods and procedures the test methods in 40 CFR 60, Appendix A or other methods and procedures as specified in 40 CFR 60.485, except as provided in 40 CFR 60.8(b). [40 CFR 60.485(a)] Federally Enforceable Through Title V Permit
113. The owner or operator shall determine compliance with the standards in 40 CFR 60.482, 60.483, and 60.484 as follows: Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21. The following calibration gases shall be used: (i) Zero air (less than 10 ppm of hydrocarbon in air); and (ii) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane. [40 CFR 60.485(b)] Federally Enforceable Through Title V Permit

114. The owner or operator shall determine compliance with the no detectable emission standards in 40 CFR 60.482-2(e), 60.482-3(i), 60.482-4, 60.482-7(f), and 60.482-10(e) as follows: 1) The requirements of 40 CFR 60.485(b) shall apply. 2) Method 21 shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance. [40 CFR 60.485(c)] Federally Enforceable Through Title V Permit
115. The owner or operator shall test each piece of equipment unless demonstrated that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used: 1) Procedures that conform to the general methods in ASTM E260-73, 91, or 96, E168-67, 77, or 92, E169-63, 77, or 93 (incorporated by reference as seen in 40 CFR 60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment; 2) Organic compounds that are considered by the Administrator to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid; and 3) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, the previous two procedures as specified in 40 CFR 60.485(d)(1) and (2) shall be used to resolve the disagreement. [40 CFR 60.485(d)] Federally Enforceable Through Title V Permit
116. The owner or operator shall demonstrate that an equipment is in light liquid service by showing that all the following conditions apply: 1) The vapor pressure of one or more of the components is greater than 0.3 kPa at 20 °C (1.2 in. H₂O at 68 degrees F). Standard reference texts or ASTM D2879-83, 96, or 97 (incorporated by reference as seen in 40 CFR 60.17) shall be used to determine the vapor pressures; 2) The total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20 degrees Celsius is equal to or greater than 20 percent by weight; and 3) The fluid is a liquid at operating conditions. [40 CFR 60.485(e)] Federally Enforceable Through Title V Permit
117. Samples used in conjunction with 40 CFR 60.485(d), (e), and (g) shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare. [40 CFR 60.485(f)] Federally Enforceable Through Title V Permit
118. The owner or operator shall determine compliance with the standards of flares as specified in 40 CFR 60.485(g)(1), (2), (3), (4), (5), (6), and (7). [40 CFR 60.485(g)] Federally Enforceable Through Title V Permit
119. An owner or operator of more than one affected facility subject to the provisions Subpart GGG may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility. [40 CFR 60.486(a)] Federally Enforceable Through Title V Permit
120. When each leak is detected as specified in 40 CFR 60.482-2, 60.482-3, 60.482-7, 60.482-8, and 60.483-2, the following requirements apply: 1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment; 2) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in 40 CFR 60.482-7(c) and no leak has been detected during those 2 months; and 3) The identification on equipment except on a valve, may be removed after it has been repaired. [40 CFR 60.486(b)] Federally Enforceable Through Title V Permit
121. When each leak is detected as specified in 40 CFR 60.482-2, 60.482-3, 60.482-7, 60.482-8, and 60.483-2, the following information shall be recorded in a log and shall be kept for 5 years in a readily accessible location: 1) The instrument and operator identification numbers and the equipment identification number; 2) The date the leak was detected and the dates of each attempt to repair the leak; 3) Repair methods applied in each attempt to repair the leak; 4) "Above 10,000" if the maximum instrument reading measured by the methods specified in 40 CFR 60.485(a) after each repair attempt is equal to or greater than 10,000 ppm; 5) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak; 6) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown; 7) The expected date of successful repair of the leak if a leak is not repaired within 15 days; 8) Dates of process unit shutdown that occur while the equipment is unrepaired; and 9) The date of successful repair of the leak. [40 CFR 60.486(c) and District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

122. The following information pertaining to the design requirements for closed vent systems and control devices described in 40 CFR 60.482-10 shall be recorded and kept in a readily accessible location: 1) Detailed schematics, design specifications, and piping and instrumentation diagrams; 2) The dates and descriptions of any changes in the design specifications; 3) A description of the parameter or parameters monitored, as required in 40 CFR 60.482-10(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring; 4) Periods when the closed vent systems and control devices required in 40 CFR 60.482-2, 60.482-3, 60.482-4, and 60.482-5 are not operated as designed, including periods when a flare pilot light does not have a flame; and 5) Dates of startups and shutdowns of the closed vent systems and control devices required in 40 CFR 60.482-2, 60.482-3, 60.482-4, and 60.482-5. [40 CFR 60.486(d)] Federally Enforceable Through Title V Permit
123. The following information pertaining to all equipment subject to the requirements in 40 CFR 60.482-1 to 60.482-10 shall be recorded in a log that is kept in a readily accessible location: 1) A list of identification numbers for equipment subject to the requirements of Subpart GGG; 2) (i) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of 40 CFR 60.482-2(e), 60.482-3(i) and 60.482-7(f). (ii) The designation of equipment as subject to the requirements of 40 CFR 60.482-2(e), 60.482-3(i) and 60.482-7(f) shall be signed by the owner or operator; 3) A list of equipment identification numbers for pressure relief devices required to comply with §60.482-4; 4) (i) The dates of each compliance test as required in 40 CFR 60.482-2(e), 60.482-3(i), §60.482-4, and 60.482-7(f). (ii) The background level measured during each compliance test. (iii) The maximum instrument reading measured at the equipment during each compliance test; and 5) A list of identification numbers for equipment in vacuum service. [40 CFR 60.486(e)] Federally Enforceable Through Title V Permit
124. The following information pertaining to all valves subject to the requirements of 40 CFR 60.482-7(g) and (h) and to all pumps subject to the requirements of 40 CFR 60.482-2(g) shall be recorded in a log that is kept in a readily accessible location: 1) A list of identification numbers for valves and pumps that are designated as unsafe-to-monitor, an explanation for each valve or pump stating why the valve or pump is unsafe-to-monitor, and the plan for monitoring each valve or pump; and 2) A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the schedule for monitoring each valve. [40 CFR 60.486(f)] Federally Enforceable Through Title V Permit
125. The following information shall be recorded for valves complying with 40 CFR 60.483-2: 1) A schedule of monitoring; 2) The percent of valves found leaking during each monitoring period. [40 CFR 60.486(g)] Federally Enforceable Through Title V Permit
126. The following information shall be recorded in a log that is kept in a readily accessible location: 1) Design criterion required in 40 CFR 60.482-2(d)(5) and 60.482-3(e)(2) and explanation of the design criterion; and 2) Any changes to this criterion and the reasons for the changes. [40 CFR 60.486(h)] Federally Enforceable Through Title V Permit
127. The following information shall be recorded in a log that is kept in a readily accessible location for use in determining exemptions as provided in 40 CFR 60.480(d): 1) An analysis demonstrating the design capacity of the affected facility; 2) A statement listing the feed or raw materials and products from the affected facilities and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol; and 3) An analysis demonstrating that equipment is not in VOC service. [40 CFR 60.486(i)] Federally Enforceable Through Title V Permit
128. Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location. [40 CFR 60.486(j)] Federally Enforceable Through Title V Permit
129. The provisions of 40 CFR 60.7 (b) and (d) do not apply to affected facilities subject to Subpart GGG. [40 CFR 60.486(k)] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

130. All semiannual reports to the Administrator shall include the following information, summarized from the information in 40 CFR 60.486: 1) Process unit identification; 2) For each month during the semiannual reporting period, i) Number of valves for which leaks were detected as described in 40 CFR 60.482-7(b) or 40 CFR 60.483-2, (ii) Number of valves for which leaks were not repaired as required in 40 CFR 60.482-7(d)(1), (iii) Number of pumps for which leaks were detected as described in 40 CFR 60.482-2(b) and (d)(6)(i), (iv) Number of pumps for which leaks were not repaired as required in 40 CFR 60.482-2(c)(1) and (d)(6)(ii), (v) Number of compressors for which leaks were detected as described in 40 CFR 60.482-3(f), (vi) Number of compressors for which leaks were not repaired as required in 40 CFR 60.482-3(g)(1), and (vii) The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible; 3) Dates of process unit shutdowns which occurred within the semiannual reporting period; 4) Revisions to items reported in the semiannual report if changes have occurred since the initial report, as required in 40 CFR 60.487 (a) and (b), or subsequent revisions to the initial report. [40 CFR 60.487(c)] Federally Enforceable Through Title V Permit
131. An owner or operator electing to comply with the provisions of 40 CFR 60.483-1 and 60.483-2 shall notify the Administrator of the alternative standard selected 90 days before implementing either of the provisions. [40 CFR 60.487(d)] Federally Enforceable Through Title V Permit
132. An owner or operator shall report the results of all performance tests in accordance with 40 CFR 60.8 of the General Provisions. The provisions of 40 CFR 60.8(d) do not apply to affected facilities subject to the provisions of Subpart GGG except that an owner or operator must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests. [40 CFR 60.487(e)] Federally Enforceable Through Title V Permit
133. The semiannual reporting requirements of 40 CFR 60.487(a), (b), and (c) remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with the requirements of 40 CFR 60.487(a), (b), and (c), provided that they comply with the requirements established by the State. [40 CFR 60.487(f)] Federally Enforceable Through Title V Permit
134. Compressors are exempt from the standards of Subpart GGG if the owner or operator demonstrates that a compressor is in hydrogen service. Each compressor is presumed not to be in hydrogen service unless an owner or operator demonstrates that the piece of equipment is in hydrogen service. For a piece of equipment to be considered in hydrogen service, it must be determined that the percent hydrogen content can be reasonably expected always to exceed 50 percent by volume. For purposes of determining the percent hydrogen content in the process fluid that is contained in or contacts a compressor, procedures that conform to the general method described in ASTM E-260, E-168, or E-169 shall be used. An owner or operator may use engineering judgment demonstrate that the percent content exceeds 50 percent by volume, provided the engineering judgment demonstrates that the content clearly exceeds 50 percent by volume. When an owner or operator and the Administrator do not agree on whether a piece of equipment is in hydrogen service, however, the procedures that conform to the general method described in ASTM E-260, E-168, or E-169 shall be used to resolve the disagreement. If an owner or operator determines that a piece of equipment is in hydrogen service, the determination can be revised only after following the procedures that conform to the general method described in ASTM E-260, E-168, or E-169. [40 CFR 60.593(b)] Federally Enforceable Through Title V Permit
135. Any existing reciprocating compressor that becomes an affected facility under provisions of 40 CFR 60.14 or 40 CFR 60.15 is exempt from 40 CFR 60.482-3 (a), (b), (c), (d), (e), and (h) provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of 40 CFR 60.482-3 (a), (b), (c), (d), (e), and (h). [40 CFR 60.593(c)] Federally Enforceable Through Title V Permit
136. An owner or operator may use the following provision in addition to 40 CFR 60.485(e): Equipment is in light liquid service if the percent evaporated is greater than 10 percent at 150 °C as determined by ASTM Method D86-78, 82, 90, 95, or 96. [40 CFR 60.593(d)] Federally Enforceable Through Title V Permit
137. Equipment that is in vacuum service is excluded from the requirements of 40 CFR 60.482-2 to 40 CFR 60.482-10 if it is identified as required in 40 CFR 60.486(e)(5). [40 CFR 60.482-1(d)] Federally Enforceable Through Title V Permit
138. The operator shall not burn in any fuel gas combustion device any fuel that contains hydrogen sulfide (H₂S) in excess of 0.1 gr/dscf (230 mg/dscm) [40 CFR 60.104(a)(1)] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

139. For fuel gas combustion devices, a continuous emissions monitoring system shall be installed, calibrated, operated, and reported according to EPA guidelines as specified under 40 CFR 60.105(a)(3). CEM results shall be calculated on a rolling three (3) hour basis. [40 CFR 60, 60.105(a)(3)] Federally Enforceable Through Title V Permit
140. For fuel gas combustion devices, operator shall report all rolling 3-hour periods during which the average concentration of H₂S as measured by the H₂S continuous monitoring system exceeds 0.10 gr/dscf (230 mg/dscm) or during which the average concentration of SO₂ as measured by the SO₂ continuous monitoring system exceeds 20 ppm (dry basis, zero percent excess air). [40 CFR 60.105(e)(3)] Federally Enforceable Through Title V Permit
141. Operator shall determine compliance with the H₂S standard using EPA Methods 11, 15, 15A, or 16. [40 CFR 60.106(e)] Federally Enforceable Through Title V Permit
142. For any periods for which sulfur dioxide or oxides emissions data are not available, the operator shall submit a signed statement indicating if any changes were made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit. Operations of the control system and affected facility during periods of data unavailability are to be compared with operation of the control system and affected facility before and following the period of data unavailability. [40 CFR 60.107(d)] Federally Enforceable Through Title V Permit
143. The owner or operator shall submit the reports required under this subpart to the District semiannually for each six-month period. All semiannual reports shall be postmarked by the 30th day following the end of each six-month period. The owner or operator shall submit a signed statement certifying the accuracy and completeness of the information contained in the report. [40 CFR 60.107(e) and 60.107(f)] Federally Enforceable Through Title V Permit
144. The operator shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
145. Compliance with permit conditions in the Title V permit shall be deemed compliance with SJVUAPCD Rule 4455. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
146. Compliance with permit conditions in the Title V permit shall be deemed compliance with 40 CFR 60 Subpart GGG. A permit shield is granted from this requirement. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
147. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 192 lb, 2nd quarter - 192 lb, 3rd quarter - 192 lb, and fourth quarter - 192 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). [District Rule 2201] Federally Enforceable Through Title V Permit
148. ERC Certificate Number S-2452-1 (or a certificate split from this certificate) 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

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-33-41-4

LEGAL OWNER OR OPERATOR: BIG WEST OF CA, LLC
MAILING ADDRESS: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

LOCATION: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

SECTION: 27 TOWNSHIP: 29S RANGE: 27E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 80,000 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK #80006 WITH VAPOR CONTROL SYSTEM SERVING TANKS S-33-42, S-33-46 AND MARKETING TERMINAL S-3303-1 WITH VAPOR COMPRESSORS, VAPOR HOLDING TANK, CONDENSATE TANK AND MISC. PUMPS, PIPING AND VESSELS: INCREASE CONTROL EFFICIENCY TO 99%

CONDITIONS

1. 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. The tank shall be equipped with a vapor control system consisting of vapor and condensate collection systems capable of reducing VOC emissions by at least 99%, except for those periods described below when operation of the vapor control system is not required. [District Rule 2201, District Rule 4623, 5.6.1 and 40 CFR 60.112a(a)(3)] Federally Enforceable Through Title V Permit
4. All tank openings and fittings shall remain gas tight (as defined by Rule 4623) during normal operation, except for those periods described below when operation of the vapor control system is not required. [District Rule 4623] Federally Enforceable Through Title V Permit
5. Vapor control system shall be in use at all times when marketing terminal truck loading operation S-3301-1 is operating. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 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-33-41-4 : Aug 25 2008 1:03PM - LEONARDS : Joint Inspection Required with LEONARDS

6. Tank vapor control system shall be in use at all times, except when tank is storing treated wastewater, liquids with a true vapor pressure less than 0.2 psia, liquids with an initial boiling point of 302 deg F or higher, or when tank is undergoing maintenance or cleaning. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Tank may be disconnected from vapor control system during maintenance and cleaning periods provided liquids and vapors subject to Rule 4623 are completely removed and vapor lines are isolated. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Permittee shall receive written or faxed approval from the District Compliance division prior to tank vapor control system disconnection. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Upon reconnection to vapor control system, permittee shall demonstrate using a portable hydrocarbon monitor that all tank pressure relief valves and other fugitive components associated with the tank are leak free, as defined in Rule 4623. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Permittee shall keep a record of each period of storage when tank vapor control system is not in operation and of the initial boiling point or true vapor pressure of each organic liquid stored in the tank during such periods. [District Rule 2201] Federally Enforceable Through Title V Permit
11. Collected condensate shall be piped only to regular gasoline tank. [District Rule 2201] Federally Enforceable Through Title V Permit
12. Compressor(s) shall activate when tank internal pressure exceeds 0.2 psig. [District Rule 2201] Federally Enforceable Through Title V Permit
13. Gasoline condensate holding tank shall vent only to vapor holding tank #73-S-31, and vapor holding tank shall have no open vents. [District Rule 2201] Federally Enforceable Through Title V Permit
14. All vapor lines shall slope toward vapor holding tank. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Collected vapors shall discharge only to refinery fuel gas or flare gas system. [District Rule 2201] Federally Enforceable Through Title V Permit
16. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a gas-tight cover which shall be closed at all times except during gauging or sampling. Gas-tight shall be defined as emitting no more than 10,000 ppmv, above background, of methane measured at a distance of one centimeter from the potential source with an instrument calibrated with methane in accordance with EPA Method 21. Emissions in excess of this limit shall be considered a leak. [District Rule 4623, 5.6.2] Federally Enforceable Through Title V Permit
17. All piping, valves and fittings shall be constructed and maintained in a gas-tight condition. Gas-tight shall be defined as emitting no more than 10,000 ppmv, above background, of methane measured at a distance of one centimeter from the potential source with an instrument calibrated with methane in accordance with EPA Method 21. Emissions in excess of this limit shall be considered a leak. [District Rule 4623, 5.6.3] Federally Enforceable Through Title V Permit
18. All piping, fittings, and valves 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 provisions of this permit. If any of the tank components are found to leak during an annual inspection, the inspection frequency for that component type shall be changed from annual to quarterly. If no tank components are subsequently found to be leaking during five consecutive inspections, the inspection frequency may be changed from quarterly to annual. Components located in inaccessible (over 15 feet above ground when access is required from the ground or over 6 feet away from a platform when access is required from the platform) locations shall be inspected at least annually and components located in unsafe areas shall be inspected and repaired at the next process unit turnaround (the scheduled shutdown of a unit for maintenance and repair work). [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
19. A facility operator, upon detection of a leaking component, shall affix to that component a weatherproof readily visible tag bearing the date on which the leak is detected. The tag shall remain in place until the leaking component is repaired, reinspected and found to be in compliance with the requirements of this rule. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

20. An operator shall reinspect a component for leaks within thirty working days after the date on which the component is repaired. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
21. Any component leak shall be repaired to a leak-free condition or vented to a flare satisfying the requirements of 40 CFR 60.18 or to a vapor control device that is at least 95 percent efficient as measured by EPA Method 25 within fifteen (15) calendar days of detection. The APCO may grant a ten (10) calendar day extension provided the operator demonstrates that necessary and sufficient actions are being taken to correct the leak within this time period. Any vapor control device, other than a flare, used to comply with this condition shall demonstrate at least 95% control efficiency as measured by EPA Method 25 at least annually. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
22. If the leaking component is an essential part of a critical process unit which cannot be immediately shut down for repairs, the operator shall 1) Minimize the leak within 15 calendar days; and 2) If the leak which has been minimized still exceeds the concentration allowed by this permit, the essential component shall be repaired to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection. A critical process unit is any process unit which would result in the automatic shutdown of other process units if it were shut down. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
23. Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date of leak detection, and method of detection; 3) Date and emission level of recheck after leak is repaired; 4) Identification and location of essential parts of critical process units found leaking that cannot be repaired until the next process unit turnaround; and 5) Method used to minimize the leak from essential parts of critical process units which cannot be repaired until the next process unit turnaround. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
24. Operator shall keep a record of liquids stored in each container, storage temperature, the True vapor pressure (TVP), and the API gravity of such liquids. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
25. Control efficiency shall be determined by a comparison of controlled emissions to those emissions which would occur from a fixed or cone roof tank in the same product service without a vapor recovery system. Emissions shall be determined based on tank emission factors in EPA Publication AP-42, component counts for fugitive emissions sources, recognized emission factors for fugitive emission sources and the efficiency of any VOC destruction device. [District Rule 4623, 6.4] Federally Enforceable Through Title V Permit
26. The efficiency of any VOC destruction device shall be measured by EPA Method 25, 25a, or 25b, and analysis of halogenated exempt compounds shall be analyzed by ARB Method 432. [District Rule 4623, 6.2.5] Federally Enforceable Through Title V Permit
27. The operator shall ensure that the vapor recovery system is functional and is operating as designed whenever emissions are being vented to it. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
28. True vapor pressure shall be measured using Reid vapor pressure ASTM Method D323-82 modified by maintaining the hot water bath at storage temperature. Where storage temperature is above 100 °F true vapor pressure shall be determined by Reid vapor pressure at 100 °F and ARB approved calculations. [District Rule 4623, 6.2.2 and District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
29. True vapor pressure of crude oil with an API (American Petroleum Institute) gravity less than 30°, as determined by API 2547, may be determined by Headspace Gas Chromatography using the procedures from ARB Evaluation of a Method for Determining Vapor Pressures of Petroleum Mixtures by Headspace Gas Chromatography, October 1990. [District Rule 4623, 6.2.3 and District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
30. Operator shall determine the true vapor pressure of the petroleum liquid stored in the tank at least once per year in accordance with methods described in section 6.2 of District Rule 4623 (amended 5/19/2005). Determinations shall be made annually during summer and whenever there is a change in the source or type of petroleum entering the tank. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
31. Construction, reconstruction, or modification of this unit was commenced after May 18, 1978 and prior to July 23, 1984. Therefore, the requirements of 40 CFR 60 Subpart K and Kb do not apply to this source. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

32. As used in this permit, the term "source or type of petroleum" shall mean petroleum liquids with similar characteristics. The operator shall maintain records of API gravity of petroleum liquids stored in this unit to determine which oil are from common source. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-33-67-4

LEGAL OWNER OR OPERATOR: BIG WEST OF CA, LLC
MAILING ADDRESS: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

LOCATION: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

SECTION: 28 TOWNSHIP: 29S RANGE: 27E

EQUIPMENT DESCRIPTION:

MODIFICATION OF 30,000 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK (# 30M02): CONNECT TO REFINERY VAPOR CONTROL SYSTEM, ALLOW STORAGE OF LIQUIDS WITH A TVP GREATER THAN 0.5 PSIA, AND ALLOW OPERATION WITHOUT BEING CONNECTED TO REFINERY VAPOR CONTROL SYSTEM WHEN STORING DIESEL FUEL

CONDITIONS

1. 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. The tank shall be equipped with a vapor control system consisting of vapor and condensate collection systems capable of reducing VOC emissions by at least 99%, except for those periods described below when operation of the vapor control system is not required. [District Rules 2201, 4623, 5.6.1 and 40 CFR 60.112a(a)(3)] Federally Enforceable Through Title V Permit
4. Except when storing or processing diesel motor fuel, or preparing the tank for product change between diesel fuel and any other organic liquids, the tank shall always be connected to the vapor control system. [District Rule 2201] Federally Enforceable Through Title V Permit
5. All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 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-33-67-4, Aug 25 2008 1:03PM -- LEONARDS : Joint Inspection Required with LEONARDS

6. A leak-free 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 and shall be reported as a deviation, except as provided below. [District Rule 4623] Federally Enforceable Through Title V Permit
7. If any of the tank components are found to be leaking (>500 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21), the facility operator shall affix to that component a weatherproof readily visible tag bearing the date on which the leak is detected. The tag shall remain in place until the leaking component is repaired, reinspected, and found to be in compliance with the requirements of Rule 4623. The operator shall maintain records of gas leak detection readings, date/time leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 4623 and 40 CFR 60.112b(a)(3)(i)] Federally Enforceable Through Title V Permit
8. Leaks measuring > 500 ppmv and < 10,000 ppmv, or leaks measuring > 10,000 ppmv from components within five feet of the tank that have been discovered by the operator and have been immediately tagged and repaired within the deadlines specified in the Emissions Minimization requirements, shall not constitute a violation of this permit. However, leaking components discovered during inspections by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the deadlines specified in the Emissions Minimization requirements, shall constitute a violation. [District Rule 4623] Federally Enforceable Through Title V Permit
9. Upon detection of any leaks >10,000 ppmv, measured in accordance with EPA Method 21 by a portable hydrocarbon detection instrument that is calibrated with methane, the operator shall: a. Eliminate the leak within 8 hours after detection; or b. If the leak can not be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices; c. Eliminate the leak within 48 hours after minimization; and d. In no event that the total time to eliminate the leak shall exceed 56 hours after detection. [District Rule 4623] Federally Enforceable Through Title V Permit
10. If a component type for a given tank is found to leak above the 10,000 ppmv during an annual inspection, then quarterly inspections of that component type on the tank or system shall be conducted for four consecutive quarters. After four successful quarterly inspections in which the component type is found to leak less than 10,000 ppmv, inspections interval may revert to annual. [District Rule 4623] Federally Enforceable Through Title V Permit
11. Any tank gauging or sampling device on a tank vented to the vapor control system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623] Federally Enforceable Through Title V Permit
12. When diesel fuel is being stored, placed, or held in this tank, uncontrolled VOC emissions shall not exceed 9.0 lbs/day. [District Rule 2201] Federally Enforceable Through Title V Permit
13. When storing organic liquids other than diesel fuel, total controlled VOC emissions from fugitive components shall not exceed 2.4 lbs/day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Total fugitive emissions rate from valves, flanges, connectors, and "others" connecting this unit to the refinery vapor control system shall be periodically calculated as described below using the California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities (February 1999), Table IV-3a:CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals (as described in the following condition). [District Rule 2201] Federally Enforceable Through Title V Permit
15. Permit holder shall maintain accurate component count and resultant emissions according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-3a (Feb 1999), CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals. Permit holder shall update such records when new components are installed. Except for all piping, fittings, and valves directly affixed to the tank or associated with the tank vapor control system, components shall be screened and leak rate shall be measured at least once each quarter. If compliance with the daily emission limit is shown during each of five (5) consecutive quarterly inspections, the inspection frequency may be changed from quarterly to annual. If any annual inspection shows non-compliance with the daily emission limit, then quarterly inspections shall be resumed. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

16. All piping, fittings, and valves directly affixed to the tank or associated with the tank vapor control system 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 provisions of this permit. [District Rule 4623 and 40 CFR 60.112b(a)(3)(i)] Federally Enforceable Through Title V Permit
17. When storing diesel fuel, maximum daily throughput shall not exceed 30,000 bbls. [District Rule 2201] Federally Enforceable Through Title V Permit
18. When storing diesel fuel, the tank shall be in a leak-free condition. The pressure-vacuum (PV) relief valve shall be 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, 5.2] Federally Enforceable Through Title V Permit
19. {2774} 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, 6.3.1] Federally Enforceable Through Title V Permit
20. The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287-92 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 4057-95 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 4623, 6.4.2] Federally Enforceable Through Title V Permit
21. {2591} The operator of a fixed roof tank shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
22. Tank may be disconnected from vapor control system during maintenance and cleaning periods provided liquids and vapors subject to Rule 4623 are completely removed and vapor lines are isolated. [District Rule 4623] Federally Enforceable Through Title V Permit
23. Permittee shall receive written or faxed approval from the District Compliance division prior to tank vapor control system disconnection. [District Rule 4623] Federally Enforceable Through Title V Permit
24. Upon reconnection to vapor control system, permittee shall demonstrate using a portable hydrocarbon monitor that all tank pressure relief valves and other fugitive components associated with the tank are gas tight, as defined in Rule 4623. [District NSR Rule] Federally Enforceable Through Title V Permit
25. Permittee shall keep a record of each period of storage when tank vapor control system is not in operation and of the initial boiling point or true vapor pressure of each organic liquid stored in the tank during such periods. [District Rule 2201] Federally Enforceable Through Title V Permit
26. Collected vapors shall discharge only to refinery fuel gas or flare gas system. [District Rule 2201] Federally Enforceable Through Title V Permit
27. As part of its notification required by 40 CFR 60.7(a)(1) or 60.7(a)(2), the operator shall submit to the APCO for approval an operating plan as described in 40 CFR 60.113b(c) and shall operate the closed vent system and monitor the parameters of the system in accordance with the approved operating plan. The operator shall keep a record of the measured values of the parameters monitored in accordance with the approved operating plan. The operating plan shall be retained for the life of the control equipment. [40 CFR 60.113b(c), 60.115b(c)] Federally Enforceable Through Title V Permit
28. Operator shall determine the presence of VOC leaks by EPA Method 21. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21 using the following calibration gases; 1.) Zero air (less than 10 ppm of hydrocarbon in air); and 2.) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane. [40 CFR 60.112b(a)(3)(i)] Federally Enforceable Through Title V Permit
29. Operator shall maintain a record showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. [40 CFR 60.116b(b)] Federally Enforceable Through Title V Permit

30. Control efficiency shall be determined by a comparison of controlled emissions to those emissions which would occur from a fixed or cone roof tank in the same product service without a vapor control system. Emissions shall be determined based on tank emission factors in EPA Publication AP-42, component counts for fugitive emissions sources, recognized emission factors for fugitive emission sources, and the efficiency of any VOC destruction device. [District Rule 4623] Federally Enforceable Through Title V Permit
31. The efficiency of any VOC destruction device shall be measured by EPA Method 25, 25a, or 25b, and analysis of halogenated exempt compounds shall be analyzed by ARB Method 432. [District Rule 4623, 6.4] Federally Enforceable Through Title V Permit
32. The operator shall ensure that the vapor control system is functional and is operating as designed whenever emissions are being vented to it. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
33. Construction, reconstruction, or modification of this unit was commenced after July 23, 1984. Therefore, the requirements of 40 CFR 60 Subpart K and Ka do not apply to this source. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
34. As used in this permit, the term "source or type of petroleum" shall mean petroleum liquids with similar characteristics. The operator shall maintain records of API gravity of petroleum liquids stored in this unit to determine which oils are from a common source. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
35. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 601 lb, 2nd quarter - 601 lb, 3rd quarter - 601 lb, and fourth quarter - 601 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). [District Rule 2201] Federally Enforceable Through Title V Permit
36. ERC Certificate Number S-2452-1 (or a certificate split from this certificate) 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

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

DRAFT

PERMIT NO: S-33-419-0

LEGAL OWNER OR OPERATOR: BIG WEST OF CA, LLC
MAILING ADDRESS: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

LOCATION: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

EQUIPMENT DESCRIPTION:
525 BHP CLARK MODEL JX6H-UF60 EMERGENCY DIESEL TIER 2 IC ENGINE (OR DISTRICT APPROVED EQUIVALENT) POWERING A FIREWATER PUMP

CONDITIONS

1. 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. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit
5. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201]
6. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No increases in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 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

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DAVID WARNER, Director of Permit Services
S-33-419-0, Aug 25 2008 1:03PM -- LEONARDS : Joint Inspection Required with LEONARDS

7. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] Federally Enforceable Through Title V Permit
8. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
9. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
10. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702] Federally Enforceable Through Title V Permit
11. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102] Federally Enforceable Through Title V Permit
12. Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801 and 17 CCR 93115] Federally Enforceable Through Title V Permit
13. This engine shall be operated only for maintenance, testing, required regulatory purposes, and during emergency situations. For testing purposes, the engine shall only be operated the number of hours necessary to comply with the testing requirements of the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems", 1998 edition. Total hours of operation for all maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rule 4702 and 17 CCR 93115] Federally Enforceable Through Title V Permit
14. Emissions from this IC engine shall not exceed any of the following limits: 4.67 g-NOx/bhp-hr, 2.6 g-CO/bhp-hr, or 0.13 g-VOC/bhp-hr. [District Rule 2201 and 13 CCR 2423 and 17 CCR 93115] Federally Enforceable Through Title V Permit
15. Emissions from this IC engine shall not exceed 0.149 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 13 CCR 2423 and 17 CCR 93115] Federally Enforceable Through Title V Permit
16. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115] Federally Enforceable Through Title V Permit
17. The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, and the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.). For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-33-420-0

LEGAL OWNER OR OPERATOR: BIG WEST OF CA, LLC
MAILING ADDRESS: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

LOCATION: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

EQUIPMENT DESCRIPTION:
525 BHP CLARK MODEL JX6H-UF60 EMERGENCY DIESEL TIER 2 IC ENGINE (OR DISTRICT APPROVED EQUIVALENT) POWERING A FIREWATER PUMP

CONDITIONS

1. 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. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit
5. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201]
6. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No increases in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 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-33-420-0 - Aug 25 2008 1:03PM - LEONARDS - Joint Inspection Required with LEONARDS

7. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] Federally Enforceable Through Title V Permit
8. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
9. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
10. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702] Federally Enforceable Through Title V Permit
11. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102] Federally Enforceable Through Title V Permit
12. Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801 and 17 CCR 93115] Federally Enforceable Through Title V Permit
13. This engine shall be operated only for maintenance, testing, required regulatory purposes, and during emergency situations. For testing purposes, the engine shall only be operated the number of hours necessary to comply with the testing requirements of the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems", 1998 edition. Total hours of operation for all maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rule 4702 and 17 CCR 93115] Federally Enforceable Through Title V Permit
14. Emissions from this IC engine shall not exceed any of the following limits: 4.67 g-NOx/bhp-hr, 2.6 g-CO/bhp-hr, or 0.13 g-VOC/bhp-hr. [District Rule 2201 and 13 CCR 2423 and 17 CCR 93115] Federally Enforceable Through Title V Permit
15. Emissions from this IC engine shall not exceed 0.149 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 13 CCR 2423 and 17 CCR 93115] Federally Enforceable Through Title V Permit
16. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115] Federally Enforceable Through Title V Permit
17. The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, and the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.). For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-33-423-0

LEGAL OWNER OR OPERATOR: BIG WEST OF CA, LLC
MAILING ADDRESS: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

LOCATION: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

EQUIPMENT DESCRIPTION:
80,000 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK CONNECTED TO REFINERY VAPOR CONTROL SYSTEM EXCEPT WHEN STORING DIESEL FUEL (TANK # 80009)

CONDITIONS

1. 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. The tank shall be equipped with a vapor control system consisting of vapor and condensate collection systems capable of reducing VOC emissions by at least 99%, except for those periods described below when operation of the vapor control system is not required. [District Rules 2201, 4623, 5.6.1 and 40 CFR 60.112a(a)(3)] Federally Enforceable Through Title V Permit
4. Except when storing or processing diesel motor fuel, or preparing the tank for product change between diesel fuel and any other organic liquids, the tank shall always be connected to the vapor control system. [District Rule 2201] Federally Enforceable Through Title V Permit
5. All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 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-33-423-0 - Aug 25 2008 1:03PM - LEONARDS - Joint Inspection Required with LEONARDS

6. A leak-free 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 and shall be reported as a deviation, except as provided below. [District Rule 4623] Federally Enforceable Through Title V Permit
7. If any of the tank components are found to be leaking (>500 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21), the facility operator shall affix to that component a weatherproof readily visible tag bearing the date on which the leak is detected. The tag shall remain in place until the leaking component is repaired, reinspected, and found to be in compliance with the requirements of Rule 4623. The operator shall maintain records of gas leak detection readings, date/time leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 4623 and 40 CFR 60.112b(a)(3)(i)] Federally Enforceable Through Title V Permit
8. Leaks measuring > 500 ppmv and < 10,000 ppmv, or leaks measuring > 10,000 ppmv from components within five feet of the tank that have been discovered by the operator and have been immediately tagged and repaired within the deadlines specified in the Emissions Minimization requirements, shall not constitute a violation of this permit. However, leaking components discovered during inspections by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the deadlines specified in the Emissions Minimization requirements, shall constitute a violation. [District Rule 4623] Federally Enforceable Through Title V Permit
9. Upon detection of any leaks >10,000 ppmv, measured in accordance with EPA Method 21 by a portable hydrocarbon detection instrument that is calibrated with methane, the operator shall: a. Eliminate the leak within 8 hours after detection; or b. If the leak can not be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices; c. Eliminate the leak within 48 hours after minimization; and d. In no event that the total time to eliminate the leak shall exceed 56 hours after detection. [District Rule 4623] Federally Enforceable Through Title V Permit
10. If a component type for a given tank is found to leak above the 10,000 ppmv during an annual inspection, then quarterly inspections of that component type on the tank or system shall be conducted for four consecutive quarters. After four successful quarterly inspections in which the component type is found to leak less than 10,000 ppmv, inspections interval may revert to annual. [District Rule 4623] Federally Enforceable Through Title V Permit
11. Any tank gauging or sampling device on a tank vented to the vapor control system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623] Federally Enforceable Through Title V Permit
12. When diesel fuel is being stored, placed, or held in this tank, uncontrolled VOC emissions shall not exceed 23.8 lbs/day. [District Rule 2201] Federally Enforceable Through Title V Permit
13. When storing organic liquids other than diesel fuel, total controlled VOC emissions from fugitive components shall not exceed 1.3 lbs/day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Total fugitive emissions rate from valves, flanges, connectors, and "others" connecting this unit to the refinery vapor control system shall be periodically calculated as described below using the California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities (February 1999), Table IV-3a:CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals (as described in the following condition). [District Rule 2201] Federally Enforceable Through Title V Permit
15. Permit holder shall maintain accurate component count and resultant emissions according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-3a (Feb 1999), CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals. Permit holder shall update such records when new components are installed. Except for all piping, fittings, and valves directly affixed to the tank or associated with the tank vapor control system, components shall be screened and leak rate shall be measured at least once each quarter. If compliance with the daily emission limit is shown during each of five (5) consecutive quarterly inspections, the inspection frequency may be changed from quarterly to annual. If any annual inspection shows non-compliance with the daily emission limit, then quarterly inspections shall be resumed. [District Rule 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

16. All piping, fittings, and valves directly affixed to the tank or associated with the tank vapor control system 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 provisions of this permit. [District Rule 4623 and 40 CFR 60.112b(a)(3)(i)] Federally Enforceable Through Title V Permit
17. When storing diesel fuel, maximum daily throughput shall not exceed 30,000 bbls. [District Rule 2201] Federally Enforceable Through Title V Permit
18. When storing diesel fuel, the tank shall be in a leak-free condition. The pressure-vacuum (PV) relief valve shall be 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, 5.2] Federally Enforceable Through Title V Permit
19. {2774} 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, 6.3.1] Federally Enforceable Through Title V Permit
20. The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287-92 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 4057-95 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 4623, 6.4.2] Federally Enforceable Through Title V Permit
21. {2591} The operator of a fixed roof tank shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
22. Tank may be disconnected from vapor control system during maintenance and cleaning periods provided liquids and vapors subject to Rule 4623 are completely removed and vapor lines are isolated. [District Rule 4623] Federally Enforceable Through Title V Permit
23. Permittee shall receive written or faxed approval from the District Compliance division prior to tank vapor control system disconnection. [District Rule 4623] Federally Enforceable Through Title V Permit
24. Upon reconnection to vapor control system, permittee shall demonstrate using a portable hydrocarbon monitor that all tank pressure relief valves and other fugitive components associated with the tank are gas tight, as defined in Rule 4623. [District NSR Rule] Federally Enforceable Through Title V Permit
25. Permittee shall keep a record of each period of storage when tank vapor control system is not in operation and of the initial boiling point or true vapor pressure of each organic liquid stored in the tank during such periods. [District Rule 2201] Federally Enforceable Through Title V Permit
26. Collected vapors shall discharge only to refinery fuel gas or flare gas system. [District Rule 2201] Federally Enforceable Through Title V Permit
27. As part of its notification required by 40 CFR 60.7(a)(1) or 60.7(a)(2), the operator shall submit to the APCO for approval an operating plan as described in 40 CFR 60.113b(c) and shall operate the closed vent system and monitor the parameters of the system in accordance with the approved operating plan. The operator shall keep a record of the measured values of the parameters monitored in accordance with the approved operating plan. The operating plan shall be retained for the life of the control equipment. [40 CFR 60.113b(c), 60.115b(c)] Federally Enforceable Through Title V Permit
28. Operator shall determine the presence of VOC leaks by EPA Method 21. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21 using the following calibration gases; 1.) Zero air (less than 10 ppm of hydrocarbon in air); and 2.) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane. [40 CFR 60.112b(a)(3)(i)] Federally Enforceable Through Title V Permit
29. Operator shall maintain a record showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. [40 CFR 60.116b(b)] Federally Enforceable Through Title V Permit

30. Control efficiency shall be determined by a comparison of controlled emissions to those emissions which would occur from a fixed or cone roof tank in the same product service without a vapor control system. Emissions shall be determined based on tank emission factors in EPA Publication AP-42, component counts for fugitive emissions sources, recognized emission factors for fugitive emission sources, and the efficiency of any VOC destruction device. [District Rule 4623] Federally Enforceable Through Title V Permit
31. The efficiency of any VOC destruction device shall be measured by EPA Method 25, 25a, or 25b, and analysis of halogenated exempt compounds shall be analyzed by ARB Method 432. [District Rule 4623, 6.4] Federally Enforceable Through Title V Permit
32. The operator shall ensure that the vapor control system is functional and is operating as designed whenever emissions are being vented to it. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
33. Construction, reconstruction, or modification of this unit was commenced after July 23, 1984. Therefore, the requirements of 40 CFR 60 Subpart K and Ka do not apply to this source. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
34. As used in this permit, the term "source or type of petroleum" shall mean petroleum liquids with similar characteristics. The operator shall maintain records of API gravity of petroleum liquids stored in this unit to determine which oils are from a common source. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
35. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 2,170 lb, 2nd quarter - 2,170 lb, 3rd quarter - 2,170 lb, and fourth quarter - 2,170 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). [District Rule 2201] Federally Enforceable Through Title V Permit
36. ERC Certificate Number S-2452-1 (or a certificate split from this certificate) 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
37. Upon implementation of this Authority to Construct document, Authority to Construct S-33-424-0 shall be canceled. [District Rule 2201]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-33-424-0

LEGAL OWNER OR OPERATOR: BIG WEST OF CA, LLC
MAILING ADDRESS: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

LOCATION: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

EQUIPMENT DESCRIPTION:
80,000 BBL EXTERNAL FLOATING ROOF ORGANIC LIQUID STORAGE TANK (TANK # 80009)

CONDITIONS

1. 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. Permittee shall comply with all 40 CFR Part 60 Subpart A notification, reporting, and recordkeeping requirements. [40 CFR 60, paragraph 60.7] Federally Enforceable Through Title V Permit
4. True vapor pressure of organic liquid stored shall not exceed 11.0 psia. [District NSR Rule, Rule 4623, 40 CFR Part 60: Subpart Kb] Federally Enforceable Through Title V Permit
5. Maximum daily throughput shall not exceed 80,000 bbls. [District Rule 2201] Federally Enforceable Through Title V Permit
6. VOC emissions from this unit shall not exceed 52.5 lbs/day. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Total fugitive emissions rate from valves, flanges, connectors, and "others" from components in this permit unit shall be calculated using the California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities (February 1999), Table IV-3a:CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals (as described in the following conditions). [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director, APCO

DAVID WARNER, Director of Permit Services
S-33-424-0 - Aug 25 2008 1:03PM - LEONARDS : Joint Inspection Required with LEONARDS

8. Seal designs shall be submitted to the APCO and shall not be installed or used unless they are approved by the APCO as meeting the criteria set forth in Sections 5.3.2.1 through 5.3.2.3 as applicable. Seal designs other than set forth in Sections 5.3.2.1 through 5.3.2.3 may be approved provided that a notice allowing the use of such design has been published in the Federal Register pursuant to CFR 40 Part 60: Subpart Kb paragraph 60.114b. [District Rule 4623] Federally Enforceable Through Title V Permit
9. This tank shall be equipped with a closure device between the tank shell and roof edge consisting of two seals mounted one above the other; the one below shall be referred to as the primary seal, and the one above shall be referred as the secondary seal. [District Rule 4623] Federally Enforceable Through Title V Permit
10. The external floating roof shall float on the surface of the stored liquid at all times (i.e., off the roof leg supports) except during the initial fill until the roof is lifted off the leg supports and when the tank is completely emptied and subsequently refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible. Whenever the permittee intends to land the roof on its legs, the permittee shall notify the APCO in writing at least five calendar days prior to performing the work. The tank must be in compliance with this rule before it may land on its legs. [District Rule 4623, 40 CFR Subpart Kb paragraph 60.112b] Federally Enforceable Through Title V Permit
11. Gaps between the tank shell and the primary seal shall not exceed 1 1/2 inches. [District Rule 4623] Federally Enforceable Through Title V Permit
12. The cumulative length of all gaps between the tank shell and the primary seal greater than 1/2 inch shall not exceed 10% of the circumference of the tank. [District Rule 4623] Federally Enforceable Through Title V Permit
13. The cumulative length of all primary seal gaps greater than 1/8 inch shall not exceed 30% of the circumference of the tank. [District Rule 4623] Federally Enforceable Through Title V Permit
14. No continuous gap in the primary seal greater than 1/8 inch wide shall exceed 10% of the tank circumference. [District Rule 4623] Federally Enforceable Through Title V Permit
15. No gap between the tank shell and the secondary seal shall exceed 1/2 inch. [District Rule 4623] Federally Enforceable Through Title V Permit
16. The cumulative length of all gaps between the tank shell and the secondary seal, greater than 1/8 inch shall not exceed 5% of the tank circumference. [District Rule 4623] Federally Enforceable Through Title V Permit
17. The metallic shoe-type seal shall be installed so that one end of the shoe extends into the stored liquid and the other end extends a minimum vertical distance of 24 inches above the stored liquid surface. [District Rule 4623] Federally Enforceable Through Title V Permit
18. The geometry of the metallic-shoe type seal shall be such that the maximum gap between the shoe and the tank shell shall be no greater than 3 inches for a length of at least 18 inches in the vertical plane above the liquid. [District Rule 4623] Federally Enforceable Through Title V Permit
19. There shall be no holes, tears, or openings in the secondary seal or in the primary seal envelope that surrounds the annular vapor space enclosed by the roof edge, seal fabric, and secondary seal. [District Rule 4623] Federally Enforceable Through Title V Permit
20. The secondary seal shall allow easy insertion of probes of up to 1 1/2 inches in width in order to measure gaps in the primary seal. [District Rule 4623] Federally Enforceable Through Title V Permit
21. The secondary seal shall extend from the roof to the tank shell and shall not be attached to the primary seal. [District Rule 4623] Federally Enforceable Through Title V Permit
22. All openings in the roof used for sampling and gauging, except pressure-vacuum valves which shall be set to within 10% of the maximum allowable working pressure of the roof, shall provide a projection below the liquid surface to prevent belching of liquid and to prevent entrained or formed organic vapor from escaping from the liquid contents of the tank and shall be equipped with a cover, seal or lid that shall be in a closed position at all times, with no visible gaps and be leak-free, except when the device or appurtenance is in use. [District Rule 4623] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

23. A leak-free condition is defined as a condition without a gas leak or a liquid 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 and shall be reported as a deviation, except as provided below. A liquid leak is defined as the dripping of organic liquid at a rate of more than 3 drops per minute. [District Rule 4623] Federally Enforceable Through Title V Permit
24. Emissions from roof opening covers, seals, or lids which have been tagged by the facility operator for repair within 15 calendar days or which have been repaired and are awaiting reinspection shall not be in violation of this permit. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
25. Any leak in a roof opening cover, seal, or lid shall be repaired to a leak-free condition within fifteen (15) calendar days of detection. The APCO may grant a ten (10) calendar day extension provided the operator demonstrates that necessary and sufficient actions are being taken to correct the leak within this time period. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
26. If the leaking component is an essential part of a critical process unit which cannot be immediately shut down for repairs, the operator shall 1) Minimize the leak within 15 calendar days; and 2) If the leak which has been minimized still exceeds the concentration allowed by this permit, the essential component shall be repaired to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection. A critical process unit is any process unit which would result in the automatic shutdown of other process units if it were shut down. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
27. Except for automatic bleeder vents, rim vents, and pressure relief vents, each opening in a non-contact external floating roof shall provide a projection below the liquid surface. [District Rule 4623] Federally Enforceable Through Title V Permit
28. Except for automatic bleeder vents and rim vents, roof drains, and leg sleeves, each opening in the roof shall be equipped with a gasketed cover, seal, or lid that shall be maintained in a closed position at all times (i.e., no visible gap) except when in actual use. [District Rule 4623] Federally Enforceable Through Title V Permit
29. Automatic bleeder vents shall be equipped with a gasket and shall be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. [District Rule 4623] Federally Enforceable Through Title V Permit
30. Rim vents shall be equipped with a gasket and shall be set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting. [District Rule 4623] Federally Enforceable Through Title V Permit
31. Each emergency roof drain shall be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening. The fabric cover must be impermeable if the liquid is drained into the contents of the tanks. [District Rule 4623] Federally Enforceable Through Title V Permit
32. External floating roof legs shall be equipped with vapor socks or vapor barriers in order to maintain a leak-free condition so as to prevent VOC emissions from escaping through the roof leg opening. [District Rule 4623] Federally Enforceable Through Title V Permit
33. The solid guidepole well shall be equipped with a pole wiper and a gasketed cover, seal or lid which shall be in a closed position at all times (i.e., no visible gap) except when the well is in use. [District Rule 4623] Federally Enforceable Through Title V Permit
34. The gap between the pole wiper and the solid guidepole shall be added to the gaps measured to determine compliance with the secondary seal requirement, and in no case shall exceed 1/2 inch. [District Rule 4623] Federally Enforceable Through Title V Permit
35. The slotted guidepole well on a external floating roof shall be equipped with the following: a sliding cover, a well gasket, a pole sleeve, a pole wiper, and an internal float and float wiper designed to minimize the gap between the float and the well, and provided the gap shall not exceed 1/8 inch; or shall be equipped with a well gasket, a zero gap pole wiper seal and a pole sleeve that projects below the liquid surface. [District Rule 4623] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

36. The gap between the pole wiper and the slotted guidepole shall be added to the gaps measured to determine compliance with the secondary seal requirement, and in no case shall exceed 1/8 inch. [District Rule 4623] Federally Enforceable Through Title V Permit
37. The permittee of external floating roof tanks shall make the primary seal envelope available for unobstructed inspection by the APCO on an annual basis at locations selected along its circumference at random by the APCO. In the case of riveted tanks with toroid-type seals, a minimum of eight locations shall be made available; in all other cases, a minimum of four locations shall be made available. If the APCO suspects a violation may exist the APCO may require such further unobstructed inspection of the primary seal as may be necessary to determine the seal condition for its entire circumference. [District Rule 4623] Federally Enforceable Through Title V Permit
38. The permittee shall inspect all floating tanks at least once every 12 months to determine compliance with the requirements of this rule. The actual gap measurements of the floating roof primary and secondary seals shall be recorded. The inspection results shall be submitted to the APCO as specified in Section 6.3.5. [District Rule 4623] Federally Enforceable Through Title V Permit
39. The permittee shall inspect the primary and secondary seals for compliance with the requirements of this rule every time a tank is emptied or degassed. Actual gap measurements shall be performed when the liquid level is static but not more than 24 hours after the tank roof is re-floated. [District Rule 4623] Federally Enforceable Through Title V Permit
40. Permittee shall submit the reports of the floating roof tank inspections to the APCO within five calendar days after the completion of the inspection only for those tanks that failed to meet the applicable requirements of Rule 4623, Sections 5.2 through 5.5. The inspection report for tanks that that have been determined to be in compliance with the requirements of Sections 5.2 through 5.5 need not be submitted to the APCO, but the inspection report shall be kept on-site and made available upon request by the APCO. The inspection report shall contain all necessary information to demonstrate compliance with the provisions of Rule 4623. [District Rule 4623] Federally Enforceable Through Title V Permit
41. Any roof drain shall be provided with a slotted membrane fabric cover, or equivalent, that covers at least 90% of the area of the opening. [District Rule 4623, 5.1.6] Federally Enforceable Through Title V Permit
42. The sliding cover shall be in place over the slotted-guidepole opening through the floating roof at all times except when the sliding cover must be removed for access. The guidepole float shall be floating within the guidepole at all times except when it must be removed for access to the stored liquid or when the tank is empty. [District Rule 4623] Federally Enforceable Through Title V Permit
43. The permittee shall visually inspect the deck fitting for the slotted guidepole at least once every 10 years and each time the vessel is emptied and degassed. If the slotted guidepole deck fitting or control devices have defects, or if a gap of more than 0.32 centimeters (1/8 inch) exists between any gasket required for control of the slotted guidepole deck fitting and any surface that it is intended to seal, such items shall be repaired before filling or refilling the storage vessel with regulated material. [District Rule 4623] Federally Enforceable Through Title V Permit
44. Operator shall keep a record of type of liquids stored in each container, period of storage, storage temperature, and both the Reid and maximum true vapor pressure of such liquids. [District Rule 4623] Federally Enforceable Through Title V Permit
45. The tank shall be equipped with a cover consisting of either a pontoon-type or double-deck-type cover which rests upon the surface of the liquid being stored and is equipped with a closure device between the tank shell and roof edge consisting of a primary and a secondary seal. [District Rule 4623] Federally Enforceable Through Title V Permit
46. Accumulated area of gaps between tank wall and primary seal shall not exceed: 1) 10.0 sq inch per foot of tank diameter and the width of any portion of any gap shall not exceed one and one-half (1-1/2) inch, for a metallic shoe seal or a liquid-mounted seal; 2) 1.0 sq inch per foot of tank diameter and the width of any portion of any gap shall not exceed one-half (1/2) inch for a vapor mounted seal [40 CFR 60.113b] Federally Enforceable Through Title V Permit
47. If the secondary seal is used in combination with a metallic shoe or liquid-mounted primary seal, accumulated area of gaps between tank wall and the secondary seal shall not exceed 1.0 sq inch per foot of tank diameter and the width of any portion of any gap shall not exceed one-half (1/2) inch. [40 CFR 60.113b(b)(4)(ii)(B)] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

48. All roof opening covers, seals and lids covering openings in the roof used for sampling and gauging, except pressure-vacuum valves set to within 10 percent of the maximum allowable working pressure of the roof, shall be inspected annually by the facility operator to ensure compliance with the provisions of this permit. However, if one or more of the components are found to leak during an annual inspection, the inspection frequency for that component type shall be changed from annual to quarterly. If none of the components of that type are subsequently found to be leaking during five consecutive inspections, the inspection frequency may be changed from quarterly to annual. Components located in inaccessible (over 15 feet above ground when access is required from the ground or over 6 feet away from a platform when access is required from the platform) locations shall be inspected at least annually and components located in unsafe areas shall be inspected and repaired at the next process unit turnaround (the scheduled shutdown of a unit for maintenance and repair work). [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
49. A facility operator, upon detection of a leaking cover, seal, or lid, shall affix to that component a weatherproof readily visible tag bearing the date on which the leak is detected. The tag shall remain in place until the leaking component is repaired, reinspected and found to be in compliance with the requirements of this rule. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
50. An operator shall reinspect a cover, seal, or lid for leaks within thirty working days after the date on which the component is repaired. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
51. Operator shall maintain an inspection log containing the following: 1) Type of component leaking; 2) Date of leak detection, and method of detection; 3) Date and emission level of recheck after leak is repaired; 4) Identification and location of essential parts of critical process units found leaking that cannot be repaired until the next process unit turnaround; and 5) Method used to minimize the leak from essential parts of critical process units which cannot be repaired until the next process unit turnaround. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
52. Operator shall perform gap measurements on primary seals within 60 days of the initial fill and at least once every 5 years thereafter. Operator shall perform gap measurements on secondary seals within 60 days of the initial fill with petroleum liquid and at least once every year thereafter. If unit is out of service for a period of one year or more, subsequent refilling with petroleum liquid shall be considered initial fill. [40 CFR 60.113b(b)(1)(i), (ii), and (iii)] Federally Enforceable Through Title V Permit
53. Operator shall determine gap widths in the primary and secondary seals using the following procedure: 1) Measure seal gaps, at one or more floating roof levels when the roof is floating off leg supports; 2) Measure seal gaps around entire circumference of the tank in each place where a one-eighth (1/8) inch diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the tank wall and measure the circumferential distance of each such location; 3), Total surface area of each gap shall be determined by using probes of various widths to accurately measure the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance; 4) Add the gap surface area of each gap location for the primary seal and the secondary seal individually. Divide the sum for each seal by the nominal diameter of the tank. [40 CFR 60.113b] Federally Enforceable Through Title V Permit
54. Operator shall record the vessel on which the measurement was performed, date of the seal gap measurement, and raw data obtained in the measurement process in accordance with the conditions of this permit. [40 CFR 60.115b] Federally Enforceable Through Title V Permit
55. Operator shall provide the APCO with 30 days notice of the gap measurement to afford the District the opportunity to have an observer present. [40 CFR 60.115b] Federally Enforceable Through Title V Permit
56. If the accumulated area of gaps or gap width exceed limits, operator shall submit a report to the APCO within 60 days of the date of measurement. Report should include identification of the vessel, reason vessel did not meet the specifications, and a description of the actions necessary to bring the storage vessel into compliance. [40 CFR 60.115.b] Federally Enforceable Through Title V Permit
57. Maximum true vapor pressure 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 60.115a(b)] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

58. True vapor pressure shall be measured using Reid vapor pressure ASTM Method D323-82 modified by maintaining the hot water bath at storage temperature. Where storage temperature is above 100 °F true vapor pressure shall be determined by Reid vapor pressure at 100 °F and ARB approved calculations. [District Rule 4623, 6.2.2 and District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
59. True vapor pressure of crude oil with an API (American Petroleum Institute) gravity less than 30°, as determined by API 2547, may be determined by Headspace Gas Chromatography using the procedures from ARB Evaluation of a Method for Determining Vapor Pressures of Petroleum Mixtures by Headspace Gas Chromatography, October 1990. [District Rule 4623, 6.2.3 and District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
60. Operator shall determine the true vapor pressure of the petroleum liquid stored in the tank at least once per year in accordance with methods described in section 6.2 of District Rule 4623 (amended 12/17/1992). Determinations shall be made annually during summer and whenever there is a change in the source or type of petroleum entering the tank. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
61. Construction, reconstruction, or modification of this unit was commenced after May 18, 1978 and prior to July 23, 1984. Therefore, the requirements of 40 CFR 60 Subpart K and Ka do not apply to this source. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
62. As used in this permit, the term "source or type of petroleum" shall mean petroleum liquids with similar characteristics. The operator shall maintain records of API gravity of petroleum liquids store in this unit to determine which oil are from common source. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
63. Permittee shall maintain the records of the external floating roof landing activities that are performed pursuant to Rule 4623, Sections 5.3.1.3 and 5.4.3. The records shall include information on the true vapor pressure (TVP), API gravity, storage temperature, type of organic liquid stored in the tank, the purpose of landing the roof on its legs, the date of roof landing, duration the roof was on its legs, the level or height at which the tank roof was set to land on its legs, and the lowest liquid level in the tank. [District Rule 4623] Federally Enforceable Through Title V Permit
64. 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
65. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 3,427 lb, 2nd quarter - 3,427 lb, 3rd quarter - 3,428 lb, and fourth quarter - 3,428 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). [District Rule 2201] Federally Enforceable Through Title V Permit
66. ERC Certificate Number S-2452-1 (or a certificate split from this certificate) 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
67. Upon implementation of this Authority to Construct document, Authority to Construct S-33-423-0 shall be canceled. [District Rule 2201] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-33-425-0

LEGAL OWNER OR OPERATOR: BIG WEST OF CA, LLC
MAILING ADDRESS: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

LOCATION: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

EQUIPMENT DESCRIPTION:
20,000 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK CONNECTED TO REFINERY VAPOR CONTROL SYSTEM EXCEPT WHEN STORING DIESEL FUEL (TANK # 20M01)

CONDITIONS

1. 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. The tank shall be equipped with a vapor control system consisting of vapor and condensate collection systems capable of reducing VOC emissions by at least 99%, except for those periods described below when operation of the vapor control system is not required. [District Rules 2201, 4623, 5.6.1 and 40 CFR 60.112a(a)(3)] Federally Enforceable Through Title V Permit
4. Except when storing or processing diesel motor fuel, or preparing the tank for product change between diesel fuel and any other organic liquids, the tank shall always be connected to the vapor control system. [District Rule 2201] Federally Enforceable Through Title V Permit
5. All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 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-33-425-0 - Aug 25 2008 1:03PM - LEONARDS : Joint Inspection Required with LEONARDS

6. A leak-free 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 and shall be reported as a deviation, except as provided below. [District Rule 4623] Federally Enforceable Through Title V Permit
7. If any of the tank components are found to be leaking (>500 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21), the facility operator shall affix to that component a weatherproof readily visible tag bearing the date on which the leak is detected. The tag shall remain in place until the leaking component is repaired, reinspected, and found to be in compliance with the requirements of Rule 4623. The operator shall maintain records of gas leak detection readings, date/time leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 4623 and 40 CFR 60.112b(a)(3)(i)] Federally Enforceable Through Title V Permit
8. Leaks measuring > 500 ppmv and < 10,000 ppmv, or leaks measuring > 10,000 ppmv from components within five feet of the tank that have been discovered by the operator and have been immediately tagged and repaired within the deadlines specified in the Emissions Minimization requirements, shall not constitute a violation of this permit. However, leaking components discovered during inspections by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the deadlines specified in the Emissions Minimization requirements, shall constitute a violation. [District Rule 4623] Federally Enforceable Through Title V Permit
9. Upon detection of any leaks >10,000 ppmv, measured in accordance with EPA Method 21 by a portable hydrocarbon detection instrument that is calibrated with methane, the operator shall: a. Eliminate the leak within 8 hours after detection; or b. If the leak can not be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices; c. Eliminate the leak within 48 hours after minimization; and d. In no event that the total time to eliminate the leak shall exceed 56 hours after detection. [District Rule 4623] Federally Enforceable Through Title V Permit
10. If a component type for a given tank is found to leak above the 10,000 ppmv during an annual inspection, then quarterly inspections of that component type on the tank or system shall be conducted for four consecutive quarters. After four successful quarterly inspections in which the component type is found to leak less than 10,000 ppmv, inspections interval may revert to annual. [District Rule 4623] Federally Enforceable Through Title V Permit
11. Any tank gauging or sampling device on a tank vented to the vapor control system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623] Federally Enforceable Through Title V Permit
12. When diesel fuel is being stored, placed, or held in this tank, uncontrolled VOC emissions shall not exceed 5.9 lbs/day. [District Rule 2201] Federally Enforceable Through Title V Permit
13. When storing organic liquids other than diesel fuel, total controlled VOC emissions from fugitive components shall not exceed 2.4 lbs/day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Total fugitive emissions rate from valves, flanges, connectors, and "others" connecting this unit to the refinery vapor control system shall be periodically calculated as described below using the California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities (February 1999), Table IV-3a:CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals (as described in the following condition). [District Rule 2201] Federally Enforceable Through Title V Permit
15. Permit holder shall maintain accurate component count and resultant emissions according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-3a (Feb 1999), CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals. Permit holder shall update such records when new components are installed. Except for all piping, fittings, and valves directly affixed to the tank or associated with the tank vapor control system, components shall be screened and leak rate shall be measured at least once each quarter. If compliance with the daily emission limit is shown during each of five (5) consecutive quarterly inspections, the inspection frequency may be changed from quarterly to annual. If any annual inspection shows non-compliance with the daily emission limit, then quarterly inspections shall be resumed. [District Rule 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

16. All piping, fittings, and valves directly affixed to the tank or associated with the tank vapor control system 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 provisions of this permit. [District Rule 4623 and 40 CFR 60.112b(a)(3)(i)] Federally Enforceable Through Title V Permit
17. When storing diesel fuel, maximum daily throughput shall not exceed 20,000 bbls. [District Rule 2201] Federally Enforceable Through Title V Permit
18. When storing diesel fuel, the tank shall be in a leak-free condition. The pressure-vacuum (PV) relief valve shall be 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, 5.2] Federally Enforceable Through Title V Permit
19. {2774} 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, 6.3.1] Federally Enforceable Through Title V Permit
20. The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287-92 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 4057-95 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 4623, 6.4.2] Federally Enforceable Through Title V Permit
21. {2591} The operator of a fixed roof tank shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
22. Tank may be disconnected from vapor control system during maintenance and cleaning periods provided liquids and vapors subject to Rule 4623 are completely removed and vapor lines are isolated. [District Rule 4623] Federally Enforceable Through Title V Permit
23. Permittee shall receive written or faxed approval from the District Compliance division prior to tank vapor control system disconnection. [District Rule 4623] Federally Enforceable Through Title V Permit
24. Upon reconnection to vapor control system, permittee shall demonstrate using a portable hydrocarbon monitor that all tank pressure relief valves and other fugitive components associated with the tank are gas tight, as defined in Rule 4623. [District NSR Rule] Federally Enforceable Through Title V Permit
25. Permittee shall keep a record of each period of storage when tank vapor control system is not in operation and of the initial boiling point or true vapor pressure of each organic liquid stored in the tank during such periods. [District Rule 2201] Federally Enforceable Through Title V Permit
26. Collected vapors shall discharge only to refinery fuel gas or flare gas system. [District Rule 2201] Federally Enforceable Through Title V Permit
27. As part of its notification required by 40 CFR 60.7(a)(1) or 60.7(a)(2), the operator shall submit to the APCO for approval an operating plan as described in 40 CFR 60.113b(c) and shall operate the closed vent system and monitor the parameters of the system in accordance with the approved operating plan. The operator shall keep a record of the measured values of the parameters monitored in accordance with the approved operating plan. The operating plan shall be retained for the life of the control equipment. [40 CFR 60.113b(c), 60.115b(c)] Federally Enforceable Through Title V Permit
28. Operator shall determine the presence of VOC leaks by EPA Method 21. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21 using the following calibration gases; 1.) Zero air (less than 10 ppm of hydrocarbon in air); and 2.) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane. [40 CFR 60.112b(a)(3)(i)] Federally Enforceable Through Title V Permit
29. Operator shall maintain a record showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. [40 CFR 60.116b(b)] Federally Enforceable Through Title V Permit

30. Control efficiency shall be determined by a comparison of controlled emissions to those emissions which would occur from a fixed or cone roof tank in the same product service without a vapor control system. Emissions shall be determined based on tank emission factors in EPA Publication AP-42, component counts for fugitive emissions sources, recognized emission factors for fugitive emission sources, and the efficiency of any VOC destruction device. [District Rule 4623] Federally Enforceable Through Title V Permit
31. The efficiency of any VOC destruction device shall be measured by EPA Method 25, 25a, or 25b, and analysis of halogenated exempt compounds shall be analyzed by ARB Method 432. [District Rule 4623, 6.4] Federally Enforceable Through Title V Permit
32. The operator shall ensure that the vapor control system is functional and is operating as designed whenever emissions are being vented to it. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
33. Construction, reconstruction, or modification of this unit was commenced after July 23, 1984. Therefore, the requirements of 40 CFR 60 Subpart K and Ka do not apply to this source. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
34. As used in this permit, the term "source or type of petroleum" shall mean petroleum liquids with similar characteristics. The operator shall maintain records of API gravity of petroleum liquids stored in this unit to determine which oils are from a common source. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
35. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 541 lb, 2nd quarter - 541 lb, 3rd quarter - 542 lb, and fourth quarter - 542 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). [District Rule 2201] Federally Enforceable Through Title V Permit
36. ERC Certificate Number S-2452-1 (or a certificate split from this certificate) 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

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-33-426-0

LEGAL OWNER OR OPERATOR: BIG WEST OF CA, LLC
MAILING ADDRESS: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

LOCATION: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

EQUIPMENT DESCRIPTION:
20,000 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK CONNECTED TO REFINERY VAPOR CONTROL SYSTEM EXCEPT WHEN STORING DIESEL FUEL (TANK # 20M02)

CONDITIONS

1. 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. The tank shall be equipped with a vapor control system consisting of vapor and condensate collection systems capable of reducing VOC emissions by at least 99%, except for those periods described below when operation of the vapor control system is not required. [District Rules 2201, 4623, 5.6.1 and 40 CFR 60.112a(a)(3)] Federally Enforceable Through Title V Permit
4. Except when storing or processing diesel motor fuel, or preparing the tank for product change between diesel fuel and any other organic liquids, the tank shall always be connected to the vapor control system. [District Rule 2201] Federally Enforceable Through Title V Permit
5. All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 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-33-426-0: Aug 25 2008 1:03PM - LEONARDS : Joint Inspection Required with LEONARDS

6. A leak-free 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 and shall be reported as a deviation, except as provided below. [District Rule 4623] Federally Enforceable Through Title V Permit
7. If any of the tank components are found to be leaking (>500 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21), the facility operator shall affix to that component a weatherproof readily visible tag bearing the date on which the leak is detected. The tag shall remain in place until the leaking component is repaired, reinspected, and found to be in compliance with the requirements of Rule 4623. The operator shall maintain records of gas leak detection readings, date/time leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 4623 and 40 CFR 60.112b(a)(3)(i)] Federally Enforceable Through Title V Permit
8. Leaks measuring > 500 ppmv and < 10,000 ppmv, or leaks measuring > 10,000 ppmv from components within five feet of the tank that have been discovered by the operator and have been immediately tagged and repaired within the deadlines specified in the Emissions Minimization requirements, shall not constitute a violation of this permit. However, leaking components discovered during inspections by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the deadlines specified in the Emissions Minimization requirements, shall constitute a violation. [District Rule 4623] Federally Enforceable Through Title V Permit
9. Upon detection of any leaks >10,000 ppmv, measured in accordance with EPA Method 21 by a portable hydrocarbon detection instrument that is calibrated with methane, the operator shall: a. Eliminate the leak within 8 hours after detection; or b. If the leak can not be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices; c. Eliminate the leak within 48 hours after minimization; and d. In no event that the total time to eliminate the leak shall exceed 56 hours after detection. [District Rule 4623] Federally Enforceable Through Title V Permit
10. If a component type for a given tank is found to leak above the 10,000 ppmv during an annual inspection, then quarterly inspections of that component type on the tank or system shall be conducted for four consecutive quarters. After four successful quarterly inspections in which the component type is found to leak less than 10,000 ppmv, inspections interval may revert to annual. [District Rule 4623] Federally Enforceable Through Title V Permit
11. Any tank gauging or sampling device on a tank vented to the vapor control system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623] Federally Enforceable Through Title V Permit
12. When diesel fuel is being stored, placed, or held in this tank, uncontrolled VOC emissions shall not exceed 5.9 lbs/day. [District Rule 2201] Federally Enforceable Through Title V Permit
13. When storing organic liquids other than diesel fuel, total controlled VOC emissions from fugitive components shall not exceed 2.4 lbs/day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Total fugitive emissions rate from valves, flanges, connectors, and "others" connecting this unit to the refinery vapor control system shall be periodically calculated as described below using the California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities (February 1999), Table IV-3a:CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals (as described in the following condition). [District Rule 2201] Federally Enforceable Through Title V Permit
15. Permit holder shall maintain accurate component count and resultant emissions according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-3a (Feb 1999), CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals. Permit holder shall update such records when new components are installed. Except for all piping, fittings, and valves directly affixed to the tank or associated with the tank vapor control system, components shall be screened and leak rate shall be measured at least once each quarter. If compliance with the daily emission limit is shown during each of five (5) consecutive quarterly inspections, the inspection frequency may be changed from quarterly to annual. If any annual inspection shows non-compliance with the daily emission limit, then quarterly inspections shall be resumed. [District Rule 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

16. All piping, fittings, and valves directly affixed to the tank or associated with the tank vapor control system 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 provisions of this permit. [District Rule 4623 and 40 CFR 60.112b(a)(3)(i)] Federally Enforceable Through Title V Permit
17. When storing diesel fuel, maximum daily throughput shall not exceed 20,000 bbls. [District Rule 2201] Federally Enforceable Through Title V Permit
18. When storing diesel fuel, the tank shall be in a leak-free condition. The pressure-vacuum (PV) relief valve shall be 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, 5.2] Federally Enforceable Through Title V Permit
19. {2774} 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, 6.3.1] Federally Enforceable Through Title V Permit
20. The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287-92 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 4057-95 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 4623, 6.4.2] Federally Enforceable Through Title V Permit
21. {2591} The operator of a fixed roof tank shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
22. Tank may be disconnected from vapor control system during maintenance and cleaning periods provided liquids and vapors subject to Rule 4623 are completely removed and vapor lines are isolated. [District Rule 4623] Federally Enforceable Through Title V Permit
23. Permittee shall receive written or faxed approval from the District Compliance division prior to tank vapor control system disconnection. [District Rule 4623] Federally Enforceable Through Title V Permit
24. Upon reconnection to vapor control system, permittee shall demonstrate using a portable hydrocarbon monitor that all tank pressure relief valves and other fugitive components associated with the tank are gas tight, as defined in Rule 4623. [District NSR Rule] Federally Enforceable Through Title V Permit
25. Permittee shall keep a record of each period of storage when tank vapor control system is not in operation and of the initial boiling point or true vapor pressure of each organic liquid stored in the tank during such periods. [District Rule 2201] Federally Enforceable Through Title V Permit
26. Collected vapors shall discharge only to refinery fuel gas or flare gas system. [District Rule 2201] Federally Enforceable Through Title V Permit
27. As part of its notification required by 40 CFR 60.7(a)(1) or 60.7(a)(2), the operator shall submit to the APCO for approval an operating plan as described in 40 CFR 60.113b(c) and shall operate the closed vent system and monitor the parameters of the system in accordance with the approved operating plan. The operator shall keep a record of the measured values of the parameters monitored in accordance with the approved operating plan. The operating plan shall be retained for the life of the control equipment. [40 CFR 60.113b(c), 60.115b(c)] Federally Enforceable Through Title V Permit
28. Operator shall determine the presence of VOC leaks by EPA Method 21. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21 using the following calibration gases; 1.) Zero air (less than 10 ppm of hydrocarbon in air); and 2.) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane. [40 CFR 60.112b(a)(3)(i)] Federally Enforceable Through Title V Permit
29. Operator shall maintain a record showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. [40 CFR 60.116b(b)] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

30. Control efficiency shall be determined by a comparison of controlled emissions to those emissions which would occur from a fixed or cone roof tank in the same product service without a vapor control system. Emissions shall be determined based on tank emission factors in EPA Publication AP-42, component counts for fugitive emissions sources, recognized emission factors for fugitive emission sources, and the efficiency of any VOC destruction device. [District Rule 4623] Federally Enforceable Through Title V Permit
31. The efficiency of any VOC destruction device shall be measured by EPA Method 25, 25a, or 25b, and analysis of halogenated exempt compounds shall be analyzed by ARB Method 432. [District Rule 4623, 6.4] Federally Enforceable Through Title V Permit
32. The operator shall ensure that the vapor control system is functional and is operating as designed whenever emissions are being vented to it. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
33. Construction, reconstruction, or modification of this unit was commenced after July 23, 1984. Therefore, the requirements of 40 CFR 60 Subpart K and Ka do not apply to this source. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
34. As used in this permit, the term "source or type of petroleum" shall mean petroleum liquids with similar characteristics. The operator shall maintain records of API gravity of petroleum liquids stored in this unit to determine which oils are from a common source. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
35. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 541 lb, 2nd quarter - 541 lb, 3rd quarter - 542 lb, and fourth quarter - 542 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). [District Rule 2201] Federally Enforceable Through Title V Permit
36. ERC Certificate Number S-2452-1 (or a certificate split from this certificate) 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

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-33-428-0

LEGAL OWNER OR OPERATOR: BIG WEST OF CA, LLC
MAILING ADDRESS: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

LOCATION: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

EQUIPMENT DESCRIPTION:
80,000 BBL FIXED ROOF ORGANIC LIQUID STORAGE TANK CONNECTED TO REFINERY VAPOR CONTROL SYSTEM EXCEPT WHEN STORING DIESEL FUEL

CONDITIONS

1. 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. The tank shall be equipped with a vapor control system consisting of vapor and condensate collection systems capable of reducing VOC emissions by at least 99%, except for those periods described below when operation of the vapor control system is not required. [District Rules 2201, 4623, 5.6.1 and 40 CFR 60.112a(a)(3)] Federally Enforceable Through Title V Permit
4. Except when storing or processing diesel motor fuel, or preparing the tank for product change between diesel fuel and any other organic liquids, the tank shall always be connected to the vapor control system. [District Rule 2201] Federally Enforceable Through Title V Permit
5. All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rule 4623] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 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-33-428-0, Aug 25 2008 1:03PM - LEONARDS . Joint Inspection Required with LEONARDS

6. A leak-free 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 and shall be reported as a deviation, except as provided below. [District Rule 4623] Federally Enforceable Through Title V Permit
7. If any of the tank components are found to be leaking (>500 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21), the facility operator shall affix to that component a weatherproof readily visible tag bearing the date on which the leak is detected. The tag shall remain in place until the leaking component is repaired, reinspected, and found to be in compliance with the requirements of Rule 4623. The operator shall maintain records of gas leak detection readings, date/time leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 4623 and 40 CFR 60.112b(a)(3)(i)] Federally Enforceable Through Title V Permit
8. Leaks measuring > 500 ppmv and < 10,000 ppmv, or leaks measuring > 10,000 ppmv from components within five feet of the tank that have been discovered by the operator and have been immediately tagged and repaired within the deadlines specified in the Emissions Minimization requirements, shall not constitute a violation of this permit. However, leaking components discovered during inspections by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the deadlines specified in the Emissions Minimization requirements, shall constitute a violation. [District Rule 4623] Federally Enforceable Through Title V Permit
9. Upon detection of any leaks >10,000 ppmv, measured in accordance with EPA Method 21 by a portable hydrocarbon detection instrument that is calibrated with methane, the operator shall: a. Eliminate the leak within 8 hours after detection; or b. If the leak can not be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices; c. Eliminate the leak within 48 hours after minimization; and d. In no event that the total time to eliminate the leak shall exceed 56 hours after detection. [District Rule 4623] Federally Enforceable Through Title V Permit
10. If a component type for a given tank is found to leak above the 10,000 ppmv during an annual inspection, then quarterly inspections of that component type on the tank or system shall be conducted for four consecutive quarters. After four successful quarterly inspections in which the component type is found to leak less than 10,000 ppmv, inspections interval may revert to annual. [District Rule 4623] Federally Enforceable Through Title V Permit
11. Any tank gauging or sampling device on a tank vented to the vapor control system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rule 4623] Federally Enforceable Through Title V Permit
12. When diesel fuel is being stored, placed, or held in this tank, uncontrolled VOC emissions shall not exceed 23.8 lbs/day. [District Rule 2201] Federally Enforceable Through Title V Permit
13. When storing organic liquids other than diesel fuel, total controlled VOC emissions from fugitive components shall not exceed 1.3 lbs/day. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Total fugitive emissions rate from valves, flanges, connectors, and "others" connecting this unit to the refinery vapor control system shall be periodically calculated as described below using the California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities (February 1999), Table IV-3a:CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals (as described in the following condition). [District Rule 2201] Federally Enforceable Through Title V Permit
15. Permit holder shall maintain accurate component count and resultant emissions according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-3a (Feb 1999), CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals. Permit holder shall update such records when new components are installed. Except for all piping, fittings, and valves directly affixed to the tank or associated with the tank vapor control system, components shall be screened and leak rate shall be measured at least once each quarter. If compliance with the daily emission limit is shown during each of five (5) consecutive quarterly inspections, the inspection frequency may be changed from quarterly to annual. If any annual inspection shows non-compliance with the daily emission limit, then quarterly inspections shall be resumed. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

16. All piping, fittings, and valves directly affixed to the tank or associated with the tank vapor control system 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 provisions of this permit. [District Rule 4623 and 40 CFR 60.112b(a)(3)(i)] Federally Enforceable Through Title V Permit
17. When storing diesel fuel, maximum daily throughput shall not exceed 30,000 bbls. [District Rule 2201] Federally Enforceable Through Title V Permit
18. When storing diesel fuel, the tank shall be in a leak-free condition. The pressure-vacuum (PV) relief valve shall be 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, 5.2] Federally Enforceable Through Title V Permit
19. {2774} 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, 6.3.1] Federally Enforceable Through Title V Permit
20. The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287-92 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 4057-95 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 4623, 6.4.2] Federally Enforceable Through Title V Permit
21. {2591} The operator of a fixed roof tank shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2520, 9.4.2] Federally Enforceable Through Title V Permit
22. Tank may be disconnected from vapor control system during maintenance and cleaning periods provided liquids and vapors subject to Rule 4623 are completely removed and vapor lines are isolated. [District Rule 4623] Federally Enforceable Through Title V Permit
23. Permittee shall receive written or faxed approval from the District Compliance division prior to tank vapor control system disconnection. [District Rule 4623] Federally Enforceable Through Title V Permit
24. Upon reconnection to vapor control system, permittee shall demonstrate using a portable hydrocarbon monitor that all tank pressure relief valves and other fugitive components associated with the tank are gas tight, as defined in Rule 4623. [District NSR Rule] Federally Enforceable Through Title V Permit
25. Permittee shall keep a record of each period of storage when tank vapor control system is not in operation and of the initial boiling point or true vapor pressure of each organic liquid stored in the tank during such periods. [District Rule 2201] Federally Enforceable Through Title V Permit
26. Collected vapors shall discharge only to refinery fuel gas or flare gas system. [District Rule 2201] Federally Enforceable Through Title V Permit
27. As part of its notification required by 40 CFR 60.7(a)(1) or 60.7(a)(2), the operator shall submit to the APCO for approval an operating plan as described in 40 CFR 60.113b(c) and shall operate the closed vent system and monitor the parameters of the system in accordance with the approved operating plan. The operator shall keep a record of the measured values of the parameters monitored in accordance with the approved operating plan. The operating plan shall be retained for the life of the control equipment. [40 CFR 60.113b(c), 60.115b(c)] Federally Enforceable Through Title V Permit
28. Operator shall determine the presence of VOC leaks by EPA Method 21. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21 using the following calibration gases; 1.) Zero air (less than 10 ppm of hydrocarbon in air); and 2.) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane. [40 CFR 60.112b(a)(3)(i)] Federally Enforceable Through Title V Permit
29. Operator shall maintain a record showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. [40 CFR 60.116b(b)] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

30. Control efficiency shall be determined by a comparison of controlled emissions to those emissions which would occur from a fixed or cone roof tank in the same product service without a vapor control system. Emissions shall be determined based on tank emission factors in EPA Publication AP-42, component counts for fugitive emissions sources, recognized emission factors for fugitive emission sources, and the efficiency of any VOC destruction device. [District Rule 4623] Federally Enforceable Through Title V Permit
31. The efficiency of any VOC destruction device shall be measured by EPA Method 25, 25a, or 25b, and analysis of halogenated exempt compounds shall be analyzed by ARB Method 432. [District Rule 4623, 6.4] Federally Enforceable Through Title V Permit
32. The operator shall ensure that the vapor control system is functional and is operating as designed whenever emissions are being vented to it. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
33. Construction, reconstruction, or modification of this unit was commenced after July 23, 1984. Therefore, the requirements of 40 CFR 60 Subpart K and Ka do not apply to this source. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
34. As used in this permit, the term "source or type of petroleum" shall mean petroleum liquids with similar characteristics. The operator shall maintain records of API gravity of petroleum liquids stored in this unit to determine which oils are from a common source. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
35. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 2,170 lb, 2nd quarter - 2,170 lb, 3rd quarter - 2,170 lb, and fourth quarter - 2,170 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). [District Rule 2201] Federally Enforceable Through Title V Permit
36. ERC Certificate Number S-2452-1 (or a certificate split from this certificate) 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
37. Upon implementation of this Authority to Construct document, Authority to Construct S-33-434-0 shall be canceled. [District Rule 2201]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-33-429-0

LEGAL OWNER OR OPERATOR: BIG WEST OF CA, LLC
MAILING ADDRESS: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

LOCATION: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

EQUIPMENT DESCRIPTION:
525 BHP CLARK MODEL JX6H-UF60 EMERGENCY DIESEL TIER 2 IC ENGINE (OR DISTRICT APPROVED EQUIVALENT) POWERING A FIREWATER PUMP

CONDITIONS

1. 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. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2010] Federally Enforceable Through Title V Permit
5. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201]
6. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No increases in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 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-33-429-0 - Aug 25 2008 1:03PM - LEONARDS - Joint Inspection Required with LEONARDS

7. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] Federally Enforceable Through Title V Permit
8. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201] Federally Enforceable Through Title V Permit
9. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101] Federally Enforceable Through Title V Permit
10. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702] Federally Enforceable Through Title V Permit
11. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102] Federally Enforceable Through Title V Permit
12. Only CARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801 and 17 CCR 93115] Federally Enforceable Through Title V Permit
13. This engine shall be operated only for maintenance, testing, required regulatory purposes, and during emergency situations. For testing purposes, the engine shall only be operated the number of hours necessary to comply with the testing requirements of the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems", 1998 edition. Total hours of operation for all maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rule 4702 and 17 CCR 93115] Federally Enforceable Through Title V Permit
14. Emissions from this IC engine shall not exceed any of the following limits: 4.67 g-NOx/bhp-hr, 2.6 g-CO/bhp-hr, or 0.13 g-VOC/bhp-hr. [District Rule 2201 and 13 CCR 2423 and 17 CCR 93115] Federally Enforceable Through Title V Permit
15. Emissions from this IC engine shall not exceed 0.149 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 13 CCR 2423 and 17 CCR 93115] Federally Enforceable Through Title V Permit
16. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rule 4702 and 17 CCR 93115] Federally Enforceable Through Title V Permit
17. The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, and the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.). For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-33-434-0

LEGAL OWNER OR OPERATOR: BIG WEST OF CA, LLC
MAILING ADDRESS: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

LOCATION: 6451 ROSEDALE HWY (AREA 1 & 2)
BAKERSFIELD, CA 93308

EQUIPMENT DESCRIPTION:
80,000 BBL EXTERNAL FLOATING ROOF ORGANIC LIQUID STORAGE TANK (TANK # 80M02)

CONDITIONS

1. 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. Permittee shall comply with all 40 CFR Part 60 Subpart A notification, reporting, and recordkeeping requirements. [40 CFR 60, paragraph 60.7] Federally Enforceable Through Title V Permit
4. True vapor pressure of organic liquid stored shall not exceed 11.0 psia. [District NSR Rule, Rule 4623, 40 CFR Part 60: Subpart Kb] Federally Enforceable Through Title V Permit
5. Maximum daily throughput shall not exceed 80,000 bbls. [District Rule 2201] Federally Enforceable Through Title V Permit
6. VOC emissions from this unit shall not exceed 52.5 lbs/day. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Total fugitive emissions rate from valves, flanges, connectors, and "others" from components in this permit unit shall be calculated using the California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities (February 1999), Table IV-3a:CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals (as described in the following conditions). [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 326-6900 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-33-434-0: Aug 25 2008 1:03PM -- LEONARDS : Joint Inspection Required with LEONARDS

8. Seal designs shall be submitted to the APCO and shall not be installed or used unless they are approved by the APCO as meeting the criteria set forth in Sections 5.3.2.1 through 5.3.2.3 as applicable. Seal designs other than set forth in Sections 5.3.2.1 through 5.3.2.3 may be approved provided that a notice allowing the use of such design has been published in the Federal Register pursuant to CFR 40 Part 60: Subpart Kb paragraph 60.114b. [District Rule 4623] Federally Enforceable Through Title V Permit
9. This tank shall be equipped with a closure device between the tank shell and roof edge consisting of two seals mounted one above the other; the one below shall be referred to as the primary seal, and the one above shall be referred to as the secondary seal. [District Rule 4623] Federally Enforceable Through Title V Permit
10. The external floating roof shall float on the surface of the stored liquid at all times (i.e., off the roof leg supports) except during the initial fill until the roof is lifted off the leg supports and when the tank is completely emptied and subsequently refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible. Whenever the permittee intends to land the roof on its legs, the permittee shall notify the APCO in writing at least five calendar days prior to performing the work. The tank must be in compliance with this rule before it may land on its legs. [District Rule 4623, 40 CFR Subpart Kb paragraph 60.112b] Federally Enforceable Through Title V Permit
11. Gaps between the tank shell and the primary seal shall not exceed 1 1/2 inches. [District Rule 4623] Federally Enforceable Through Title V Permit
12. The cumulative length of all gaps between the tank shell and the primary seal greater than 1/2 inch shall not exceed 10% of the circumference of the tank. [District Rule 4623] Federally Enforceable Through Title V Permit
13. The cumulative length of all primary seal gaps greater than 1/8 inch shall not exceed 30% of the circumference of the tank. [District Rule 4623] Federally Enforceable Through Title V Permit
14. No continuous gap in the primary seal greater than 1/8 inch wide shall exceed 10% of the tank circumference. [District Rule 4623] Federally Enforceable Through Title V Permit
15. No gap between the tank shell and the secondary seal shall exceed 1/2 inch. [District Rule 4623] Federally Enforceable Through Title V Permit
16. The cumulative length of all gaps between the tank shell and the secondary seal, greater than 1/8 inch shall not exceed 5% of the tank circumference. [District Rule 4623] Federally Enforceable Through Title V Permit
17. The metallic shoe-type seal shall be installed so that one end of the shoe extends into the stored liquid and the other end extends a minimum vertical distance of 24 inches above the stored liquid surface. [District Rule 4623] Federally Enforceable Through Title V Permit
18. The geometry of the metallic-shoe type seal shall be such that the maximum gap between the shoe and the tank shell shall be no greater than 3 inches for a length of at least 18 inches in the vertical plane above the liquid. [District Rule 4623] Federally Enforceable Through Title V Permit
19. There shall be no holes, tears, or openings in the secondary seal or in the primary seal envelope that surrounds the annular vapor space enclosed by the roof edge, seal fabric, and secondary seal. [District Rule 4623] Federally Enforceable Through Title V Permit
20. The secondary seal shall allow easy insertion of probes of up to 1 1/2 inches in width in order to measure gaps in the primary seal. [District Rule 4623] Federally Enforceable Through Title V Permit
21. The secondary seal shall extend from the roof to the tank shell and shall not be attached to the primary seal. [District Rule 4623] Federally Enforceable Through Title V Permit
22. All openings in the roof used for sampling and gauging, except pressure-vacuum valves which shall be set to within 10% of the maximum allowable working pressure of the roof, shall provide a projection below the liquid surface to prevent belching of liquid and to prevent entrained or formed organic vapor from escaping from the liquid contents of the tank and shall be equipped with a cover, seal or lid that shall be in a closed position at all times, with no visible gaps and be leak-free, except when the device or appurtenance is in use. [District Rule 4623] Federally Enforceable Through Title V Permit

23. A leak-free condition is defined as a condition without a gas leak or a liquid 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 and shall be reported as a deviation, except as provided below. A liquid leak is defined as the dripping of organic liquid at a rate of more than 3 drops per minute. [District Rule 4623] Federally Enforceable Through Title V Permit
24. Emissions from roof opening covers, seals, or lids which have been tagged by the facility operator for repair within 15 calendar days or which have been repaired and are awaiting reinspection shall not be in violation of this permit. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
25. Any leak in a roof opening cover, seal, or lid shall be repaired to a leak-free condition within fifteen (15) calendar days of detection. The APCO may grant a ten (10) calendar day extension provided the operator demonstrates that necessary and sufficient actions are being taken to correct the leak within this time period. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
26. If the leaking component is an essential part of a critical process unit which cannot be immediately shut down for repairs, the operator shall 1) Minimize the leak within 15 calendar days; and 2) If the leak which has been minimized still exceeds the concentration allowed by this permit, the essential component shall be repaired to eliminate the leak during the next process unit turnaround, but in no case later than one year from the date of the original leak detection. A critical process unit is any process unit which would result in the automatic shutdown of other process units if it were shut down. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
27. Except for automatic bleeder vents, rim vents, and pressure relief vents, each opening in a non-contact external floating roof shall provide a projection below the liquid surface. [District Rule 4623] Federally Enforceable Through Title V Permit
28. Except for automatic bleeder vents and rim vents, roof drains, and leg sleeves, each opening in the roof shall be equipped with a gasketed cover, seal, or lid that shall be maintained in a closed position at all times (i.e., no visible gap) except when in actual use. [District Rule 4623] Federally Enforceable Through Title V Permit
29. Automatic bleeder vents shall be equipped with a gasket and shall be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. [District Rule 4623] Federally Enforceable Through Title V Permit
30. Rim vents shall be equipped with a gasket and shall be set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting. [District Rule 4623] Federally Enforceable Through Title V Permit
31. Each emergency roof drain shall be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening. The fabric cover must be impermeable if the liquid is drained into the contents of the tanks. [District Rule 4623] Federally Enforceable Through Title V Permit
32. External floating roof legs shall be equipped with vapor socks or vapor barriers in order to maintain a leak-free condition so as to prevent VOC emissions from escaping through the roof leg opening. [District Rule 4623] Federally Enforceable Through Title V Permit
33. The solid guidepole well shall be equipped with a pole wiper and a gasketed cover, seal or lid which shall be in a closed position at all times (i.e., no visible gap) except when the well is in use. [District Rule 4623] Federally Enforceable Through Title V Permit
34. The gap between the pole wiper and the solid guidepole shall be added to the gaps measured to determine compliance with the secondary seal requirement, and in no case shall exceed 1/2 inch. [District Rule 4623] Federally Enforceable Through Title V Permit
35. The slotted guidepole well on a external floating roof shall be equipped with the following: a sliding cover, a well gasket, a pole sleeve, a pole wiper, and an internal float and float wiper designed to minimize the gap between the float and the well, and provided the gap shall not exceed 1/8 inch; or shall be equipped with a well gasket, a zero gap pole wiper seal and a pole sleeve that projects below the liquid surface. [District Rule 4623] Federally Enforceable Through Title V Permit

DRAFT
CONDITIONS CONTINUE ON NEXT PAGE

36. The gap between the pole wiper and the slotted guidepole shall be added to the gaps measured to determine compliance with the secondary seal requirement, and in no case shall exceed 1/8 inch. [District Rule 4623] Federally Enforceable Through Title V Permit
37. The permittee of external floating roof tanks shall make the primary seal envelope available for unobstructed inspection by the APCO on an annual basis at locations selected along its circumference at random by the APCO. In the case of riveted tanks with toroid-type seals, a minimum of eight locations shall be made available; in all other cases, a minimum of four locations shall be made available. If the APCO suspects a violation may exist the APCO may require such further unobstructed inspection of the primary seal as may be necessary to determine the seal condition for its entire circumference. [District Rule 4623] Federally Enforceable Through Title V Permit
38. The permittee shall inspect all floating tanks at least once every 12 months to determine compliance with the requirements of this rule. The actual gap measurements of the floating roof primary and secondary seals shall be recorded. The inspection results shall be submitted to the APCO as specified in Section 6.3.5. [District Rule 4623] Federally Enforceable Through Title V Permit
39. The permittee shall inspect the primary and secondary seals for compliance with the requirements of this rule every time a tank is emptied or degassed. Actual gap measurements shall be performed when the liquid level is static but not more than 24 hours after the tank roof is re-floated. [District Rule 4623] Federally Enforceable Through Title V Permit
40. Permittee shall submit the reports of the floating roof tank inspections to the APCO within five calendar days after the completion of the inspection only for those tanks that failed to meet the applicable requirements of Rule 4623, Sections 5.2 through 5.5. The inspection report for tanks that have been determined to be in compliance with the requirements of Sections 5.2 through 5.5 need not be submitted to the APCO, but the inspection report shall be kept on-site and made available upon request by the APCO. The inspection report shall contain all necessary information to demonstrate compliance with the provisions of Rule 4623. [District Rule 4623] Federally Enforceable Through Title V Permit
41. Any roof drain shall be provided with a slotted membrane fabric cover, or equivalent, that covers at least 90% of the area of the opening. [District Rule 4623, 5.1.6] Federally Enforceable Through Title V Permit
42. The sliding cover shall be in place over the slotted-guidepole opening through the floating roof at all times except when the sliding cover must be removed for access. The guidepole float shall be floating within the guidepole at all times except when it must be removed for access to the stored liquid or when the tank is empty. [District Rule 4623] Federally Enforceable Through Title V Permit
43. The permittee shall visually inspect the deck fitting for the slotted guidepole at least once every 10 years and each time the vessel is emptied and degassed. If the slotted guidepole deck fitting or control devices have defects, or if a gap of more than 0.32 centimeters (1/8 inch) exists between any gasket required for control of the slotted guidepole deck fitting and any surface that it is intended to seal, such items shall be repaired before filling or refilling the storage vessel with regulated material. [District Rule 4623] Federally Enforceable Through Title V Permit
44. Operator shall keep a record of type of liquids stored in each container, period of storage, storage temperature, and both the Reid and maximum true vapor pressure of such liquids. [District Rule 4623] Federally Enforceable Through Title V Permit
45. The tank shall be equipped with a cover consisting of either a pontoon-type or double-deck-type cover which rests upon the surface of the liquid being stored and is equipped with a closure device between the tank shell and roof edge consisting of a primary and a secondary seal. [District Rule 4623] Federally Enforceable Through Title V Permit
46. Accumulated area of gaps between tank wall and primary seal shall not exceed: 1) 10.0 sq inch per foot of tank diameter and the width of any portion of any gap shall not exceed one and one-half (1-1/2) inch, for a metallic shoe seal or a liquid-mounted seal; 2) 1.0 sq inch per foot of tank diameter and the width of any portion of any gap shall not exceed one-half (1/2) inch for a vapor mounted seal [40 CFR 60.113b] Federally Enforceable Through Title V Permit
47. If the secondary seal is used in combination with a metallic shoe or liquid-mounted primary seal, accumulated area of gaps between tank wall and the secondary seal shall not exceed 1.0 sq inch per foot of tank diameter and the width of any portion of any gap shall not exceed one-half (1/2) inch. [40 CFR 60.113b(b)(4)(ii)(B)] Federally Enforceable Through Title V Permit

DRAFT
CONDITIONS CONTINUE ON NEXT PAGE

48. All roof opening covers, seals and lids covering openings in the roof used for sampling and gauging, except pressure-vacuum valves set to within 10 percent of the maximum allowable working pressure of the roof, shall be inspected annually by the facility operator to ensure compliance with the provisions of this permit. However, if one or more of the components are found to leak during an annual inspection, the inspection frequency for that component type shall be changed from annual to quarterly. If none of the components of that type are subsequently found to be leaking during five consecutive inspections, the inspection frequency may be changed from quarterly to annual. Components located in inaccessible (over 15 feet above ground when access is required from the ground or over 6 feet away from a platform when access is required from the platform) locations shall be inspected at least annually and components located in unsafe areas shall be inspected and repaired at the next process unit turnaround (the scheduled shutdown of a unit for maintenance and repair work). [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
49. A facility operator, upon detection of a leaking cover, seal, or lid, shall affix to that component a weatherproof readily visible tag bearing the date on which the leak is detected. The tag shall remain in place until the leaking component is repaired, reinspected and found to be in compliance with the requirements of this rule. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
50. An operator shall reinspect a cover, seal, or lid for leaks within thirty working days after the date on which the component is repaired. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
51. Operator shall maintain an inspection log containing the following: 1) Type of component leaking; 2) Date of leak detection, and method of detection; 3) Date and emission level of recheck after leak is repaired; 4) Identification and location of essential parts of critical process units found leaking that cannot be repaired until the next process unit turnaround; and 5) Method used to minimize the leak from essential parts of critical process units which cannot be repaired until the next process unit turnaround. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
52. Operator shall perform gap measurements on primary seals within 60 days of the initial fill and at least once every 5 years thereafter. Operator shall perform gap measurements on secondary seals within 60 days of the initial fill with petroleum liquid and at least once every year thereafter. If unit is out of service for a period of one year or more, subsequent refilling with petroleum liquid shall be considered initial fill. [40 CFR 60.113b(b)(1)(i), (ii), and (iii)] Federally Enforceable Through Title V Permit
53. Operator shall determine gap widths in the primary and secondary seals using the following procedure: 1) Measure seal gaps, at one or more floating roof levels when the roof is floating off leg supports; 2) Measure seal gaps around entire circumference of the tank in each place where a one-eighth (1/8) inch diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the tank wall and measure the circumferential distance of each such location; 3), Total surface area of each gap shall be determined by using probes of various widths to accurately measure the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance; 4) Add the gap surface area of each gap location for the primary seal and the secondary seal individually. Divide the sum for each seal by the nominal diameter of the tank. [40 CFR 60.113b] Federally Enforceable Through Title V Permit
54. Operator shall record the vessel on which the measurement was performed, date of the seal gap measurement, and raw data obtained in the measurement process in accordance with the conditions of this permit. [40 CFR 60.115b] Federally Enforceable Through Title V Permit
55. Operator shall provide the APCO with 30 days notice of the gap measurement to afford the District the opportunity to have an observer present. [40 CFR 60.115b] Federally Enforceable Through Title V Permit
56. If the accumulated area of gaps or gap width exceed limits, operator shall submit a report to the APCO within 60 days of the date of measurement. Report should include identification of the vessel, reason vessel did not meet the specifications, and a description of the actions necessary to bring the storage vessel into compliance. [40 CFR 60.115.b] Federally Enforceable Through Title V Permit
57. Maximum true vapor pressure 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 60.115a(b)] Federally Enforceable Through Title V Permit

DRAFT
CONDITIONS CONTINUE ON NEXT PAGE

58. True vapor pressure shall be measured using Reid vapor pressure ASTM Method D323-82 modified by maintaining the hot water bath at storage temperature. Where storage temperature is above 100 °F true vapor pressure shall be determined by Reid vapor pressure at 100 °F and ARB approved calculations. [District Rule 4623, 6.2.2 and District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
59. True vapor pressure of crude oil with an API (American Petroleum Institute) gravity less than 30°, as determined by API 2547, may be determined by Headspace Gas Chromatography using the procedures from ARB Evaluation of a Method for Determining Vapor Pressures of Petroleum Mixtures by Headspace Gas Chromatography, October 1990. [District Rule 4623, 6.2.3 and District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
60. Operator shall determine the true vapor pressure of the petroleum liquid stored in the tank at least once per year in accordance with methods described in section 6.2 of District Rule 4623 (amended 12/17/1992). Determinations shall be made annually during summer and whenever there is a change in the source or type of petroleum entering the tank. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
61. Construction, reconstruction, or modification of this unit was commenced after May 18, 1978 and prior to July 23, 1984. Therefore, the requirements of 40 CFR 60 Subpart K and Ka do not apply to this source. A permit shield is granted from these requirements. [District Rule 2520, 13.2] Federally Enforceable Through Title V Permit
62. As used in this permit, the term "source or type of petroleum" shall mean petroleum liquids with similar characteristics. The operator shall maintain records of API gravity of petroleum liquids store in this unit to determine which oil are from common source. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
63. Permittee shall maintain the records of the external floating roof landing activities that are performed pursuant to Rule 4623, Sections 5.3.1.3 and 5.4.3. The records shall include information on the true vapor pressure (TVP), API gravity, storage temperature, type of organic liquid stored in the tank, the purpose of landing the roof on its legs, the date of roof landing, duration the roof was on its legs, the level or height at which the tank roof was set to land on its legs, and the lowest liquid level in the tank. [District Rule 4623] Federally Enforceable Through Title V Permit
64. 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
65. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 3,427 lb, 2nd quarter - 3,427 lb, 3rd quarter - 3,428 lb, and fourth quarter - 3,428 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). [District Rule 2201] Federally Enforceable Through Title V Permit
66. ERC Certificate Number S-2452-1 (or a certificate split from this certificate) 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
67. Upon implementation of this Authority to Construct document, Authority to Construct S-33-428-0 shall be canceled. [District Rule 2201] Federally Enforceable Through Title V Permit

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