San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

FEB 15 2013

Shams Hasan
E&B Natural Resources
34740 Merced Ave
Bakersfield, CA 93308

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: S-1124268

Dear Mr. Hasan:

Enclosed for your review and comment is the District's analysis of E&B Natural Resources's application for Authorities to Construct for three new crude oil storage tanks, 585 new thermally enhanced oil wells and to add vapor control to three crude oil storage tanks, at the Anza and Tyson leases in sec 4, T28S/R27E and sec 28, T27S/R27E, respectively.

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

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. David Torii of Permit Services at 661-392-5620.

Sincerely,

David Warner
Director of Permit Services

DW:DBT/st

Enclosures

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

www.valleyair.org www.healthyairliving.com

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

FEB 15 2013

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

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: S-1124268

Dear Mr. Tollstrup:

Enclosed for your review and comment is the District's analysis of E&B Natural Resources's application for Authorities to Construct for three new crude oil storage tanks, 585 new thermally enhanced oil wells and to add vapor control to three crude oil storage tanks, at the Anza and Tyson leases in sec 4, T28S/R27E and sec 28, T27S/R27E, respectively.

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

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AIR POLLUTION CONTROL DISTRICT

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FEB 15 2013

Gerardo C. Rios (AIR 3)
Chief, Permits Office
Air Division
U.S. E.P.A. - Region IX
75 Hawthorne Street
San Francisco, CA 94105

Re: Notice of Preliminary Decision - Authority to Construct
Project Number: S-1124268

Dear Mr. Rios:

Enclosed for your review and comment is the District's analysis of E&B Natural Resources's application for Authorities to Construct for three new crude oil storage tanks, 585 new thermally enhanced oil wells and to add vapor control to three crude oil storage tanks, at the Anza and Tyson leases in sec 4, T28S/R27E and sec 28, T27S/R27E, respectively.

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

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. David Torii of Permit Services at 661-392-5620.

Sincerely,

David Warner
Director of Permit Services

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www.valleyair.org www.healthyairliving.com

Bakersfield Californian
Bakersfield Californian

**NOTICE OF PRELIMINARY DECISION
FOR THE PROPOSED ISSUANCE OF
AN AUTHORITY TO CONSTRUCT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Unified Air Pollution Control District solicits public comment on the proposed issuance of Authorities to Construct to E&B Natural Resources for three new crude oil storage tanks, 585 new thermally enhanced oil wells and to add vapor control to three crude oil storage tanks, at the Anza and Tyson leases in sec 4, T28S/R27E and sec 28, T27S/R27E, respectively.

The analysis of the regulatory basis for this proposed action, Project #S-1124268, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. Written comments on this project must be submitted within 30 days of the publication date of this notice to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, 34946 FLYOVER COURT, BAKERSFIELD, CA 93308.**

San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Tanks and Wells

Facility Name:	E&B Natural Resources		
Mailing Address:	34740 Merced Ave. Bakersfield, CA 93308	Engineer:	David Torii
		Lead Engineer:	~~Rich Kerrs~~ AQ Assoc ADE
Contact Person:	Shams Hasan		JAN 31 2013
Telephone:	661-616-6168		
Application #(s):	S-1624-81-3, '82-3, '84-3, '97-4, '208-1, '244-1, '248-0, '249-0 and '250-0		
Project #:	1124268		
Deemed Complete:	12/17/12		

I. Proposal

E&B Natural Resources (ENR) requests Authorities to Construct for the following:

- Add vapor control to fixed roof tanks S-1624-81, '82 and '84.
- Add one new 500 bbl wash tank and two new 500 bbl stock tanks.
- Increase number of wells on TEOR S-1624-97 to 400 and add section 28, T27S/R27E
- Increase number of wells on TEOR S-1624-208 to 200 and add sections10,11, 14 and 15 T27S/R27E
- Increase number of wells on TEOR S-1624-244 to 200, increase TEOR vapor VOC concentration to 100% and add section 28, T27S/R27E

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410	Prevention Of Significant Deterioration (11/26/12)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4401	Steam Enhanced Crude Oil Production Well Vents (06/16/11)
Rule 4623	Storage of Organic Liquids (05/19/05
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice

Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The tank settings are located in ENR's Heavy Oil Central stationary source at the Anza and Tyson leases in sec 4, T28S/R27E and sec 28, T27S/R27E, respectively. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

The wells produce crude oil from oil bearing strata. The tanks receive production from the wells prior to transport to refiners.

V. Equipment Listing

Pre-Project Equipment Description (see PTOs in Appendix B)

S-1624-81-2: 1,760 BBL FIXED ROOF CRUDE OIL PRODUCTION TANK WITH PV VENT #2GK32 (ANZA)

S-1624-82-2: 4,330 BBL FIXED ROOF CRUDE OIL PRODUCTION TANK WITH PV VENT, WASH #2 (ANZA)

S-1624-84-2: 1,760 BBL FIXED ROOF CRUDE OIL PRODUCTION TANK WITH PV VENT #2GK33 (ANZA)

S-1624-97-3: THERMALLY ENHANCED OIL RECOVERY (TEOR) OPERATION SERVING 99 STEAM ENHANCED WELLS WITH GAS/LIQUID SEPARATORS, WATER-COOLED HEAT EXCHANGER, AND AIR-COOLED HEAT EXCHANGER (POSO)

S-1624-208-0: TEOR OPERATION WELL VENT VAPOR CONTROL SYSTEM, INCLUDING UP TO 16 STEAM ENHANCED WELLS, AND COMPRESSED VAPOR PIPING TO DISTRICT AUTHORIZED DISPOSAL/INCINERATION DEVICES (POSO)

S-1624-244-0: TEOR OPERATION WITH UP TO 100 STEAM-ENHANCED PRODUCTION WELLS WITH CLOSED CASING VENTS

Proposed ATCs:

S-1624-81-3: MODIFICATION OF 1,760 BBL FIXED ROOF CRUDE OIL PRODUCTION TANK WITH PV VENT #2GK32 (ANZA): ADD VAPOR CONTROL SYSTEM SHARED WITH S-1624-82 AND '84 AND CORRECT TANK VOLUME TO 2000 BBL

S-1624-82-3: MODIFICATION OF 4,330 BBL FIXED ROOF CRUDE OIL PRODUCTION TANK WITH PV VENT, WASH #2 (ANZA): ADD VAPOR CONTROL LISTED ON S-1624-81 AND CORRECT TANK VOLUME TO 5000 BBL

S-1624-84-3: MODIFICATION OF 1,760 BBL FIXED ROOF CRUDE OIL PRODUCTION TANK WITH PV VENT #2GK33 (ANZA): ADD VAPOR CONTROL LISTED ON S-1624-81

S-1624-97-4: MODIFICATION OF THERMALLY ENHANCED OIL RECOVERY (TEOR) OPERATION SERVING 99 STEAM ENHANCED WELLS WITH GAS/LIQUID SEPARATORS, WATER-COOLED HEAT EXCHANGER, AND AIR-COOLED HEAT EXCHANGER (POSO): INCREASE TOTAL NUMBER OF ALLOWED WELLS TO 400 AND ADD LOCATION SECTION 28, T27S, R27E

S-1627-208-1: MODIFICATION OF TEOR OPERATION WELL VENT VAPOR CONTROL SYSTEM, INCLUDING UP TO 16 STEAM ENHANCED WELLS, AND COMPRESSED VAPOR PIPING TO DISTRICT AUTHORIZED DISPOSAL/INCINERATION DEVICES (POSO): INCREASE TOTAL NUMBER OF ALLOWED WELLS TO 200 AND ADD LOCATIONS SECTIONS 10, 11, 14 AND 15 OF T27S, R27E

S-1627-244-1: MODIFICATION OF TEOR OPERATION WITH UP TO 100 STEAM-ENHANCED PRODUCTION WELLS WITH CLOSED CASING VENTS: INCREASE TOTAL NUMBER OF ALLOWED WELLS TO 200, INCREASE TEOR VOC VAPOR CONCENTRATION LIMIT TO 100% AND ADD LOCATION SECTION 28, T27S, R27E

S-1627-248-0: 500 BBL FIXED ROOF CRUDE OIL WASH TANK WITH PV VENT, TYSON LEASE

S-1627-249-0: 500 BBL FIXED ROOF CRUDE OIL STOCK TANK WITH PV VENT, TYSON LEASE

S-1627-250-0: 500 BBL FIXED ROOF CRUDE OIL STOCK TANK WITH PV VENT, TYSON LEASE

Post Project Equipment Description:

S-1624-81-3: 2000 BBL FIXED ROOF CRUDE OIL PRODUCTION TANK WITH VAPOR CONTROL SYSTEM, #2GK32 (ANZA)

S-1624-82-3: 5000 BBL FIXED ROOF CRUDE OIL PRODUCTION TANK SERVED BY VAPOR CONTROL SYSTEM LISTED ON S-1624-81, WASH #2 (ANZA)

S-1624-84-3: 1,760 BBL FIXED ROOF CRUDE OIL PRODUCTION TANK SERVED BY VAPOR CONTROL SYSTEM LISTED ON S-1624-81#2GK33 (ANZA)

S-1624-97-4: THERMALLY ENHANCED OIL RECOVERY (TEOR) OPERATION SERVING 400 STEAM ENHANCED WELLS WITH GAS/LIQUID SEPARATORS, WATER-COOLED HEAT EXCHANGER, AND AIR-COOLED HEAT EXCHANGER (POSO)

S-1627-208-1: TEOR OPERATION WELL VENT VAPOR CONTROL SYSTEM, INCLUDING UP TO 200 STEAM ENHANCED WELLS, AND COMPRESSED VAPOR PIPING TO DISTRICT AUTHORIZED DISPOSAL/INCINERATION DEVICES (POSO)

S-1627-244-1: TEOR OPERATION WITH UP TO 200 STEAM-ENHANCED PRODUCTION WELLS WITH CLOSED CASING VENTS:

S-1627-248-0: 500 BBL FIXED ROOF CRUDE OIL WASH TANK WITH PV VENT, TYSON LEASE

S-1627-249-0: 500 BBL FIXED ROOF CRUDE OIL STOCK TANK WITH PV VENT, TYSON LEASE

S-1627-250-0: 500 BBL FIXED ROOF CRUDE OIL STOCK TANK WITH PV VENT, TYSON LEASE

VI. Emission Control Technology Evaluation

New tanks S-1624-248, '249 and '250 will be equipped with a pressure-vacuum (PV) relief vent valve set to within 10% of the maximum allowable working pressure of the tank. The PV-valve will reduce VOC wind induced emissions from the tank vent.

The tank vapor control system proposed for tanks S-1624-81, '82 and '84 will collect vapors from the tanks and route the vapors to the field gas line. The efficiency of the vapor control system is at least 99%.

Steam-enhanced wells authorized by S-1624-244 are operated with closed casing vents. When the wellhead casing vent is closed, the gasses remaining in the oil stream are separated out in vapor controlled first line oil tanks.

Steam-enhanced wells authorized by S-1624-97 and '208 are operated with open casing vents If the wellhead casing vents are open, much of the entrained gasses are released at the vent and collected in a well casing collection system with at least 99% control efficiency in accordance with District Rule 4401. The vapor collection systems include the well casing gas piping network, compressors, pumps, liquid/gas separators and heat exchangers. The collected vapors from this TEOR casing vent collection system are piped to the field gas line.

VII. General Calculations

A. Assumptions

- Facility will operate 24 hours per day, 7 days per week, and 52 weeks per year.

- The subject equipment emits only VOC.
- Only fugitive VOCs emitted from components in gas service are calculated.
- Fugitive emissions from heavy oil liquid service components are negligible.
- The percentage of VOCs of the total hydrocarbons is 100% (Applicant).
- The CO2 equivalent of methane = 21

Tanks S-1624-81, '82 and '84:

Pre-project:

- TVP of oil = 0.5 psia (PTO)
- Throughput = 1 turnover/day
- Only fugitive VOCs emitted from components in gas service are calculated.

Tanks S-1624-248-0, '249-0 and '250-0:

- S-1624-248-0 throughput = 500 bbl/day
- S-1624-249-0 throughput = 50 bbl/day
- S-1624-250-0 throughput = 50 bbl/day

B. Emission Factors

From Best Performance Standard (BPS) Determination for Front-line Fixed Roof Tanks, the tank CO2e emission factor is:

- 0.019 Mton-CO_2e/bbl of produced liquids = 0.0187 ton-CO2e/bbl of produced liquids

Tanks S-1624-81, '82 and '84:

Pre-project:

- District Microsoft Excel spreadsheet for Tank Emissions - Fixed Roof Crude Oil less than 26° API. The spreadsheet for tanks was developed using the equations for fixed-roof tanks from EPA AP-42, Chapter 7.1.

Post-project:

- California Implementation Guidelines for Estimating Mass Emissions of fugitive Hydrocarbon Leaks at Petroleum Facilities, CAPCOA/CARB, February 1999 revised screening emissions factors.

Tanks S-1624-248-0, '249-0 and '250-0:

- District Microsoft Excel spreadsheet for Tank Emissions - Fixed Roof Crude Oil ess than 26o API. The spreadsheet for tanks was developed using the equations for fixed-roof tanks from EPA AP-42, Chapter 7.1.

TEORs S-1624-97, '208 and '244:

- California Implementation Guidelines for Estimating Mass Emissions of fugitive Hydrocarbon Leaks at Petroleum Facilities, CAPCOA/CARB, February 1999 revised screening emissions factors.

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Since S-1624-248-0, '249-0 and '250-0 are new emissions units, PE1s = 0 for all pollutants.

PE1*		
	Daily Emissions (lb-VOC/day)	Annual Emissions (lb-VOC/year)
S-1624-81-2	91.9	33,544
S-1624-82-2	4.4	1590
S-1624-84-2	91.9	33,544
S-1624-97-3	3.0	1090
S-1624-208-0	0.5	180
S-1624-244-0	3.1	1124
Total:		71,072

*See emission calculations in Appendix C

2. Post Project Potential to Emit (PE2)

PE2			
	Daily Emissions (lb-VOC/day)	Annual Emissions	
		lb-VOC/year	ton-CO2e/year
S-1624-81-3	0.2 + 0.4* = 0.6	219	
S-1624-82-3	0.2	73	
S-1624-84-3	0.2	73	
S-1624-97-4	12.3	4494	
S-1624-208-1	6.2	2247	
S-1624-244-1	6.2	2247	
S-1624-248-0	1.0	378	3413**
S-1624-249-0	1.4	508	341**
S-1624-250-0	1.4	508	341**
Total		10,747	4095

See emission calculations in Appendix D
*VRU components
**CO2e emissions are calculated as follows:
500 bbl/day x 365 day/yr x 0.0187 ton-CO2e/bbl = 3413 ton-CO2e/yr

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

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

Facility emissions are already above the Offset and Major Source Thresholds for VOC emissions; therefore, SSPE1 calculations are not necessary.

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

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

Since facility emissions are already above the Offset and Major Source Thresholds for VOC emissions, SSPE2 calculations are not necessary.

5. Major Source Determination

Rule 2201 Major Source Determination:

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

Rule 2410 Major Source Determination:

As shown below in section VII.9 the project is not within 10 km of a Class I area and the PSD significant emission increase thresholds are not exceeded; therefore, the project is not subject to any PSD requirements and a PSD Major Source Determination is not required.

6. Baseline Emissions (BE)

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

Pursuant to District Rule 2201, BE = PE1 for:

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

otherwise,

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

Since S-1624-248, '249 and '250 are new emission units, BE = PE1 = 0.

a. Existing Equipment

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

The existing tanks are equipped with PV-vents which meets the requirements for achieved-in-practice BACT. Therefore, their BE=PE1.

The existing wells have vapor control, or, if their casing vents are closed, send their production to vapor controlled tanks which meets the requirements for achieved-in-practice BACT. Therefore, their BE=PE1.

7. SB 288 Major Modification

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

Since this source is not included in the 28 specific source categories specified in 40 CFR 51.165, the, increases in fugitive emissions are not included in the SB 288 Major Modification calculation.

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

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO_x	0	50,000	No
SO_x	0	80,000	No
PM_{10}	0	30,000	No
VOC	1394*	50,000	No

*non-fugitive emission units S-1624-248-0, '249-0 and '250-0

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

8. Federal Major Modification

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

Since this source is not included in the 28 specific source categories specified in 40 CFR 51.165, the increases in fugitive emissions are not included in the Federal Major Modification determination.

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

Step 1

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

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

Emission Increase = PAE – BAE - UBC

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

If there is no increase in design capacity or potential to emit, the PAE is equal to the annual emission rate at which the unit is projected to emit in any one year, selected by the operator, within 5 years after the unit resumes normal operation (10 years for existing units with an increase in design capacity or potential to emit). If detailed PAE are not provided, the PAE is equal to the PE2 for each permit unit.

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

The project's combined total emission increases are compared to the Federal Major Modification Thresholds in the following table.

S-1624-81-3, '82-3, '84-3, '97-4, '208-1, '244-1's post project emissions are fugitive and this source is not included in the 28 specific source categories specified in 40 CFR 51.165; therefore, only S-1624-248-0, '249-0 and '250-0's post project emissions are calculated.

Federal Major Modification Thresholds for Emission Increases			
Pollutant	Total Emissions Increases (lb/yr)	Thresholds (lb/yr)	Federal Major Modification?
NO_x*	0	0	No
VOC*	1394	0	Yes
PM_{10}	0	30,000	No
$PM_{2.5}$	0	20,000	No
SO_x	0	80,000	No

*If there is any emission increases in NO_x or VOC, this project is a Federal Major Modification and no further analysis is required.

Since there is an increase in VOC emissions, this project constitutes a Federal Major Modification, and no further analysis is required.

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

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

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

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

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

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

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

I. Project Location Relative to Class 1 Area

Because the project is not located within 10 km of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

II. Significance of Project Emission Increase Determination

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

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

The PSD Significant Emission Increase, does not include fugitive emissions, except for the specific source categories specified in 40 CFR 52.21 (b)(1)(i). This facility is not one of the specified source categories and only units S-1624-248, '249 and '250 have emissions which are not fugitive. Therefore, this determination only includes CO2e emissions from S-1624-248-0, '249-0 and '250-0.

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)						
	NO2	SO2	CO	PM	PM10	CO2e
Total PE from New and Modified Units	0	0	0	0	0	4095
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000
PSD Significant Emission Increase?	n	n	n	n	n	n

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

10. Quarterly Net Emissions Change (QNEC)

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

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

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

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

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

As seen in Section VII.C.2 above, the applicant is proposing to install new wells with a PE greater than 2 lb/day for VOC. BACT is triggered for VOC since the PEs are greater than 2 lbs/day.

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

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

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

AIPE = PE2 – HAPE

Where,
AIPE = Adjusted Increase in Permitted Emissions, (lb/day)
PE2 = Post-Project Potential to Emit, (lb/day)
HAPE = Historically Adjusted Potential to Emit, (lb/day)

HAPE = PE1 x (EF2/EF1)

Where,
PE1 = The emissions unit's PE prior to modification or relocation, (lb/day)
EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1
EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

AIPE = PE2 – (PE1 * (EF2 / EF1))

S-1624-81-3
Tank:

EF1 = 0.1 (relief valve), EF2 = 0.01 (99% vapor control)
AIPE = 0.6 – (91.9 * (0.01/0.1))
= 0.0 lb/day

S-1624-82-3
Tank:

EF1 = 0.1 (relief valve), EF2 = 0.01 (99% vapor control)
AIPE = 0.2 – (4.4 * (0.01/0.1))
= 0.0 lb/day

S-1624-84-3
Tank:

EF1 = 0.1 (relief valve), EF2 = 0.01 (99% vapor control)
AIPE = 0.2 – (91.9 * (0.01/0.1))
= 0.0 lb/day

No AIPE exceeds 2 lb/day, therefore BACT is not triggered

d. SB 288/Federal Major Modification

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

2. BACT Guideline

BACT Guideline 7.1.1, applies to the steam enhanced wells. [Thermally Enhanced Oil Recovery - Steam Drive Oil Wells] (See **Appendix E)**

BACT Guideline 7.3.1, applies to the new tanks. [Petroleum and Petrochemical Production - Fixed Roof Organic Liquid Storage or Processing Tank, < 5,000 bbl Tank capacity] (See **Appendix F)**

3. Top-Down BACT Analysis

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

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

Tanks S-1624-248-0, '249-0 and '250-0

- PV relief valve set to within 10% of maximum allowable pressure of the tank, or 99% control (waste gas incinerated in steam generator, heater treater, or other fired equipment and inspection and maintenance program; transfer of uncondensed vapors to gas pipeline or reinjection to formation (if appropriate wells are available).

TEOR Permits S-1624-97-4, '208-1 and '244-1

- Transfer of non-condensable vapors to pipeline

B. Offsets

1. Offset Applicability

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

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

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
SSPE2	na	na	na	na	>20,000
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	yes

2. Quantity of Offsets Required

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

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

Offsets Required (lb/year) = (Σ[PE2 – BE] + ICCE) x DOR, for all new or modified emissions units in the project,

Where,
PE2 = Post Project Potential to Emit, (lb/year)
BE = Baseline Emissions, (lb/year)
ICCE = Increase in Cargo Carrier Emissions, (lb/year)
DOR = Distance Offset Ratio, determined pursuant to Section 4.8

BE = PE1 for:

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

otherwise,

BE = HAE

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

Offsets Required (lb/year) = ([PE2 – BE] + ICCE) x DOR

PE2 (VOC) = 10,747 lb/year
BE (VOC) = 71,072 lb/year
ICCE = 0 lb/year

Offsets Required (lb/year) = ([10,747 – 71,072] + 0) x DOR
= 0 lb VOC/year

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

C. Public Notification

1. Applicability

Public noticing is required for:

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

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

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

As demonstrated in VII.C.7, this project does constitute a Federal Major Modification; therefore, public noticing for Federal Major Modification purposes is required.

b. PE > 100 lb/day

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

c. Offset Threshold

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

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO_X	na	na	20,000 lb/year	No
SO_X	na	na	54,750 lb/year	No
PM_{10}	na	na	29,200 lb/year	No
CO	na	na	200,000 lb/year	No
VOC	>20,000	>20,000	20,000 lb/year	No

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

d. SSIPE > 20,000 lb/year

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

SSIPE Public Notice Thresholds					
Pollutant	PE1	PE2	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO_X	na	na	na	20,000 lb/year	No
SO_X	na	na	na	20,000 lb/year	No
PM_{10}	na	na	na	20,000 lb/year	No
CO	na	na	na	20,000 lb/year	No
VOC	71,072	10,747	0	20,000 lb/year	No

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

2. Public Notice Action

As discussed above, public noticing is required for this project for Federal major Modification. 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 ATC for this equipment.

D. Daily Emission Limits (DELs)

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

Proposed Rule 2201 (DEL) Conditions:

S-1624-81-3:

- VOC fugitive emissions from the components in gas service on tank (if permit includes the vapor control system Insert: and tank vapor collection system) shall not exceed 0.6 lb/day. [District Rule 2201] N

S-1624-82-3 and '84-3:

- VOC fugitive emissions from the components in gas service on tank (if permit includes the vapor control system Insert: and tank vapor collection system) shall not exceed 0.2 lb/day. [District Rule 2201] N

S-1624-97-4:

- Volatile Organic Compound (VOC) emissions from the components associated with the TEOR system including the oil/gas separator tank shall not exceed 12.3 lb-VOC in any one day. [District Rule 2201] N

S-1624-208-1:

- Volatile Organic Compound (VOC) emissions from the components associated with the TEOR system including the oil/gas separator tank shall not exceed 6.2 lb-VOC in any one day. [District Rule 2201] N

S-1624-244-1:

- Tank shall operate at a constant level. [District Rule 2201]

- Volatile Organic Compound (VOC) emissions from the components associated with the TEOR system including the oil/gas separator tank shall not exceed 6.2 lb-VOC in any one day. [District Rule 2201] N

S-1624-248-0:

- Fluid throughput shall not exceed 500 barrels per day based on a monthly average. [District Rules 2201 and 4623] N
- This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.2 psia under all storage conditions. [District Rule 2201 and 4623] N
- VOC emission rate from the tank shall not exceed 1.0 lb/day. [District Rule 2201] N
- S-1624-249-0 and '250-0:
- Fluid throughput shall not exceed 50 barrels per day based on a monthly average. [District Rules 2201 and 4623] N
- This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.2 psia under all storage conditions. [District Rule 2201 and 4623] N
- VOC emission rate from the tank shall not exceed 1.4 lb/day. [District Rule 2201]

E. Compliance Assurance

1. Source Testing

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

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

3. Recordkeeping

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

S-1624-81-3, '82-3 and '84-3:

- Permittee shall maintain accurate component count for tank according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2c (Feb 1999), Screening Value Range emission factors < 10,000 ppmv. Permittee shall update

such records when new components are approved and installed. [District Rule 2201] N

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

S-1624-97-4 and '208-1:

- Permittee shall maintain records of the date and well identification where steam injection or well stimulation occurs. [District Rule 4401] N

- Permittee shall keep a monthly record of the average daily crude oil production (in bbl/day) from all operations within Kern County. [District Rule 4401] N

- Permittee shall maintain a current roster of wells connected to well vent vapor collection and control system, and such roster shall be made readily available for District inspection upon request. [District Rule 1070] N

- Permittee shall keep records of date of inspection or leak detection, method used for leak detection (i.e. visual, hydrocarbon detection instrument etc.), instrument calibration date, component leaking, leak magnitude (ppmv as methane, number of liquid drops per minute excluding seal lubricant), identification tag, date of repair, method of repair and post-repair measurement. Such records shall be maintained current and shall be made readily available for District inspection upon request. [District Rules 2201 and 4401] N

- Permittee shall maintain an accurate fugitive component count and resulting emissions calculated using emission factors from CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities", Table IV-2c(Feb 199), Screening Range Emission Factors for <10,000 ppmv (no leaks). [District Rule 2201] N

- All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070 and 4401] N

S-1624-244-1:

- Permittee shall maintain records of the date and well identification where steam injection or well stimulation occurs, current list of all thermally enhanced production wells associated with this operation, leak inspection results, and accurate fugitive component counts of components in gas service. [District Rules 2201 and 4401] N

- Permittee shall maintain records of concentration of total sulfur and VOCs in TEOR gas. [District Rules 2201 and 1070] N

- All records shall be maintained and made readily available for District inspection upon request for a period of five years. [District Rule 1070] N

S-1624-248-0, '249-0 and '250-0:

- Permittee shall maintain monthly records of average daily fluid throughput and shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rules 2201 and 4623] N

- All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4623] N

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or a source undergoing a Title I Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Section VIII above, this facility is a new major source and this project does constitute a Title I modification, therefore this requirement is applicable. PXP's compliance certification is included in Appendix I.

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to install a tanks and wells.

Since the project will provide tankage and wells to be used at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

Rule 2520 Federally Mandated Operating Permits

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

Rule 2530 Federally Enforceable Potential to Emit

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

facility has elected exemption from the requirements of Rule 2520 by ensuring actual emissions from the stationary source in every 12-month periods to not exceed the following: ½ the major source thresholds for NOx, VOCs, CO, and PM_{10}; 50 tons per year SO2; 5 tons per year of a single HAP; 12.5 tons per year of any combination of HAPs; 50 percent of any lesser threshold for a single HAP as the EPA may establish by rule; and 50 percent of the major source threshold for any other regulated air pollutant not listed in Rule 2530.

Rule 4001 New Source Performance Standards (NSPS)

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

There are no subparts of 40 CFR 60 that apply to TEOR systems. Therefore, the TEOR unit in this project is not subject to Rule 4001.

Therefore, no subparts are applicable to this project.

Rule 4101 Visible Emissions

Rule 4101 states that no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). Based on past inspections of the facility continued compliance is expected.

Rule 4102 Nuisance

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

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

The cancer risk for this project is shown below:

RMR Summary				
Categories	**500 BBL Storage Tanks (Units 248-0 thru 250-0)**	**TEOR Well Increase (Units 97-4, 208-1, & 244-1)**	**Project Totals**	**Facility Totals**
Prioritization Score	1.05	1.05	2.1	>1
Acute Hazard Index	0.00	0.00	0.00	0.74
Chronic Hazard Index	0.00	0.00	0.00	0.02
Maximum Individual Cancer Risk	**4.83E-07**	**2.1E-07**	6.93E-07	7.08E-06
T-BACT Required?	**No**	**No**		
Special Permit Conditions?	**No**	**No**		

Discussion of T-BACT

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the project is 6.93E-07, which is less than the 1 in a million threshold. In accordance with the District's Risk Management Policy, the project is approved without Toxic Best Available Control Technology (T-BACT).

Rule 4401 Steam-enhanced Crude Oil Production Well Vents

The purpose of this rule is to limit the VOC emissions from steam-enhanced crude oil production well vents. This rule is applicable to all steam-enhanced crude oil production wells and any associated vapor collection and control systems.

The proposed wells will operate with either open or closed casing vents. With the latter, produced fluids will be sent to storage tanks equipped with 99% vapor control. TEOR wells operated with open casing vents will vent to a vapor control system with 99% VOC control efficiency. Therefore the requirement of 99% control as required by Section 5.1 of the rule will be met. Permit conditions require compliance with the vapor control efficiency, I&M program, and record-keeping requirements of this rule. Compliance is expected.

Rule 4623, *Storage of Organic Liquids*

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

The tanks S-1624-81-3, '82-3, '84-3 are served by a vapor control system that has a control efficiency of at least 95%. This rule also requires the tank and tank vapor control system to be maintained in a leak-free condition. Leak-free is defined in the rule as no readings on a portable VOC detection device greater than 10,000 ppmv above background and no dripping of organic liquid at a rate of more than 3 drops per minute.

According to Section 4.4, tanks exclusively receiving and or storing organic liquids with a TVP less than 0.5 psia are exempt from this Rule except for complying with Sections 6.2, 6.3.6, 6.4 and 7.2. Therefore, the following conditions shall be placed on ATC S-1624-248:

- {2480} This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.2 psia under all storage conditions. [District Rules 2201 and 4623] N
- {2910} Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rule 4623] N
- {2482} The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287 e1 "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 4623] N
- {2483} For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA. [District Rule 4623] N
- {2911} The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. The permittee shall also conduct an API gravity testing. [District Rules 4623] N
- Permittee shall maintain monthly records of average daily fluid throughput and shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rules 2201 and 4623]
- 2913} The permittee shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rules 4623] N
- {2490} All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623] N

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

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

Proposed tanks S-1624-249-0 and '250-0 shall contain crude oil contents with TVP less than 0.5 psi and a throughput of less than 50 bbls of crude oil per day. Therefore, the following conditions shall be placed on the permit:

- Fluid throughput shall not exceed 50 barrels per day based on a monthly average.[District Rules 2201 and 4623] N

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

- All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 & 4623] N

Compliance with the requirements of this rule is expected.

California Health & Safety Code 42301.6 (School Notice)

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

California Environmental Quality Act (CEQA)

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

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

Greenhouse Gas (GHG) Significance Determination

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

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

District CEQA Findings

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15031 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATCs S-1624-81-3, '82-3, '84-3, '97-4, '208-1, '244-1, '248-0, '249-0 and '250-0 subject to the permit conditions on the attached draft ATCs in **Appendix K**.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-1624-81-3	3020-05S-D	73,920 gallons	$75
S-1624-82-3	3020-05S-E	181,860 gallons	$99
S-1624-84-3	3020-05S-D	73,920 gallons	$75
S-1624-97-4	3020-09S-A	400 wells	$1868
S-1624-208-1	3020-09S-A	200 wells	$934
S-1624-244-1	3020-09S-A	200 wells	$934
S-1624-248-0	30201-05S-C	21,000 gallons	$63
S-1624-249-0	30201-05S-C	21,000 gallons	$63
S-1624-250-0	30201-05S-C	21,000 gallons	$63

APPENDIX A
Quarterly Net Emissions Change (QNEC)

Permit #: S-1624-81-3	**Last Updated**
Facility: E&B NATURAL RESOURCES MGMT	01/16/2013 TORID

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	219.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	0.6
Quarterly Net Emissions Change (lb/Qtr)					
Q1:					-8331.0
Q2:					-8331.0
Q3:					-8331.0
Q4:					-8331.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Application Emissions

Permit #: S-1624-82-3	Last Updated
Facility: E&B NATURAL RESOURCES MGMT	01/16/2013 TORID

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	73.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	0.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:					-379.0
Q2:					-379.0
Q3:					-379.0
Q4:					-379.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-1624-84-3	**Last Updated**
Facility: E&B NATURAL RESOURCES MGMT	01/16/2013 TORID

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	73.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	0.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:					-8368.0
Q2:					-8368.0
Q3:					-8368.0
Q4:					-8368.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Application Emissions

Permit #: S-1624-97-4	Last Updated
Facility: E&B NATURAL RESOURCES MGMT	01/16/2013 TORID

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	4494.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	12.3
Quarterly Net Emissions Change (lb/Qtr)					
Q1:					851.0
Q2:					851.0
Q3:					851.0
Q4:					851.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-1624-208-1	**Last Updated**
Facility: E&B NATURAL RESOURCES MGMT	01/16/2013 TORID

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	2247.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	6.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:					517.0
Q2:					517.0
Q3:					517.0
Q4:					517.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-1624-244-1	**Last Updated**
Facility: E&B NATURAL RESOURCES MGMT	01/16/2013 TORID

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	2247.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	6.2
Quarterly Net Emissions Change (lb/Qtr)					
Q1:					281.0
Q2:					281.0
Q3:					281.0
Q4:					281.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-1624-248-0	**Last Updated**
Facility: E&B NATURAL RESOURCES MGMT	01/16/2013 TORID

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	378.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	1.0
Quarterly Net Emissions Change (lb/Qtr)					
Q1:					95.0
Q2:					95.0
Q3:					95.0
Q4:					95.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-1624-249-0	**Last Updated**
Facility: E&B NATURAL RESOURCES MGMT	01/16/2013 TORID

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	508.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	1.4
Quarterly Net Emissions Change (lb/Qtr)					
Q1:					127.0
Q2:					127.0
Q3:					127.0
Q4:					127.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Application Emissions

Permit #: S-1624-250-0	**Last Updated**
Facility: E&B NATURAL RESOURCES MGMT	01/16/2013 TORID

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	508.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	1.4
Quarterly Net Emissions Change (lb/Qtr)					
Q1:					127.0
Q2:					127.0
Q3:					127.0
Q4:					127.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Quarterly Net Emissions Change (QNEC)

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

QNEC = PE2 - PE1, where:

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

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

VOC Quarterly NEC [QNEC]					
	PE2 (lb/yr)	PE2 (lb/qtr)	PE1 (lb/yr)	PE1 (lb/qtr)	QNEC (lb/qtr)
S-1624-81-3	219	55	33,544	8386	-8,331
S-1624-82-3	73	18	1590	398	-379
S-1624-84-3	73	18	33,544	8386	-8,368
S-1624-97-4	4494	1,124	1090	273	851
S-1624-208-1	2247	562	180	45	517
S-1624-244-1	2247	562	1124	281	281
S-1624-248-0	378	95	0	0	95
S-1624-249-0	508	127	0	0	127
S-1624-250-0	508	127	0	0	127

APPENDIX B
Current PTOs

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-1624-81-2 **EXPIRATION DATE:** 06/30/2013

SECTION: NW04 **TOWNSHIP:** 28S **RANGE:** 27E

EQUIPMENT DESCRIPTION:
1,760 BBL FIXED ROOF CRUDE OIL PRODUCTION TANK WITH PV VENT #2GK32 (ANZA)

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. To maintain status as a small producer, permittee's crude oil production shall average less than 6000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rules 3020 & 4623]
3. When this tank is not operated (dormant for Rule 4623), all liquids shall be removed and the produced crude oil inlet line shall be physically disconnected. [District Rule 2080]
4. Results of TVP test on material introduced to this tank upon reactivation shall be submitted to the District within 60 days of recommencing operation of this tank. [District Rule 2080]
5. Permittee shall notify the District at least seven (7) calendar days prior to recommencing operation. [District Rule 1070]
6. Instead of testing each uncontrolled fixed roof tank, the permittee may conduct a TVP test of the organic liquid stored in a representative tank provided the requirements of Sections 6.2.1.1.1 through 6.2.1.1.5 of Rule 4623 are met. [District Rule 4623]
7. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623]
8. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rule 4623]
9. The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287 e1 "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 4623]
10. For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA. [District Rule 4623]
11. The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. The permittee shall also conduct an API gravity testing. [District Rule 4623]
12. Permittee shall submit the records of TVP and API gravity testing to the APCO within 45 days after the date of testing. The records shall include the tank identification number, Permit to Operate number, type of stored organic liquid, TVP and API gravity of the organic liquid, test methods used, and a copy of the test results. [District Rule 4623]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

13. 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]

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

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-1624-82-2 **EXPIRATION DATE:** 06/30/2013

SECTION: NW04 **TOWNSHIP:** 28S **RANGE:** 27E

EQUIPMENT DESCRIPTION:
4,330 BBL FIXED ROOF CRUDE OIL PRODUCTION TANK WITH PV VENT, WASH #2 (ANZA)

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. To maintain status as a small producer, permittee's crude oil production shall average less than 6000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rules 3020 & 4623]
3. When this tank is not operated (dormant for Rule 4623), all liquids shall be removed and the produced crude oil inlet line shall be physically disconnected. [District Rule 2080]
4. Results of TVP test on material introduced to this tank upon reactivation shall be submitted to the District within 60 days of recommencing operation of this tank. [District Rule 2080]
5. Permittee shall notify the District at least seven (7) calendar days prior to recommencing operation. [District Rule 1070]
6. Instead of testing each uncontrolled fixed roof tank, the permittee may conduct a TVP test of the organic liquid stored in a representative tank provided the requirements of Sections 6.2.1.1.1 through 6.2.1.1.5 of Rule 4623 are met. [District Rule 4623]
7. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623]
8. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rule 4623]
9. The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287 e1 "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 4623]
10. For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA. [District Rule 4623]
11. The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. The permittee shall also conduct an API gravity testing. [District Rule 4623]
12. Permittee shall submit the records of TVP and API gravity testing to the APCO within 45 days after the date of testing. The records shall include the tank identification number, Permit to Operate number, type of stored organic liquid, TVP and API gravity of the organic liquid, test methods used, and a copy of the test results. [District Rule 4623]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

13. 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]

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

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-1624-84-2 **EXPIRATION DATE:** 06/30/2013

SECTION: NW04 **TOWNSHIP:** 28S **RANGE:** 27E

EQUIPMENT DESCRIPTION:
1,760 BBL FIXED ROOF CRUDE OIL PRODUCTION TANK WITH PV VENT #2GK33 (ANZA)

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. To maintain status as a small producer, permittee's crude oil production shall average less than 6000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rules 3020 & 4623]
3. When this tank is not operated (dormant for Rule 4623), all liquids shall be removed and the produced crude oil inlet line shall be physically disconnected. [District Rule 2080]
4. Results of TVP test on material introduced to this tank upon reactivation shall be submitted to the District within 60 days of recommencing operation of this tank. [District Rule 2080]
5. Permittee shall notify the District at least seven (7) calendar days prior to recommencing operation. [District Rule 1070]
6. Instead of testing each uncontrolled fixed roof tank, the permittee may conduct a TVP test of the organic liquid stored in a representative tank provided the requirements of Sections 6.2.1.1.1 through 6.2.1.1.5 of Rule 4623 are met. [District Rule 4623]
7. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623]
8. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rule 4623]
9. The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287 e1 "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 4623]
10. For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA. [District Rule 4623]
11. The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. The permittee shall also conduct an API gravity testing. [District Rule 4623]
12. Permittee shall submit the records of TVP and API gravity testing to the APCO within 45 days after the date of testing. The records shall include the tank identification number, Permit to Operate number, type of stored organic liquid, TVP and API gravity of the organic liquid, test methods used, and a copy of the test results. [District Rule 4623]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

13. 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]

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

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-1624-97-3 **EXPIRATION DATE:** 06/30/2013

SECTION: 04 **TOWNSHIP:** 28S **RANGE:** 27E

EQUIPMENT DESCRIPTION:
THERMALLY ENHANCED OIL RECOVERY (TEOR) OPERATION SERVING 99 STEAM ENHANCED WELLS WITH GAS/LIQUID SEPARATORS, WATER-COOLED HEAT EXCHANGER, AND AIR-COOLED HEAT EXCHANGER (POSO)

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. TEOR operation is authorized at the following locations: Sections 20, 29, 32, 33 and 34 of T27S/R27E and Sections 4, 5, 8, 9, 16, 17, 20 and 21 of T28S, R27E. [District Rule 2201]
4. No more than 99 steam-enhanced oil recovery wells shall be operated at all locations authorized by this permit. [District Rule 2201]
5. Volatile Organic Compound (VOC) emissions from the components associated with the TEOR system including the oil/gas separator tank shall not exceed 4.5 lb-VOC in any one day. [District Rule 2201]
6. All new components added to the well vent vapor collection and control system shall be inspected for leaks in accordance with the requirements set forth in Rule 4401(12/14/06), Section 5.8.4. Components of the vapor collection and control system shall by inspected for leaks annually in accordance with the applicable requirements of Rule 4401. Operator shall maintain a leak inspection log in accordance with Rule 4401, Section 6.4. [District Rules 2201 and 4401]
7. The well vent vapor collection and control system shall be maintained in a leak-free condition. [District Rule 2201]
8. 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. [District Rule 2201]
9. Leaks shall be repaired in accordance with the applicable requirements of Rule 4401 (12/14/06). [District Rule 4401]
10. During the time any steam-enhanced crude oil production well is undergoing service or repair while the well is not producing, it shall be exempt from the emission control requirements of Rule 4401 (12/14/06). [District Rule 4401]
11. Total uncontrolled VOC emissions from all well vents shall be reduced by at least 99% (by weight). [District Rule 4401]
12. All components of well vent vapor collection and control systems shall be maintained in good working condition. [District Rule 4401]
13. Permittee shall maintain records of the date and well identification where steam injection or well stimulation occurs. [District Rule 4401]
14. To maintain status as a small producer, permittee's crude oil production shall average less than 6000 bbl/day on a monthly basis from all operations within Kern County. [District Rule 4401]

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

15. Permittee shall keep a monthly record of the average daily crude oil production (in bbl/day) from all operations within Kern County. [District Rule 4401]
16. Permittee shall maintain a current roster of wells connected to well vent vapor collection and control system, and such roster shall be made readily available for District inspection upon request. [District Rule 1070]
17. Permittee shall keep records of date of inspection or leak detection, method used for leak detection (i.e. visual, hydrocarbon detection instrument etc.), instrument calibration date, component leaking, leak magnitude (ppmv as methane, number of liquid drops per minute excluding seal lubricant), identification tag, date of repair, method of repair and post-repair measurement. Such records shall be maintained current and shall be made readily available for District inspection upon request. [District Rules 2201 and 4401]
18. Permittee shall maintain an accurate fugitive component count and resulting emissions calculated using emission factors from CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities", Table IV-2c(Feb 199), Screening Range Emission Factors for <10,000 ppmv (no leaks). [District Rule 2201]
19. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070 and 4401]
20. Effective on and after January 1, 2009, the permittee shall meet all applicable requirements of Sections 5.5 through 5.9, 6.1.5 through 6.1.8, 6.4 through 6.6 of Rule 4401 (12/14/06). [District Rule 4401]
21. The crude oil production from wells associated with this permit unit shall not lie within 1,000 feet of an air injection well used for in-situ combustion. [District Rule 4407]

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-1624-208-0 **EXPIRATION DATE:** 06/30/2013

SECTION: NW14 **TOWNSHIP:** 27S **RANGE:** 27E

EQUIPMENT DESCRIPTION:
TEOR OPERATION WELL VENT VAPOR CONTROL SYSTEM, INCLUDING UP TO 16 STEAM ENHANCED WELLS, AND COMPRESSED VAPOR PIPING TO DISTRICT AUTHORIZED DISPOSAL/INCINERATION DEVICES (POSO)

PERMIT UNIT REQUIREMENTS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. Permittee shall maintain a current roster of wells connected to the casing collection system, and such roster shall be made readily available for District inspection upon request. [District Rule 1070]
3. Total uncontrolled VOC emissions from all well vents shall be reduced by at least 99%. [District Rule 4401]
4. All components of well vent vapor collection and control systems shall be maintained in good working condition. [District Rule 4401]
5. Leaks shall be inspected and repaired as specified in Rule 4401. [District Rule 4401]
6. The number of leaks from the vapor collection and control system, including condensate handling, shall not exceed the number allowed by Rule 4401 at any one time. [District Rule 4401]

San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-1624-244-0 **EXPIRATION DATE:** 06/30/2013

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

EQUIPMENT DESCRIPTION:
TEOR OPERATION WITH UP TO 100 STEAM-ENHANCED PRODUCTION WELLS WITH CLOSED CASING VENTS

PERMIT UNIT REQUIREMENTS

1. Steam enhanced wells authorized by this permit shall only be located in Sections 20, 28, and 29, T27S, R27E. [District Rule 2201]
2. Produced fluids shall only be routed to vapor-controlled vessels achieving 99% capture efficiency. [District Rule 2201]
3. Maximum VOC content of produced gas from TEOR operation shall not exceed 10% by weight. [District Rule 2201]
4. Casing vent valves shall be closed and plugged. [District Rules 2201 and 4401]
5. Permittee shall implement an I&M program consistent with the requirements of Rule 4401 applicable to well head fugitive emissions components handling vapor . [District Rule 4401]
6. Permittee shall maintain records of the date and well identification where steam injection or well stimulation occurs, current list of all thermally enhanced production wells associated with this operation, leak inspection results, and accurate fugitive component counts of components in gas service. [District Rules 2201 and 4401]
7. Permittee shall determine VOC content of TEOR gas upon startup and annually thereafter. Gas analysis shall be performed using ASTM D-3588. [District Rule 2201]
8. Permittee shall determine sulfur content of TEOR gas upon startup and quarterly thereafter. Gas analysis shall be performed using ASTM method D3246 or double GC for H2S and mercaptans. [District Rules 1081 and 2201]
9. Permittee shall maintain records of concentration of total sulfur and VOCs in TEOR gas. [District Rules 2201 and 1070]
10. All records shall be maintained and made readily available for District inspection upon request for a period of five years. [District Rule 1070]
11. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
12. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
13. Formerly S-6983-24.

APPENDIX C
PE1 Calculations

E&B Natural Resources Management, Inc.
Arroyo Lease

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1624-81-0
facility tank I.D.	#2GK32
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.5
liquid bulk storage temperature, Tb (°F)	100
is this a constant-level tank? (yes, no)	No
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	28
capacity of tank (bbl)	1,760
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	9
are the roof and shell the same color? (yes,no)	yes
For roof: color (1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White)	4
condition (1: Good, 2: Poor)	1
------This row only used if shell is different color from roof------	4
------This row only used if shell is different color from roof------	1

1,758

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		1,760
maximum annual fluid throughput (bbl)		642,400
------This row only used if flashing losses occur in this tank------		1,760
------This row only used if flashing losses occur in this tank------		642,400
molecular weight, Mw (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, Tax (°F)		77.65
daily minimum ambient temperature, Tan (°F)		53.15
daily total solar insulation factor, I (Btu/ft^2-day)		1648.9
atmospheric pressure, Pa (psia)		14.47
(psia)	99.0	0.9259
(psia)	88.2	0.6653
water vapor pressure at average liquid surface temperature (Tla), Pva (psia)	93.6	0.7903
roof outage, Hro (feet)		0.2917
vapor space volume, Vv (cubic feet)		4489.86
paint factor, alpha		0.68
vapor density, Wv (lb/cubic foot)		0.0084
daily vapor temperature range, delta Tv (degrees Rankine)		49.04
vapor space expansion factor, Ke		0.1032

Results	lb/year	lb/day
Standing Storage Loss	1,424	3.90
Working Loss	32,120	88.00
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	33,544	91.9

Summary Table	
Permit Number	S-1624-81-0
Facility Tank I.D.	#2GK32
Tank capacity (bbl)	1,760
Tank diameter (ft)	28
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	1,760
Maximum Annual Fluid Throughput (bbl/year)	642,400
Maximum Daily Oil Throughput (bbl/day)	1,760
Maximum Annual Oil Throughput (bbl/year)	---
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	91.9
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	33,544

E&B Natural Resources Management, Inc.
Arroyo Lease

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1624-82-0
facility tank I.D.	#2
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.5
liquid bulk storage temperature, Tb (°F)	100
is this a constant-level tank? (yes, no)	yes
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	Yes
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	38.6
capacity of tank (bbl)	4,330
conical or dome roof? (c, d)	c
shell height of tank (feet)	21
average liquid height (feet)	19
are the roof and shell the same color? (yes,no)	yes
For roof: color (1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White)	4
condition (1: Good, 2: Poor)	1
------This row only used if shell is different color from roof------	4
------This row only used if shell is different color from roof------	1

4,386

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)	4,330	100
maximum annual fluid throughput (bbl)	17,320	17,320
maximum daily oil throughput (bbl)(used to calculate flashing loss)		100
maximum annual oil throughput (bbl)(used to calculate flashing loss)		36,500
molecular weight, Mw (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, Tax (°F)		77.65
daily minimum ambient temperature, Tan (°F)		53.15
daily total solar insulation factor, I (Btu/ft^2-day)		1648.9
atmospheric pressure, Pa (psia)		14.47
(psia)	99.0	0.9259
(psia)	88.2	0.6653
water vapor pressure at average liquid surface temperature (Tla), Pva (psia)	93.6	0.7903
roof outage, Hro (feet)		0.4021
vapor space volume, Vv (cubic feet)		2810.95
paint factor, alpha		0.68
vapor density, Wv (lb/cubic foot)		0.0084
daily vapor temperature range, delta Tv (degrees Rankine)		49.04
vapor space expansion factor, Ke		0.1032

Results	lb/year	lb/day
Standing Storage Loss	891	2.44
Working Loss	N/A	N/A
Flashing Loss	699	1.91
Total Uncontrolled Tank VOC Emissions	1,590	4.4

Summary Table	
Permit Number	**S-1624-82-0**
Facility Tank I.D.	**#2**
Tank capacity (bbl)	**4,330**
Tank diameter (ft)	**38.6**
Tank shell height (ft)	**21**
Conical or Dome Roof	**Conical**
Maximum Daily Fluid Throughput (bbl/day)	**100**
Maximum Annual Fluid Throughput (bbl/year)	**17,320**
Maximum Daily Oil Throughput (bbl/day)	**100**
Maximum Annual Oil Throughput (bbl/year)	**36,500**
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	**4.4**
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	**1,590**

E&B Natural Resources Management, Inc.
Arza Lease

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1624-84-0
facility tank I.D.	#2GK33
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.5
liquid bulk storage temperature, Tb (°F)	100
is this a constant-level tank? (yes, no)	No
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	no
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	28
capacity of tank (bbl)	1,760
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	9
are the roof and shell the same color? (yes,no)	yes
For roof: color (1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White)	4
condition (1: Good, 2: Poor)	1
------This row only used if shell is different color from roof------	4
------This row only used if shell is different color from roof------	1

1,758

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		1,760
maximum annual fluid throughput (bbl)		642,400
------This row only used if flashing losses occur in this tank------		1,760
------This row only used if flashing losses occur in this tank------		642,400
molecular weight, Mw (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, Tax (°F)		77.65
daily minimum ambient temperature, Tan (°F)		53.15
daily total solar insulation factor, I (Btu/ft^2-day)		1648.9
atmospheric pressure, Pa (psia)		14.47
(psia)	99.0	0.9259
(psia)	88.2	0.6653
water vapor pressure at average liquid surface temperature (Tla), Pva (psia)	93.6	0.7903
roof outage, Hro (feet)		0.2917
vapor space volume, Vv (cubic feet)		4489.86
paint factor, alpha		0.68
vapor density, Wv (lb/cubic foot)		0.0084
daily vapor temperature range, delta Tv (degrees Rankine)		49.04
vapor space expansion factor, Ke		0.1032

Results	lb/year	lb/day
Standing Storage Loss	1,424	3.90
Working Loss	32,120	88.00
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	33,544	91.9

Summary Table	
Permit Number	**S-1624-84-0**
Facility Tank I.D.	**#2GK33**
Tank capacity (bbl)	**1,760**
Tank diameter (ft)	**28**
Tank shell height (ft)	**16**
Conical or Dome Roof	**Conical**
Maximum Daily Fluid Throughput (bbl/day)	**1,760**
Maximum Annual Fluid Throughput (bbl/year)	**642,400**
Maximum Daily Oil Throughput (bbl/day)	**1,760**
Maximum Annual Oil Throughput (bbl/year)	**---**
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	**91.9**
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	**33,544**

E&B Natural Resources Management, Inc.
CGSC Component Counts
Fugitive Emission Calculations

	Number of Components	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others		Total	
		Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas
S-1624-97	99 TEOR Wells (Poso)		194		388		1,940						97	-	2,619
S-1624-208	16 TEOR Wells (McVan)		32		64		320						16	-	432
S-1634-244	100 TEOR - (New Hope East)		200		400		2,000						100	-	2,700

Emission Factors - (AP-42: CAPCOA Table IV-2c)	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others	
	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas
<10,000 ppmv - kg/hr/source	2.40E-05	2.80E-05	1.90E-05	3.50E-05	1.00E-05	1.20E-05	2.65E-04	9.96E-04	1.80E-05	2.40E-05	1.31E-04	1.47E-04
>10,000 ppmv - kg/hr/source	2.60E-01	6.10E-02	7.07E-02	1.39E-01	2.34E-02	2.59E-02	8.90E-02	8.90E-02	2.22E-02	5.49E-02	7.10E-03	1.38E-01
<10,000 ppmv - lb/yr/source	0.46	0.54	0.37	0.67	0.19	0.23	5.11	19.19	0.35	0.46	2.52	2.83
>10,000 ppmv - lb/yr/source	5,010.72	1,175.59	1,362.53	2,671.10	450.96	499.14	1,715.21	1,715.21	427.84	1,058.03	136.83	2,651.83
<10,000 ppmv - lb/yr/source	1.267E-03	1.478E-03	1.003E-03	1.848E-03	5.280E-04	6.336E-04	1.399E-02	5.259E-02	9.504E-04	1.267E-03	6.917E-03	7.762E-03
>10,000 ppmv - lb/yr/source	1.373E+01	3.221E+00	3.733E+00	7.318E+00	1.236E+00	1.368E+00	4.699E+00	4.699E+00	1.172E+00	2.899E+00	3.749E-01	7.265E+00

	Emissions - lb/year	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others		Total - lb/year			
		Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Total	Tons/yr
S-1624-97	99 TEOR Wells (Poso)	-	105	-	262	-	449	-	-	-	-	-	275	-	1,090	1,090	0.54
S-1624-208	16 TEOR Wells (McVan)	-	17	-	43	-	74	-	-	-	-	-	45	-	180	180	0.09
S-1634-244	100 TEOR - (New Hope East)	-	108	-	270	-	463	-	-	-	-	-	283	-	1,124	1,124	0.56

	Emissions - lb/day	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others		Total - lb/day			
		Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Total	Tons/yr
S-1624-97	99 TEOR Wells (Poso)	-	0.29	-	0.72	-	1.23	-	-	-	-	-	0.75	-	2.99	3	0.00
S-1624-208	16 TEOR Wells (McVan)	-	0.05	-	0.12	-	0.20	-	-	-	-	-	0.12	-	0.49	0	0.00
S-1634-244	100 TEOR - (New Hope East)	-	0.30	-	0.74	-	1.27	-	-	-	-	-	0.78	-	3.08	3	0.00
																	0.00

Emission Factors - (AP-42: CAPCOA Table IV-2c)	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others	
	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas
<10,000 ppmv - lb/day/source												
>10,000 ppmv - lb/day/source												
<10,000 ppmv - lb/yr/source	2.447E+01	2.855E+01	1.937E+01	3.569E+01	1.020E+01	1.224E+01	2.702E+02	1.016E+03	1.835E+01	2.447E+01	1.336E+02	1.499E+02
>10,000 ppmv - lb/yr/source	2.651E+05	6.220E+04	7.209E+04	1.413E+05	2.386E+04	2.641E+04	9.075E+04	9.075E+04	2.264E+04	5.598E+04	7.240E+03	1.403E+05

APPENDIX D
PE2 Calculations

E&B Natural Resources

Tanks S-1624-81-3, '82-3 & '84-3

Fugitive Emissions Using Screening Emission Factors

California Implementation Guidelines for Estimating Mass Emissions
of Fugitive Hydrocarbon Leaks at Petroleum Facilities
Table IV-2c. Oil and Gas Production
Screening Value Ranges Emission Factors

Percentage of components in vapor service with ≥ 10,000 ppmv leaks allowed?	0 %
Percentage of components in liquid service with ≥ 10,000 ppmv leaks allowed?	0 %
Weight percentage of VOC in the total organic compounds in gas?	100 %
Weight percentage of VOC in the total organic compounds in oil?	100 %

Equipment Type	Service	Component Count	Total allowable leaking components	Screening Value EF TOC < 10,000 ppmv (lb/day/source)	Screening Value EF TOC ≥ 10,000 ppmv (lb/day/source)	VOC emissions (lb/day)
Valves	Gas/Light Liquid	16	0	1.852E-03	7.333E+00	0.03
	Light Crude Oil	0	0	1.005E-03	3.741E+00	0.00
	Heavy Crude Oil	0	0	7.408E-04	N/A*	0.00
Pump Seals	Gas/Light Liquid	0	0	5.270E-02	4.709E+00	0.00
	Light Crude Oil	0	0	1.402E-02	4.709E+00	0.00
	Heavy Crude Oil	0	0	N/A	N/A	N/A
Others	Gas/Light Liquid	15	0	7.778E-03	7.281E+00	0.12
	Light Crude Oil	0	0	6.931E-03	3.757E-01	0.00
	Heavy Crude Oil	0	0	3.016E-03	N/A*	0.00
Connectors	Gas/Light Liquid	90	0	6.349E-04	1.370E+00	0.06
	Light Crude Oil	0	0	5.291E-04	1.238E+00	0.00
	Heavy Crude Oil	0	0	4.233E-04	4.233E-04	0.00
Flanges	Gas/Light Liquid	22	0	1.482E-03	3.228E+00	0.03
	Light Crude Oil	0	0	1.270E-03	1.376E+01	0.00
	Heavy Crude Oil	0	0	1.217E-03	N/A*	0.00
Open-ended Lines	Gas/Light Liquid	0	0	1.270E-03	2.905E+00	0.00
	Light Crude Oil	0	0	9.524E-04	1.175E+00	0.00
	Heavy Crude Oil	0	0	7.937E-04	3.762E+00	0.00

* Emission factor not available. All components from equipment type and service will be assessed as < 10,000 ppmv

Total VOC Emissions = 0.24 lb/day

E&B Natural Resources

VRU S-1624-81-3

Fugitive Emissions Using Screening Emission Factors

California Implementation Guidelines for Estimating Mass Emissions
of Fugitive Hydrocarbon Leaks at Petroleum Facilities
Table IV-2c. Oil and Gas Production
Screening Value Ranges Emission Factors

Percentage of components in vapor service with ≥ 10,000 ppmv leaks allowed?	0 %
Percentage of components in liquid service with ≥ 10,000 ppmv leaks allowed?	0 %
Weight percentage of VOC in the total organic compounds in gas?	100 %
Weight percentage of VOC in the total organic compounds in oil?	100 %

Equipment Type	Service	Component Count	Total allowable leaking components	Screening Value EF TOC < 10,000 ppmv (lb/day/source)	Screening Value EF TOC ≥ 10,000 ppmv (lb/day/source)	VOC emissions (lb/day)
Valves	Gas/Light Liquid	30	0	1.852E-03	7.333E+00	0.06
	Light Crude Oil	0	0	1.005E-03	3.741E+00	0.00
	Heavy Crude Oil	0	0	7.408E-04	N/A*	0.00
Pump Seals	Gas/Light Liquid	4	0	5.270E-02	4.709E+00	0.21
	Light Crude Oil	0	0	1.402E-02	4.709E+00	0.00
	Heavy Crude Oil	0	0	N/A	N/A	N/A
Others	Gas/Light Liquid	5	0	7.778E-03	7.281E+00	0.04
	Light Crude Oil	0	0	6.931E-03	3.757E-01	0.00
	Heavy Crude Oil	0	0	3.016E-03	N/A*	0.00
Connectors	Gas/Light Liquid	100	0	6.349E-04	1.370E+00	0.06
	Light Crude Oil	0	0	5.291E-04	1.238E+00	0.00
	Heavy Crude Oil	0	0	4.233E-04	4.233E-04	0.00
Flanges	Gas/Light Liquid	20	0	1.482E-03	3.228E+00	0.03
	Light Crude Oil	0	0	1.270E-03	1.376E+01	0.00
	Heavy Crude Oil	0	0	1.217E-03	N/A*	0.00
Open-ended Lines	Gas/Light Liquid	0	0	1.270E-03	2.905E+00	0.00
	Light Crude Oil	0	0	9.524E-04	1.175E+00	0.00
	Heavy Crude Oil	0	0	7.937E-04	3.762E+00	0.00

* Emission factor not available. All components from equipment type and service will be assessed as < 10,000 ppmv

Total VOC Emissions = 0.40 lb/day

E&B Natural Resources Management, Inc.
CGSC Component Counts
Fugitive Emission Calculations

	Number of Components	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others		Total	
		Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas
S-1624-97	400 TEOR Wells (Poso)		800		1,600		8,000						400	-	10,800
S-1624-208	200 TEOR Wells (McVan)		400		800		4,000						200	-	5,400
S-1634-244	200 TEOR - (New Hope East)		400		800		4,000						200	-	5,400

Emission Factors - (AP-42: CAPCOA Table IV-2c)	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others	
	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas
<10,000 ppmv - kg/hr/source	2.40E-05	2.80E-05	1.90E-05	3.50E-05	1.00E-05	1.20E-05	2.65E-04	9.96E-04	1.80E-05	2.40E-05	1.31E-04	1.47E-04
>10,000 ppmv - kg/hr/source	2.60E-01	6.10E-02	7.07E-02	1.39E-01	2.34E-02	2.59E-02	8.90E-02	8.90E-02	2.22E-02	5.49E-02	7.10E-03	1.38E-01
<10,000 ppmv - lb/yr/source	0.46	0.54	0.37	0.67	0.19	0.23	5.11	19.19	0.35	0.46	2.52	2.83
>10,000 ppmv - lb/yr/source	5,010.72	1,175.59	1,362.53	2,671.10	450.96	499.14	1,715.21	1,715.21	427.84	1,058.03	136.83	2,651.83
<10,000 ppmv - lb/yr/source	1.267E-03	1.478E-03	1.003E-03	1.848E-03	5.280E-04	6.336E-04	1.399E-02	5.259E-02	9.504E-04	1.267E-03	6.917E-03	7.762E-03
>10,000 ppmv - lb/yr/source	1.373E+01	3.221E+00	3.733E+00	7.318E+00	1.236E+00	1.368E+00	4.699E+00	4.699E+00	1.172E+00	2.899E+00	3.749E-01	7.265E+00

	Emissions - lb/year	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others		Total - lb/year			
		Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Total	Tons/yr
S-1624-97	400 TEOR Wells (Poso)	-	432	-	1,079	-	1,850	-	-	-	-	-	1,133	-	4,494	4,494	2.25
S-1624-208	200 TEOR Wells (McVan)	-	216	-	540	-	925	-	-	-	-	-	567	-	2,247	2,247	1.12
S-1634-244	200 TEOR - (New Hope East)	-	216	-	540	-	925	-	-	-	-	-	567	-	2,247	2,247	1.12

	Emissions - lb/day	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others		Total - lb/day			
		Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Total	Tons/yr
S-1624-97	400 TEOR Wells (Poso)	-	1.18	-	2.96	-	5.07	-	-	-	-	-	3.10	-	12.31	12	0.01
S-1624-208	200 TEOR Wells (McVan)	-	0.59	-	1.48	-	2.53	-	-	-	-	-	1.55	-	6.16	6	0.00
S-1634-244	200 TEOR - (New Hope East)	-	0.59	-	1.48	-	2.53	-	-	-	-	-	1.55	-	6.16	6	0.00
																	0.01

Emission Factors - (AP-42: CAPCOA Table IV-2c)	Flange		Valve		Threaded Connection		Pump Seals		Open Ended Lines		Others	
	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas	Light Oil	Gas
<10,000 ppmv - lb/day/source												
>10,000 ppmv - lb/day/source												
<10,000 ppmv - lb/yr/source	2.447E+01	2.855E+01	1.937E+01	3.569E+01	1.020E+01	1.224E+01	2.702E+02	1.016E+03	1.835E+01	2.447E+01	1.336E+02	1.499E+02
>10,000 ppmv - lb/yr/source	2.651E+05	6.220E+04	7.209E+04	1.413E+05	2.386E+04	2.641E+04	9.075E+04	9.075E+04	2.264E+04	5.598E+04	7.240E+03	1.403E+05

S-1624-2498-0

E&B Natural Resources Management, Inc.
Tyson Lease, Wash Tank

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1624-XX
facility tank I.D.	Wash
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.2
liquid bulk storage temperature, Tb (°F)	100
is this a constant-level tank? {yes, no}	Yes
will flashing losses occur in this tank (only if first-line tank)? {yes, no}	Yes
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	21.1
capacity of tank (bbl)	500
conical or dome roof? {c, d}	c
shell height of tank (feet)	8
average liquid height (feet)	6
are the roof and shell the same color? {yes,no}	yes
For roof: color {1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White}	4
condition {1: Good, 2: Poor}	1
------This row only used if shell is different color from roof------	4
------This row only used if shell is different color from roof------	1

499

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		500
maximum annual fluid throughput (bbl)		182,500
maximum daily oil throughput (bbl)(used to calculate flashing loss)		100
maximum annual oil throughput (bbl)(used to calculate flashing loss)		36,500
molecular weight, Mw (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, Tax (°F)		77.65
daily minimum ambient temperature, Tan (°F)		53.15
daily total solar insulation factor, I (Btu/ft^2-day)		1648.9
atmospheric pressure, Pa (psia)		14.47
(psia)	99.0	0.9259
(psia)	88.2	0.6653
water vapor pressure at average liquid surface temperature (Tla), Pva (psia)	93.6	0.7903
roof outage, Hro (feet)		0.2198
vapor space volume, Vv (cubic feet)		776.19
paint factor, alpha		0.68
vapor density, Wv (lb/cubic foot)		0.0034
daily vapor temperature range, delta Tv (degrees Rankine)		49.04
vapor space expansion factor, Ke		0.1032

Results	lb/year	lb/day
Standing Storage Loss	98	0.27
Working Loss	N/A	N/A
Flashing Loss	280	0.77
Total Uncontrolled Tank VOC Emissions	378	1.04

Summary Table	
Permit Number	S-1624-XX
Facility Tank I.D.	Wash
Tank capacity (bbl)	500
Tank diameter (ft)	21.1
Tank shell height (ft)	8
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	500
Maximum Annual Fluid Throughput (bbl/year)	182,500
Maximum Daily Oil Throughput (bbl/day)	100
Maximum Annual Oil Throughput (bbl/year)	36,500
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	1.0
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	378

S-1624-249-0 & 250-0

E&B Natural Resources Management, Inc.
Tyson Lease - Stock Tank

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1624-XX
facility tank I.D.	Stock
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.2
liquid bulk storage temperature, Tb (°F)	100
is this a constant-level tank? (yes, no)	No
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	No
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	21.1
capacity of tank (bbl)	500
conical or dome roof? (c, d)	c
shell height of tank (feet)	8
average liquid height (feet)	5
are the roof and shell the same color? (yes,no)	yes
For roof: color (1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White)	4
condition (1: Good, 2: Poor)	1
------This row only used if shell is different color from roof------	4
------This row only used if shell is different color from roof------	1

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

Calculated Values	A	B
daily maximum ambient temperature, Tax (°F)		77.65
daily minimum ambient temperature, Tan (°F)		53.15
daily total solar insulation factor, I (Btu/ft^2-day)		1648.9
atmospheric pressure, Pa (psia)		14.47
(psia)	99.0	0.9259
(psia)	88.2	0.6653
water vapor pressure at average liquid surface temperature (Tla), Pva (psia)	93.6	0.7903
roof outage, Hro (feet)		0.2198
vapor space volume, Vv (cubic feet)		1125.86
paint factor, alpha		0.68
vapor density, Wv (lb/cubic foot)		0.0034
daily vapor temperature range, delta Tv (degrees Rankine)		49.04
vapor space expansion factor, Ke		0.1032

Results	lb/year	lb/day
Standing Storage Loss	143	0.39
Working Loss	365	1.00
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	508	1.39

Summary Table	
Permit Number	S-1624-XX
Facility Tank I.D.	Stock
Tank capacity (bbl)	500
Tank diameter (ft)	21.1
Tank shell height (ft)	8
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	50
Maximum Annual Fluid Throughput (bbl/year)	18,250
Maximum Daily Oil Throughput (bbl/day)	50
Maximum Annual Oil Throughput (bbl/year)	---
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	1.4
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	508

499

APPENDIX E
BACT Guideline 7.1.1

Back

Best Available Control Technology (BACT) Guideline 7.1.1
Last Update: 3/11/1994

Thermally Enhanced Oil Recovery - Steam Drive Oil Wells**

Pollutant	Achieved in Practice or in the SIP	Technologically Feasible	Alternate Basic Equipment
PM10		1. Vapor control system with either a) Scrubber with 50% PM10 removal, or b) Non-condensables incinerated at steam generator, incinerator, or equal and having a vapor sulfur content no greater than 0.2gr S/100 dscf	1. Vapor control system with either a) Transfer of noncondensable vapors to gas pipeline or b) Re-injection to formation
SOx		1. Vapor control system with either a) Scrubber with 95% sulfur removal, or b) Non-condensables incinerated at steam generator, incinerator, or equal and having a vapor sulfur content no greater than 0.2gr S/100 dscf	1. Vapor control system with either a) Transfer of noncondensable vapors to gas pipeline or b) Re-injection to formation
VOC	1. Vapor control system and inspection and maintenance program with either a) Non-condensables balanced casing vent system tied into tank vapor control system or b) Noncondensables incinerated at steam generator, incinerator, or equal		1. Vapor control system with either a) Transfer of noncondensable vapors to gas pipeline or b) Re-injection to formation

*** Control Options wording clarified 10/1/02. No change to any options or limits.*

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in s a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is requried for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

This is a Summary Page for this Class of Source. For background information, see Permit Specific BACT Determinations on Details Page.

APPENDIX F
BACT Guideline 7.3.1

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 7.3.1*

Last Update 10/1/2002

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

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

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

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in s a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

***This is a Summary Page for this Class of Source**

APPENDIX G
Top-Down BACT Analysis

Tanks S-1624-248-0, '249-0 and '250-0

Top Down BACT Analysis

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

Step 1 - Identify All Possible Control Technologies

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

Technologically feasible:

99% control (waste gas incinerated in steam generator, heater treater, or other fired equipment and inspection and maintenance program; transfer of uncondensed vapors to gas pipeline or reinjection to formation (if appropriate wells are available).

Achieved in Practice:

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

Step 2 - Eliminate Technologically Infeasible Options

All of the above identified control options are technologically feasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

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

Step 4 - Cost Effectiveness Analysis

The annualized capital cost is

$AP = (P) \{[(i) (1 + i)^n]/[(1 + i)^n - 1]\}$, where
AP = Equivalent Annual Capital Cost of Control Equip.
P = Present value of the control equipment, including installation cost. $48,654 + $18,500 + $15,000 = $82,154 (see cost information in Appendix H)
i = interest rate (use 10% per policy)
n = equipment life (assume 10 years per policy)

$AP= (P) \{[(0.1) (1 + 0.1)^{10}]/[(1 + 0.1)^{10} - 1]\}$
AP= ($82,154) x (0.16274) = $13,370/year

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

Tons/yr = (378 + 508 +508 lb/yr)/2000 lb/ton = 0.70 tons/yr

Annualized cost = $13,370/yr/0.70 tons/yr
= $19,100/ton

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

Step 5 - Select BACT

PV relief valve set to within 10% of maximum allowable pressure of the tank, or

99% control (waste gas incinerated in steam generator, heater treater, or other fired equipment and inspection and maintenance program; transfer of uncondensed vapors to gas pipeline or reinjection to formation (if appropriate wells are available).

Top Down BACT Analysis for TEOR Permits S-1624-97-4, '208-1 and '244-1:

a. Step 1 - Identify all control technologies

The SJVUAPCD BACT Clearinghouse guideline 7.1.1, identifies achieved in practice BACT for VOC emissions from thermally enhanced oil recovery (steam drive wells) as follows:

- vapor control system and inspection and maintenance program with either a) non-condensables balanced casing vent system tied into vapor control system or b) non-condensable incinerated at steam generator, incinerator, or equal

The guideline also identified the following as alternate basic equipment BACT:

- vapor control system with either a) transfer of non-condensable vapors to pipeline or b) re-injection to formation

No other control alternatives are identified for this class and category of source.

b. Step 2 - Eliminate technologically infeasible options

All options are feasible.

c. Step 3 - Rank remaining options by control effectiveness

1. vapor control system with either a) transfer of non-condensable vapors to pipeline or b) re-injection to formation

2. vapor control system and inspection and maintenance program with either a) non-condensables balanced casing vent system tied into vapor control system or b) non-condensable incinerated at steam generator, incinerator, or equal

d. Step 4 - Cost Effectiveness Analysis

The applicant has proposed the most effective control in the ranking list from Step 3. Therefore, per SJVUAPCD BACT policy, the cost effectiveness analysis is not required.

e. Step 5 - Select BACT

BACT for VOC emissions from the TEOR system will be transfer of non-condensable vapors to pipeline. The applicant proposes these controls. Therefore, BACT for VOC emissions is satisfied.

APPENDIX H
BACT Cost Information

4201 Armour Avenue
Bakersfield, CA 93308-4551
Office (661) 322-0153
Fax (661) 322-6469

E B Resources Natural Resources **2/06/12**
34740 Merced Ave.
Bakersfield, CA 93308
Subject: Vapor Recovery Units
Att: Greg Youngblood

Dear Mr. Youngblood,
Thank you for the opportunity to supply pricing on your VRU project.

We are offering skid mounted units with 40 HP, compressors, motors, belt drives, oilers, separator, pumps complete as your existing units, except with a second compressor & motor mounted on skid for full back up protection.

Price: One complete unit $ 48,654.00 plus frt.

If you need additional information, please contact us.

Respectfully

Doug Schofield Sales

Mariott Welding Inc.

Estimated labor cost to fabricate and install six inch vapor recovery on wash tank & three stock tanks.

Including setting vru compressor, scrubbers & discharge line to heater.

Labor $18,500

Dennis Mariott

12422 JOMANI RD
BAKERSFIELD, CA 93312
LICENSE #764356
OFFICE (661)750-1517
FAX (661) 829-1866

"Let Us Check Your Shorts"

Date: February 10, 2012

Submitted To:

Greg Youngblood
E&B Natural Resources

Work To Be Performed At:

Vapor Recovery Unit

We hereby propose to furnish the materials and perform the labor necessary for the completion of:

Panel, disconnect, underground and labor for the vapor recovery unit

All material is guaranteed to be as specified, and the above work to be performed in accordance with the drawings and specifications submitted for above work, and completed in a substantial workmanlike manner for the sum of **Fifteen thousand thousand dollars ($ 15,000.00)** with payments to be made as follows: **progress payments**

Respectfully Submitted,

Gold Coast Electric, Inc.

Michael C. Heinemann
President

Any alteration or deviation from above specifications involving extra costs will be executed only upon written order, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents, or delays beyond our control.

Acceptance of Proposal

The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payments will be made as outlined above.

Date Signature

Note – This proposal may be withdrawn by us if not accepted within 30 days

APPENDIX I
Compliance Certification

E&B Natural Resources

January 15, 2013

RECEIVED
JAN 22 2013
SJVAPCD
Southern Region

Mr. Leonard Scandura
Manager of Permit Services
San Joaquin Valley Unified APCD
34946 Flyover Court
Bakersfield, CA 93308

Subject: Project Number 1124268 – Tyson/TEOR - Compliance Certification

Dear Mr. Scandura:

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

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

The current project occurs at existing facilities. The applicant proposes to operate a steam generator to thermally enhance existing wells at the site.

Since the project will provide thermal enhancement to be used at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

Signature

AIR COMPLIANCE COORDINATOR
Title

34740 Merced Avenue • Bakersfield, CA 93308 • (661) 392-7575 • (661)392-7579 Fax

APPENDIX J
HRA

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	David Torii – Permit Services
From:	Kyle Melching – Technical Services
Date:	January 29, 2013
Facility Name:	E&B Natural Resources
Location:	Various Locations
Application #(s):	S-1624-81-3, 82-3, 84-3, 97-4, 208-1, 244-1, & 248-0 thru 250-0
Project #:	S-1124268

A. RMR SUMMARY

RMR Summary				
Categories	**500 BBL Storage Tanks (Units 248-0 thru 250-0)**	**TEOR Well Increase (Units 97-4, 208-1, & 244-1)**	**Project Totals**	**Facility Totals**
Prioritization Score	1.05	1.05	2.1	>1
Acute Hazard Index	0.00	0.00	0.00	0.74
Chronic Hazard Index	0.00	0.00	0.00	0.02
Maximum Individual Cancer Risk	**4.83E-07**	**2.1E-07**	6.93E-07	7.08E-06
T-BACT Required?	No	No		
Special Permit Conditions?	No	No		

I. Project Description

Technical Services received a request on January 15, 2013, to perform a Risk Management Review and Ambient Air Quality Analysis (AAQA) to install 3 new 500 BBL storage tanks and increase the number of TEOR wells for units 97-4, 208-1, and 244-1. The project requires public notification; however the are no State or Federal requirements for projects were the sole emissions are VOC's. Therefore, an AAQA is not required. Units 81-3, 82-3 and 84-3 had never been analyzed by techincal services, but were added to a vapor control unit; which led to a decrease in emissions. The negative VOC rates wil neither count for or against this project or facility.

II. Analysis

Toxic emissions from Heavy Crude Oilfield Fugitives were calculated using emission factors based on the 1991 California Polytechnic State University study, Development Of Species Profiles For Selected Organic Emission Sources, *along with VOC fugitive emission rates supplied by the processing engineer. In accordance with the District's* Risk

Management Policy for Permitting New and Modified Sources *(APR 1905-1, March 2, 2001), risks from the project were prioritized using the procedures in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEART's database. The prioritization score for the project was greater than 1.0 (see RMR Summary Table); therefore, a refined Health Risk Assessment was required and performed for the project. AERMOD was used with area source parameters outlined below and concatenated 5-year meteorological data from Bakersfield to determine maximum dispersion factors at the nearest residential and business receptors. The dispersion factors were input into the HARP model to calculate the Chronic and Acute Hazard Indices and the Carcinogenic Risk.*

The following parameters were used for the review:

Analysis Parameters (AERMOD SET-UP)			
Closest Receptor (m)	91	**Type of Receptor**	Residence
Meteorlogical Site	Bakersfield	**Location Type**	Rural

Analysis Parameters (Storage Tanks)			
Source Type	Area	**Length of Side (m)**	18
Average Release Height (m)	6.1	**VOC Emissions (lb/hr)**	0.16
Length of Side (m)	22	**VOC Emissions (lb/yr)**	1394

Analysis Parameters (TEOR Well Increase)			
Source Type	Area	**Length of Side (m)**	25
Average Release Height (m)	1	**VOC Emissions (lb/hr)**	0.7
Length of Side (m)	25	**VOC Emissions (lb/yr)**	6594

III. *Conclusions*

The acute and chronic indices are below 1.0; and the maximum individual cancer risk associated with the project is **6.93E-07**, which is less than the 1 in a million threshold. 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.

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

APPENDIX K
Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-1624-81-3 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES MGMT
MAILING ADDRESS: ATTN: SHAMS HASAN
3000 JAMES ROAD
BAKERSFIELD, CA 93308

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: NW04 **TOWNSHIP:** 28S **RANGE:** 27E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 1,760 BBL FIXED ROOF CRUDE OIL PRODUCTION TANK WITH PV VENT #2GK32 (ANZA): ADD VAPOR CONTROL SYSTEM SHARED WITH S-1624-82 AND '84 AND CORRECT TANK VOLUME TO 2000 BBL

CONDITIONS

1. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
2. {2498} The tank shall be equipped with a vapor recovery system consisting of a closed vent system that collects all VOCs from the storage tank, and a VOC control device. The vapor recovery system shall be APCO-approved and maintained in gas-tight condition. The VOC control device shall be either of the following: a vapor return or condensation system that connects to a gas pipeline distribution system, or an approved VOC destruction device the reduces the inlet VOC emissions by at least 95% by weight as determined by the test method specified in Section 6.4.7. [District Rule 4623]
3. Except as otherwise provided in this permit, the operator shall ensure that the vapor recovery system is functional and is operating as designed at all times. [District Rule]
4. {2499} All piping, valves, and fittings shall be constructed and maintained in a gas-tight condition. [District Rule 4623]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
S-1624-81-3 : Jan 30 2013 10:19AM – TORID : Joint Inspection NOT Required

5. {2501} A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623 and shall be reported as a deviation. [District Rule 4623]
6. {2502} 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. [District Rule 4623]
7. VOC fugitive emissions from the components in gas service on tank (if permit includes the vapor control system Insert: and tank vapor collection system) shall not exceed 0.6 lb/day. [District Rule 2201]
8. Permittee shall maintain accurate component count for tank according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2c (Feb 1999), Screening Value Range emission factors < 10,000 ppmv. Permittee shall update such records when new components are approved and installed. [District Rule 2201]
9. {2490} All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623]

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-1624-82-3 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES MGMT
MAILING ADDRESS: ATTN: SHAMS HASAN
3000 JAMES ROAD
BAKERSFIELD, CA 93308

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: NW04 **TOWNSHIP:** 28S **RANGE:** 27E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 4,330 BBL FIXED ROOF CRUDE OIL PRODUCTION TANK WITH PV VENT, WASH #2 (ANZA): ADD VAPOR CONTROL LISTED ON S-1624-81 AND CORRECT TANK VOLUME TO 5000 BBL

CONDITIONS

1. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
2. {2499} All piping, valves, and fittings shall be constructed and maintained in a gas-tight condition. [District Rule 4623]
3. {2501} A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623 and shall be reported as a deviation. [District Rule 4623]
4. {2502} 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. [District Rule 4623]
5. VOC fugitive emissions from the components in gas service on tank (if permit includes the vapor control system Insert: and tank vapor collection system) shall not exceed 0.2 lb/day. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
S-1624-82-3 : Jan 30 2013 10:19AM – TORID : Joint Inspection NOT Required

6. Permittee shall maintain accurate component count for tank according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2c (Feb 1999), Screening Value Range emission factors < 10,000 ppmv. Permittee shall update such records when new components are approved and installed. [District Rule 2201]

7. {2490} All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623]

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-1624-84-3 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES MGMT
MAILING ADDRESS: ATTN: SHAMS HASAN
3000 JAMES ROAD
BAKERSFIELD, CA 93308

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: NW04 **TOWNSHIP:** 28S **RANGE:** 27E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 1,760 BBL FIXED ROOF CRUDE OIL PRODUCTION TANK WITH PV VENT #2GK33 (ANZA): ADD VAPOR CONTROL LISTED ON S-1624-81

CONDITIONS

1. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
2. {2499} All piping, valves, and fittings shall be constructed and maintained in a gas-tight condition. [District Rule 4623]
3. {2501} A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623 and shall be reported as a deviation. [District Rule 4623]
4. {2502} 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. [District Rule 4623]
5. VOC fugitive emissions from the components in gas service on tank (if permit includes the vapor control system Insert: and tank vapor collection system) shall not exceed 0.2 lb/day. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
S-1624-84-3 : Jan 30 2013 10:18AM – TORID : Joint Inspection NOT Required

6. Permittee shall maintain accurate component count for tank according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2c (Feb 1999), Screening Value Range emission factors < 10,000 ppmv. Permittee shall update such records when new components are approved and installed. [District Rule 2201]

7. {2490} All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623]

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-1624-97-4 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES MGMT
MAILING ADDRESS: ATTN: SHAMS HASAN
3000 JAMES ROAD
BAKERSFIELD, CA 93308

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: 04 **TOWNSHIP:** 28S **RANGE:** 27E

EQUIPMENT DESCRIPTION:
MODIFICATION OF THERMALLY ENHANCED OIL RECOVERY (TEOR) OPERATION SERVING 99 STEAM ENHANCED WELLS WITH GAS/LIQUID SEPARATORS, WATER-COOLED HEAT EXCHANGER, AND AIR-COOLED HEAT EXCHANGER (POSO): INCREASE TOTAL NUMBER OF ALLOWED WELLS TO 400 AND ADD LOCATION SECTION 28, T27S, R27E

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. TEOR operation is authorized at the following locations: Sections 20, 28, 29, 32, 33 and 34 of T27S/R27E and Sections 4, 5, 8, 9, 16, 17, 20 and 21 of T28S, R27E. [District Rule 2201]
4. No more than 400 steam-enhanced oil recovery wells shall be operated at all locations authorized by this permit. [District Rule 2201]
5. Volatile Organic Compound (VOC) emissions from the components associated with the TEOR system including the oil/gas separator tank shall not exceed 12.3 lb-VOC in any one day. [District Rule 2201]
6. Permittee shall maintain an accurate fugitive component count and resulting emissions calculated using emission factors from CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities", Table IV-2c(Feb 199), Screening Range Emission Factors for <10,000 ppmv (no leaks). [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
S-1624-97-4 : Jan 30 2013 10:19AM – TORID : Joint Inspection NOT Required

7. An operator shall not operate a steam-enhanced crude oil production well unless the operator complies with the following requirements: the steam-enhanced crude oil production well vent is open and the well vent is connected to a VOC collection and control system as defined in Section 3.0 of Rule 4401. [District Rule 4401]

8. {4266} The operator shall maintain a copy of the latest APCO-approved Operator Management Plan (OMP) at the facility and make it available to the APCO, ARB, and US EPA upon request. [District Rule 4401]

9. {4267} 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 OMP. [District Rule 4401]

10. {4268} In accordance with the approved OMP, the operator shall meet all applicable operating, inspection and re-inspection, maintenance, process pressure relief device (PRD), component identification, record keeping, and notification requirements of Rule 4401 for all components containing or contacting VOC's at this facility except for those components specifically exempted in Section 4.0 of Rule 4401. [District Rule 4401]

11. {4269} The operator shall maintain an inspection log that has been signed and dated by the facility operator responsible for the inspection, certifying the accuracy of the information recorded in the log. The inspection log shall contain, at a minimum, all of the following information: 1) The total number of components inspected, and the total number and percentage of leaking components found by component types; 2) The location, type, name or description of each leaking component and the description of any unit where the leaking component is found; 3) Date of the leak detection and method of the 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) The date of repair, replacement, or removal from operation of the leaking component(s); 6) The identification and location of essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes first; 7) The method(s) used to minimize the leak from essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier; 8) The date of re-inspection and the leak concentration in ppmv after the component is repaired or is replaced; 9) The inspector's name, business mailing address, and business telephone number; and 10)The date and signature of the facility operator responsible for the inspection and repair program certifying the accuracy of the information recorded in the log. [District Rule 4401]

12. {4270} Records shall be maintained of each calibration of the portable hydrocarbon detection instrument utilized for inspecting components. The records shall include a copy of the current calibration gas certification from the vendor of the calibration gas cylinder, the date of calibration, the concentration of calibration gas, the instrument reading of calibration gas before adjustment, the instrument reading of calibration gas after adjustment, the calibration gas expiration date, and the calibration gas cylinder pressure at the time of calibration. [District Rule 4401]

13. The well vent vapor collection and control system shall be maintained in a leak-free condition. [District Rule 2201]

14. 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. [District Rule 2201]

15. Permittee shall maintain a current roster of wells connected to well vent vapor collection and control system, and such roster shall be made readily available for District inspection upon request. [District Rule 1070]

16. Permittee shall keep records of date of inspection or leak detection, method used for leak detection (i.e. visual, hydrocarbon detection instrument etc.), instrument calibration date, component leaking, leak magnitude (ppmv as methane, number of liquid drops per minute excluding seal lubricant), identification tag, date of repair, method of repair and post-repair measurement. Such records shall be maintained current and shall be made readily available for District inspection upon request. [District Rules 2201 and 4401]

17. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070 and 4401]

18. The crude oil production from wells associated with this permit unit shall not lie within 1,000 feet of an air injection well used for in-situ combustion. [District Rule 4407]

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-1624-208-1 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES MGMT
MAILING ADDRESS: ATTN: SHAMS HASAN
3000 JAMES ROAD
BAKERSFIELD, CA 93308

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: NW14 **TOWNSHIP:** 27S **RANGE:** 27E

EQUIPMENT DESCRIPTION:
MODIFICATION OF TEOR OPERATION WELL VENT VAPOR CONTROL SYSTEM, INCLUDING UP TO 16 STEAM ENHANCED WELLS, AND COMPRESSED VAPOR PIPING TO DISTRICT AUTHORIZED DISPOSAL/INCINERATION DEVICES (POSO): INCREASE TOTAL NUMBER OF ALLOWED WELLS TO 200 AND ADD LOCATIONS SECTIONS 10, 11, 14 AND 15 OF T27S, R27E

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
3. TEOR operation is authorized at the following locations: Sections 10,11, 14 and 15 of T27S/R27E. [District Rule 2201]
4. No more than 200 steam-enhanced oil recovery wells shall be operated at all locations authorized by this permit. [District Rule 2201]
5. Volatile Organic Compound (VOC) emissions from the components associated with the TEOR system including the oil/gas separator tank shall not exceed 6.2 lb-VOC in any one day. [District Rule 2201]
6. Permittee shall maintain an accurate fugitive component count and resulting emissions calculated using emission factors from CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities", Table IV-2c(Feb 199), Screening Range Emission Factors for <10,000 ppmv (no leaks). [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director/ APCO

DRAFT

DAVID WARNER, Director of Permit Services
S-1624-208-1 : Feb 12 2013 1:03PM – TORID : Joint Inspection NOT Required

7. An operator shall not operate a steam-enhanced crude oil production well unless the operator complies with the following requirements: the steam-enhanced crude oil production well vent is open and the well vent is connected to a VOC collection and control system as defined in Section 3.0 of Rule 4401. [District Rule 4401]

8. {4266} The operator shall maintain a copy of the latest APCO-approved Operator Management Plan (OMP) at the facility and make it available to the APCO, ARB, and US EPA upon request. [District Rule 4401]

9. {4267} 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 OMP. [District Rule 4401]

10. {4268} In accordance with the approved OMP, the operator shall meet all applicable operating, inspection and re-inspection, maintenance, process pressure relief device (PRD), component identification, record keeping, and notification requirements of Rule 4401 for all components containing or contacting VOC's at this facility except for those components specifically exempted in Section 4.0 of Rule 4401. [District Rule 4401]

11. {4269} The operator shall maintain an inspection log that has been signed and dated by the facility operator responsible for the inspection, certifying the accuracy of the information recorded in the log. The inspection log shall contain, at a minimum, all of the following information: 1) The total number of components inspected, and the total number and percentage of leaking components found by component types; 2) The location, type, name or description of each leaking component and the description of any unit where the leaking component is found; 3) Date of the leak detection and method of the 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) The date of repair, replacement, or removal from operation of the leaking component(s); 6) The identification and location of essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes first; 7) The method(s) used to minimize the leak from essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier; 8) The date of re-inspection and the leak concentration in ppmv after the component is repaired or is replaced; 9) The inspector's name, business mailing address, and business telephone number; and 10)The date and signature of the facility operator responsible for the inspection and repair program certifying the accuracy of the information recorded in the log. [District Rule 4401]

12. {4270} Records shall be maintained of each calibration of the portable hydrocarbon detection instrument utilized for inspecting components. The records shall include a copy of the current calibration gas certification from the vendor of the calibration gas cylinder, the date of calibration, the concentration of calibration gas, the instrument reading of calibration gas before adjustment, the instrument reading of calibration gas after adjustment, the calibration gas expiration date, and the calibration gas cylinder pressure at the time of calibration. [District Rule 4401]

13. The well vent vapor collection and control system shall be maintained in a leak-free condition. [District Rule 2201]

14. 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. [District Rule 2201]

15. Permittee shall maintain a current roster of wells connected to well vent vapor collection and control system, and such roster shall be made readily available for District inspection upon request. [District Rule 1070]

16. Permittee shall keep records of date of inspection or leak detection, method used for leak detection (i.e. visual, hydrocarbon detection instrument etc.), instrument calibration date, component leaking, leak magnitude (ppmv as methane, number of liquid drops per minute excluding seal lubricant), identification tag, date of repair, method of repair and post-repair measurement. Such records shall be maintained current and shall be made readily available for District inspection upon request. [District Rules 2201 and 4401]

17. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070 and 4401]

18. The crude oil production from wells associated with this permit unit shall not lie within 1,000 feet of an air injection well used for in-situ combustion. [District Rule 4407]

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-1624-244-1 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES MGMT
MAILING ADDRESS: ATTN: SHAMS HASAN
3000 JAMES ROAD
BAKERSFIELD, CA 93308

LOCATION: HEAVY OIL CENTRAL
CA

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

EQUIPMENT DESCRIPTION:
MODIFICATION OF TEOR OPERATION WITH UP TO 100 STEAM-ENHANCED PRODUCTION WELLS WITH CLOSED CASING VENTS: INCREASE TOTAL NUMBER OF ALLOWED WELLS TO 200, INCREASE TEOR VOC VAPOR CONCENTRATION LIMIT TO 100% AND ADD LOCATION SECTION 28, T27S, R27E

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. Steam enhanced wells authorized by this permit shall only be located in Sections 20, 28, and 29, T27S, R27E. [District Rule 2201]
3. Produced fluids shall only be routed to vapor-controlled vessels achieving 99% capture efficiency. [District Rule 2201]
4. Volatile Organic Compound (VOC) emissions from the components associated with the TEOR system including the oil/gas separator tank shall not exceed 6.2 lb-VOC in any one day. [District Rule 2201]
5. Permittee shall maintain an accurate fugitive component count and resulting emissions calculated using emission factors from CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities", Table IV-2c(Feb 199), Screening Range Emission Factors for <10,000 ppmv (no leaks). [District Rule 2201]
6. An operator shall not operate a steam-enhanced crude oil production well unless the operator complies with the following requirements: the steam-enhanced crude oil production well vent is open and the well vent is connected to a VOC collection and control system as defined in Section 3.0 of Rule 4401. [District Rule 4401]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
S-1624-244-1 : Feb 12 2013 1:03PM -- TORID : Joint Inspection NOT Required

7. {4266} The operator shall maintain a copy of the latest APCO-approved Operator Management Plan (OMP) at the facility and make it available to the APCO, ARB, and US EPA upon request. [District Rule 4401]

8. {4267} 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 OMP. [District Rule 4401]

9. {4268} In accordance with the approved OMP, the operator shall meet all applicable operating, inspection and re-inspection, maintenance, process pressure relief device (PRD), component identification, record keeping, and notification requirements of Rule 4401 for all components containing or contacting VOC's at this facility except for those components specifically exempted in Section 4.0 of Rule 4401. [District Rule 4401]

10. {4269} The operator shall maintain an inspection log that has been signed and dated by the facility operator responsible for the inspection, certifying the accuracy of the information recorded in the log. The inspection log shall contain, at a minimum, all of the following information: 1) The total number of components inspected, and the total number and percentage of leaking components found by component types; 2) The location, type, name or description of each leaking component and the description of any unit where the leaking component is found; 3) Date of the leak detection and method of the 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) The date of repair, replacement, or removal from operation of the leaking component(s); 6) The identification and location of essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes first; 7) The method(s) used to minimize the leak from essential components and critical components found leaking that cannot be repaired until the next process unit turnaround or not later than one year after leak detection, whichever comes earlier; 8) The date of re-inspection and the leak concentration in ppmv after the component is repaired or is replaced; 9) The inspector's name, business mailing address, and business telephone number; and 10)The date and signature of the facility operator responsible for the inspection and repair program certifying the accuracy of the information recorded in the log. [District Rule 4401]

11. {4270} Records shall be maintained of each calibration of the portable hydrocarbon detection instrument utilized for inspecting components. The records shall include a copy of the current calibration gas certification from the vendor of the calibration gas cylinder, the date of calibration, the concentration of calibration gas, the instrument reading of calibration gas before adjustment, the instrument reading of calibration gas after adjustment, the calibration gas expiration date, and the calibration gas cylinder pressure at the time of calibration. [District Rule 4401]

12. The well vent vapor collection and control system shall be maintained in a leak-free condition. [District Rule 2201]

13. 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. [District Rule 2201]

14. Permittee shall maintain a current roster of wells connected to well vent vapor collection and control system, and such roster shall be made readily available for District inspection upon request. [District Rule 1070]

15. Permittee shall keep records of date of inspection or leak detection, method used for leak detection (i.e. visual, hydrocarbon detection instrument etc.), instrument calibration date, component leaking, leak magnitude (ppmv as methane, number of liquid drops per minute excluding seal lubricant), identification tag, date of repair, method of repair and post-repair measurement. Such records shall be maintained current and shall be made readily available for District inspection upon request. [District Rules 2201 and 4401]

16. All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070 and 4401]

17. The crude oil production from wells associated with this permit unit shall not lie within 1,000 feet of an air injection well used for in-situ combustion. [District Rule 4407]

18. All records shall be maintained and made readily available for District inspection upon request for a period of five years. [District Rule 1070]

19. Formerly S-6983-24.

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-1624-248-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES MGMT
MAILING ADDRESS: ATTN: SHAMS HASAN
3000 JAMES ROAD
BAKERSFIELD, CA 93308

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: 28 **TOWNSHIP:** T27S **RANGE:** R27E

EQUIPMENT DESCRIPTION:
500 BBL FIXED ROOF CRUDE OIL WASH TANK WITH PV VENT, TYSON LEASE

CONDITIONS

1. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
2. This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in gas-tight condition except when the operating pressure exceeds the valve's set pressure. [District Rules 2201 and 4623]
3. Tank shall operate at a constant level. [District Rule 2201]
4. Fluid throughput shall not exceed 500 barrels per day based on a monthly average. [District Rules 2201 and 4623]
5. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.2 psia under all storage conditions. [District Rule 2201 and 4623]
6. VOC emission rate from the tank shall not exceed 1.0 lb/day. [District Rule 2201]
7. {2482} The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287 e1 "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method). Sampling for API gravity shall be performed in accordance with ASTM Method D 4057 "Standard Practices for Manual Sampling of Petroleum and Petroleum Products." [District Rule 4623]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
S-1624-248-0 : Jan 31 2013 7:01AM – TORID : Joint Inspection NOT Required

8. {2483} For crude oil with an API gravity of 26 degrees or less, the TVP shall be determined using the latest version of the Lawrence Berkeley National Laboratory "test Method for Vapor pressure of Reactive Organic Compounds in Heavy Crude Oil Using Gas Chromatograph", as approved by ARB and EPA. [District Rule 4623]
9. Permittee shall maintain monthly records of average daily fluid throughput and shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rules 2201 and 4623]
10. {2913} The permittee shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rule 4623]
11. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4623]

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-1624-249-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES MGMT
MAILING ADDRESS: ATTN: SHAMS HASAN
3000 JAMES ROAD
BAKERSFIELD, CA 93308

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: 28 **TOWNSHIP:** T27S **RANGE:** R27E

EQUIPMENT DESCRIPTION:
500 BBL FIXED ROOF CRUDE OIL STOCK TANK WITH PV VENT, TYSON LEASE

CONDITIONS

1. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
2. This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in gas-tight condition except when the operating pressure exceeds the valve's set pressure. [District Rules 2201 and 4623]
3. Fluid throughput shall not exceed 50 barrels per day based on a monthly average. [District Rules 2201 and 4623]
4. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.2 psia under all storage conditions. [District Rule 2201]
5. VOC emission rate from the tank shall not exceed 1.4 lb/day. [District Rule 2201]
6. Permittee shall maintain monthly records of average daily fluid throughput and shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rules 2201 and 4623]
7. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4623]

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

Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
S-1624-249-0 : Jan 30 2013 10:19AM -- TORID : Joint Inspection NOT Required

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-1624-250-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES MGMT
MAILING ADDRESS: ATTN: SHAMS HASAN
3000 JAMES ROAD
BAKERSFIELD, CA 93308

LOCATION: HEAVY OIL CENTRAL
CA

SECTION: 28 **TOWNSHIP:** T27S **RANGE:** R27E

EQUIPMENT DESCRIPTION:
500 BBL FIXED ROOF CRUDE OIL STOCK TANK WITH PV VENT, TYSON LEASE

CONDITIONS

1. Permittee's crude oil production shall average less than 6,000 bbl/day from all operations within Kern County and permittee shall not engage in refining, transporting, or marketing of refined petroleum products. [District Rule 4623]
2. This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in gas-tight condition except when the operating pressure exceeds the valve's set pressure. [District Rules 2201 and 4623]
3. Fluid throughput shall not exceed 50 barrels per day based on a monthly average. [District Rules 2201 and 4623]
4. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.2 psia under all storage conditions. [District Rule 2201]
5. VOC emission rate from the tank shall not exceed 1.4 lb/day. [District Rule 2201]
6. Permittee shall maintain monthly records of average daily fluid throughput and shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rules 2201 and 4623]
7. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4623]

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

Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
S-1624-250-0 : Jan 30 2013 10:19AM – TORID : Joint Inspection NOT Required