



San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT



HEALTHY AIR LIVING™

OCT 06 2014

Shams Hassan
E&B Natural Resources
3000 James Road
Bakersfield, CA 93308

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: S-1807
Project Number: S-1143485

Dear Mr. Hassan:

Enclosed for your review and comment is the District's analysis of E&B Natural Resources's applications for Authority to Construct for tank modifications in western Kern county.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30-day public notice and 45-day EPA notice comment periods, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Richard Edgehill of Permit Services at (661) 392- 5617.

Sincerely,

Arnaud Marjollet
Director of Permit Services

AM:RUE/st

Enclosures

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

Sayed Sedroin
Executive Director/Air Pollution Control Officer

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San Joaquin Valley Air Pollution Control District
Authority to Construct Application Review
Reconfigure Tank Battery, Convert Wash/Stock Tank to Stock/Wash Tank

Facility Name: E&B Natural Resources Mgmt Date: September 22, 2014
Mailing Address: 3000 James Road Engineer: Richard Edgehill
 Bakersfield, CA 93308 Lead Engineer: Steve Leonard
Contact Person: Shams Hassan and Scott Faulkenburg
Telephone: (661) 616-6168 (SH) and (661) 345-8263 (cell, SF)
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E-Mail: sfaulk@global.t-bird.edu
Application #(s): S-1807-25-2 and '-71-0
Project #: 1143485
Deemed Complete: August 28, 2014

I. Proposal

E&B Natural Resources Mgmt (E&B) has requested Authorities to Construct (ATCs) to reconfigure a tank battery at the BCU lease. Existing stock tank (S-1807-25) will be replaced with a dimensionally identical tank and converted to a wash tank. A new 500 bbl fixed-roof stock tank (S-1807-71) will be installed. The (identical) routine replacement of tank S-1807-25 can be performed without an ATC prior to being converted to a wash tank, per Rule 2020, Section 7.1.

The increase in emissions from S-1807-71 triggers a Federal Major Modification (with 30-day Public Notice) and BACT. Offsets are not required.

Facilities S-1807 and S-6826 are the same stationary source which is a major source for VOCs but does not have a Title V PTO. It is subject to Rule 2530.

The current PTOs are included in **Attachment I**.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2530	Federally Enforceable Potential to Emit (12/18/08)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4623	Storage of Organic Liquids (5/19/05)
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

Modified and new tanks '-25 and '-71, respectively, are located at the BCU Lease, NE Section 30, T26S, R19E within E&B heavy oil western stationary source.

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

Crude oil from producing wells enters wash tank(s) for separation of oil and water. Produced water is sent to water tank(s). Oil is stored in tanks prior to custody transfer.

Proposed Modifications

Stock tank S-1807-25 will be converted to a wash tank (with flashing losses). Pre- and post-project facility diagrams are included in **Attachment II**.

V. Equipment Listing*

Pre-Project Equipment Description:

S-1807-25-1: 1,000 BBL FIXED ROOF SHIPPING/STOCK TANK WITH P/V VENT (BCU - BLACKWELLS CORNER FIELD)--TK #8001

Proposed Modifications:

S-1807-25-1: MODIFICATION TO 1,000 BBL FIXED ROOF CRUDE OIL SHIPPING/STOCK TANK WITH P/V VENT(BCU - BLACKWELLS CORNER FIELD)--TK #8001 WITH P/V VENT*: CHANGE SERVICE FROM SHIPPING TANK TO WASH TANK (CONSTANT LEVEL OPERATION), ADD P/V VENT TO EQUIPMENT DESCRIPTION

*the words "with P/V vent" were added to the S-1807-25 equipment descriptions

Post Project Equipment Description:

S-1807-25-2: 1,000 BBL FIXED ROOF CRUDE OIL WASH TANK WITH P/V VENT (BCU - BLACKWELLS CORNER FIELD)--TK #8001

S-1807-71-0: 500 BBL FIXED ROOF CRUDE OIL SHIPPING/STOCK TANK WITH P/V VENT(BCU - BLACKWELLS CORNER FIELD)

VI. Emission Control Technology Evaluation

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

VII. General Calculations

A. Assumptions

- Facility operates 24 hr/day, 365 days/yr.
- S-1807-25 (1000 bbl) dimensions: 21.2 ft diameter, 16 ft high
- S-1807-71 (500 bbl) dimensions: 15 ft diameter, 16 ft high

S-1624-25

Pre-Project

- Variable level operation with no flashing losses (stock tank)
- Crude oil throughput 1000 bbl/day (proposed, no throughput limit)
- tvp = 0.5 psia
- Tank temperature, ambient, 100 °F

Post-Project

- Constant level operation with flashing losses (wash tank)
- Throughputs: 1000 bbl/day fluid, 1000 bbl/day oil
- tvp = 0.5 psia
- Tank temperature, ambient, 100 °F

S-1624-71

Post-Project

- Variable level operation with no flashing losses (stock tank)
- Crude oil throughput 150 bbl/day fluid (9-15-14 applicant email)
- tvp = 0.5 psia
- Tank temperature, ambient, 100 °F

B. Emission Factors

Both the daily and annual PE are calculated using the District's Microsoft Excel spreadsheets 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. See Calculations **Attachment III**.

C. Calculations

1. Pre-Project Potential to Emit (PE1)

PE1		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
S-1807-25	51.9	18,946
S-1807-71	0	0
Σ PE1	51.9	18,946

2. Post Project Potential to Emit (PE2)

PE2		
	Daily Emissions (lb/day)	Annual Emissions (lb/year)
S-1807-25	19.8	7,237
S-1807-71	8.4	3,082
Σ PE2	28.2	10,319

GHG Emissions

There is a reduction in emissions and therefore no increase in Greenhouse Gas (GHG) emissions.

Emissions profiles are included in **Attachment IV**.

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.

Pre-project, facility-wide VOC emissions exceed both the offset threshold for VOC's (20,000 lb VOC/ yr) and the Major Source threshold for VOC's (20,000 lb VOC/ yr). No other pollutants are emitted by this project; therefore, SSPE1 calculations for these pollutants 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.

As noted above, S-1807 and S-6826 is an existing Major Source for VOC's, and the facility-wide VOC emissions already exceed the offset threshold for VOC's. The facility is therefore not becoming a Major Source for VOC's as a result of this project. No other pollutants are emitted by this project; therefore, no SSPE2 calculations for these pollutants are necessary.

5. Major Source Determination

Rule 2201 Major Source Determination:

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

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

Rule 2201 Major Source Determination (lb/year)						
	NO _x	SO _x	PM ₁₀	PM _{2.5}	CO	VOC
District Calculator*	15,255	26,193	16,193	16,193	76,194	743,413 (S-1807) + 19,383 (S-6826) = 762,796
ATC S-1807-69-0	4,616	10,648	5,659	5,659	27,550	4,095
SSPE1	19,871	36,841	21,852	21,852	103,744	>766,891
SSPE2	19,871	36,841	21,852	21,852	103,744	>766,891 +10,319 – 18,946 = >758,264*
Major Source Threshold	20,000	140,000	140,000	200,000	200,000	20,000
Major Source?	No	No	No	No	No	Yes

Note: PM_{2.5} assumed to be equal to PM₁₀,

*SSPE Calculator (PTO emissions only), there are outstanding ATCs for one 83 MMBtu/hr SG ('-69), tanks and TEOR operations

**SSPE1 + ΣPE2 - ΣPE1

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

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). Therefore the PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination (tons/year)						
	NO2	VOC	SO2	CO	PM	PM10
Estimated Facility PE before Project Increase	10	>381	18	52	11	11
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	N	Y	N	N	N	N

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

6. Baseline Emissions (BE)

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

Pursuant to District Rule 2201, BE = PE1 for:

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

otherwise,

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

Since tank '25 is equipped with a PV Vent, which satisfies the current Achieved in Practice BACT requirement, it is considered a Clean Emissions Unit.

Therefore, the BE for '25 the pre-project potential to emit (PE1). BE for '71 is equal to zero as it is a new permit unit.

7. SB 288 Major Modification

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

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

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO _x	0	50,000	No
SO _x	0	80,000	No
PM ₁₀	0	30,000	No
VOC	10,319	50,000	No

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

8. Federal Major Modification

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

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.

S-1807-71

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*	3,082	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.

Therefore, the project is a Federal Major Modification.

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

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The pollutants which must be addressed in the PSD applicability determination for sources located in the SJV and which are emitted in this project are: (See 52.21 (b) (23) definition of significant)

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM10

I. Project Location Relative to Class 1 Area

As demonstrated in the “PSD Major Source Determination” Section above, the facility was determined to be a existing PSD Major Source. Because the project is not located within 10 km (6.2 miles) 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. Project Emission Increase – Significance Determination

a. Evaluation of Calculated Post-project Potential to Emit for New or Modified Emissions Units vs PSD Significant Emission Increase Thresholds

As a screening tool, the post-project potential to emit from all new and modified units is compared to the PSD significant emission increase thresholds, and if the total potentials to emit from all new and modified units are below the applicable thresholds, no further PSD analysis is needed.

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

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

10. Quarterly Net Emissions Change (QNEC)

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

QNEC = PE2 - BE, where:

QNEC = Quarterly Net Emissions Change for each emissions unit, lb/qtr.

PE2 = Post Project Potential to Emit for each emissions unit, lb/qtr.

BE = Baseline Emissions (per Rule 2201) for each emissions unit, lb/qtr.

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

S-1807-25

$$\begin{aligned} PE2_{\text{quarterly}} &= PE2_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 7,237 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 1,809 \text{ lb VOC/qtr} \end{aligned}$$

$$\begin{aligned} BE_{\text{quarterly}} &= BE_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 18,946 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 4,737 \text{ lb VOC/qtr} \end{aligned}$$

$$\begin{aligned} QNEC &= 1,809 \text{ lb VOC/qtr} - 4,737 \text{ lb VOC/qtr} \\ QNEC &= -2,928 \text{ lb VOC/qtr} \end{aligned}$$

S-1807-71

$$\begin{aligned} PE2_{\text{quarterly}} &= PE2_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 3,082 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 771 \text{ lb VOC/qtr} \end{aligned}$$

$$\begin{aligned} BE_{\text{quarterly}} &= BE_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 0 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 0 \text{ lb VOC/qtr} \end{aligned}$$

$$\begin{aligned} QNEC &= 771 \text{ lb VOC/qtr} - 0 \text{ lb VOC/qtr} \\ QNEC &= 771 \text{ lb VOC/qtr} \end{aligned}$$

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

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

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

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

As seen in Section VII.C.2 above, the applicant is proposing to install a fixed roof crude oil tank with a PE greater than 2 lb/day for VOC. BACT is triggered for VOCs.

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

$$\text{AIPE} = \text{PE}_2 - \text{HAPE}$$

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)

$$\text{HAPE} = \text{PE}_1 \times (\text{EF}_2/\text{EF}_1)$$

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

$$\text{AIPE} = \text{PE2} - (\text{PE1} * (\text{EF2} / \text{EF1}))$$

$$\text{S-1807-25 (EF2/EF1 = 1.0)}$$

$$\begin{aligned} \text{AIPE} &= 19.8 - (51.9 * (1.0)) \\ &= -32.1 \text{ lb/day} \end{aligned}$$

As demonstrated above, the AIPE is greater than 2.0 lb/day for VOC emissions for S-1807-24 and therefore BACT is triggered. BACT is not triggered for S-1807-25.

d. SB 288/Federal Major Modification

As discussed in Sections VII.C.7 and VII.C.8 above, this project constitutes 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 (S-1807-71).

2. BACT Guideline

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.

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

3. Top-Down BACT Analysis

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

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

B. Offsets

1. Offset Applicability

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	PM₁₀	CO	VOC
SSPE2	19,871	36,841	21,852	103,744	>758,264
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 SSPE2 is greater than the offset thresholds for VOC only. 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.

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

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

The facility is proposing to install a new emissions unit with BE = 0 and to modify an emissions unit with BE = PE1. Therefore offsets can be determined as follows:

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

$$\begin{aligned} \Sigma \text{PE2 (VOC)} &= 10,319 \text{ lb/year (see calculation in Section VII. C.2 above)} \\ \Sigma \text{BE (VOC)} &= 18,946 \text{ lb/year (see calculation in Section VII. C.2 above)} \\ \text{ICCE} &= 0 \text{ lb/year} \end{aligned}$$

$$\begin{aligned} \text{Offsets Required (lb/year)} &= (\Sigma[\text{PE2} - \text{BE}] + \text{ICCE}) \times \text{DOR, for all new or modified} \\ &\quad \text{emissions units in the project,} \\ &= -8,627 \text{ lb/yr} \end{aligned}$$

Offsets will not be required for the project.

C. Public Notification

1. Applicability

Public noticing is required for:

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

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

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

As demonstrated in Sections VII.C.7 and VII.C.8, this project is a Federal Major Modification. Therefore, public noticing for Federal Major Modification purposes is required.

b. PE > 100 lb/day

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. There are no new emissions units with a PE greater than 100 pounds during any one day associated with this project. Therefore public noticing is not required for this project for PE > 100 lb/day.

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	19,871	19,871	20,000 lb/year	No
SO _x	36,841	36,841	54,750 lb/year	No
PM ₁₀	21,852	21,852	29,200 lb/year	No
CO	103,744	103,744	200,000 lb/year	No
VOC	>766,891	>758,264	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	SSPE1 (lb/year)	SSPE2 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	19,871	19,871	0	20,000 lb/year	No
SO _x	36,841	36,841	0	20,000 lb/year	No
PM ₁₀	21,852	21,852	0	20,000 lb/year	No
CO	103,744	103,744	0	20,000 lb/year	No
VOC	>766,891	>758,264	-8,627	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.

e. Title V Significant Permit Modification

Since this facility does not have a Title V permit, this change is not a Title V Significant Modification, and therefore public noticing is not required for this purpose.

2. Public Notice Action

As discussed above, this project is a 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 Emissions Limits (DEL)

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

Proposed Rule 2201 (DEL) Conditions:

S-1807-25

Tank shall only operate at constant level. [District Rule 2201] N

Crude oil throughput shall not exceed 1000 barrels per day based on a monthly average. [District Rule 2201] N

This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rules 2201 and 4623] N

VOC emission rate from the tank shall not exceed 19.8 lb/day. [District Rule 2201] N

S-1807-71

Crude oil throughput shall not exceed 150 barrels per day based on a monthly average. [District Rule 2201] N

This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rules 2201 and 4623] N

VOC emission rate from the tank shall not exceed 8.4 lb/day. [District Rule 2201] N

E. Compliance Assurance

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

1. Source Testing

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

S-1807-25 and -71

Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank within 60 days of startup and at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rules 2201 and 4623] N

2. Monitoring

No monitoring condition for Rule 2201 is required.

3. Record Keeping

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

S-1807-25 and '-71

Permittee shall maintain monthly records of average daily crude oil throughput and shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rules 2201 and 4823] 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.

F. Ambient Air Quality Analysis (AAQA)

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The project emissions are VOCs which does not have a Federal or State Air Quality standard. AAQA is not required.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or a source undergoing a Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed above, the project is a Federal Major Modification, therefore this requirement is applicable. Included in **Attachment VII** is E&B's Statewide Compliance Certification document.

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to authorize a tank. Since the project is at the current facility 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 2410 Prevention of Significant Deterioration

As demonstrated above this project will not result in a significant increase in emissions; therefore, Rule 2410 does not apply.

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 NO_x, VOCs, CO, and PM₁₀; 50 tons per year SO₂; 5 tons per year of a single HAP; 12.5 tons per year of any combination of HAPs; 50 percent of any lesser threshold for a single HAP as the EPA may establish by rule; and 50 percent of the major source threshold for any other regulated air pollutant not listed in Rule 2530.

Rule 4001 New Source Performance Standards

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

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

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

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

Rule 4101 - Visible Emissions

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

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

Rule 4102 - Public Nuisance

Rule 4102 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.

CH&SC 41700 - California Health and Safety Code

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

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

The cancer risk for this project is shown below:

HRA Summary		
Unit	Project Cancer Risk	T-BACT Required
S-1807-25 and '-71	0.08 per million	No

The project is approved without TBACT.

Rule 4623, Storage of Organic Liquids

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

According to Section 4.4, Tanks exclusively receiving and/or storing an organic liquid with a TVP less than 0.5 psia are exempt from all other requirements of the rule except for complying with the following provisions:

- 4.4.1 TVP and API Gravity Testing provisions pursuant to Section 6.2,
- 4.4.2 Recordkeeping provisions pursuant to Section 6.3.6,

4.4.3 Test Methods provisions pursuant to Section 6.4, and tanks exclusively receiving and or storing organic liquids with a TVP less than 0.5 psia are exempt from this Rule except for complying with Sections 6.2, 6.3.6, 6.4 and 7.2.

Therefore, the following conditions shall be placed on the ATC:

This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) not greater than 0.5 psia under all storage conditions. [District Rules 2201 and 4623] N

Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank within 60 days of startup and at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rules 2201 and 4623] 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 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

{2482} The API gravity of crude oil or petroleum distillate shall be determined by using ASTM Method D 287 et "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

Permittee shall maintain records of TVP and API gravity 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] N

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

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

Compliance is expected.

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

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

California Environmental Quality Act (CEQA)

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

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

Greenhouse Gas (GHG) Significance Determination

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

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.

Per District Policy, project specific greenhouse gas emissions less than or equal to 230 metric tons-CO₂e/year are considered to be zero for District permitting purposes and are exempt from further environmental review.

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 § 15301 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

IX. Recommendations

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATCs S-1807-25-2 and '71-0 subject to the permit conditions on the attached draft ATCs in **Attachment IX**.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-1807-25	3020-05C	42,000 gal	\$135.00
S-1807-71	3020-05C	21,000 gal	\$135.00

Attachments

- I. PTO S-1807-25-1
- II. Pre- and Post- Project Facility Diagrams
- III. Tank Emissions Calculations
- IV. Emissions Profiles
- V. BACT Guideline
- VI. BACT Analysis
- VII: Statewide Compliance Statement
- VIII: HRA
- IX: Draft ATCs

ATTACHMENT I
PTO S-1807-25-1

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-1807-25-1

EXPIRATION DATE: 05/31/2017

SECTION: NE30 TOWNSHIP: 26S RANGE: 19E

EQUIPMENT DESCRIPTION:

1,000 BBL FIXED ROOF SHIPPING/STOCK TANK (BCU - BLACKWELLS CORNER FIELD)--TK #6001

PERMIT UNIT REQUIREMENTS

1. Facilities S-1807 and S-6826 are part of the same stationary source. [District Rule 2201]
2. The permittee shall not emit more than one half of the major source threshold based on a rolling 12-month summary of actual emissions. [District Rule 2530, 6.1]
3. The permittee shall maintain a record of the rolling 12-month summary of actual emissions from permitted operations. This record shall be kept on site and made available to the District upon request. [District Rule 2530, 6.1]
4. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.5 psia under all storage conditions. [District Rule 4623]
6. 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]
7. 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]
8. 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. The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. The permittee shall also conduct an API gravity testing. [District Rule 4623]
10. 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]
11. 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]
12. 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]
13. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 4623]

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

ATTACHMENT II

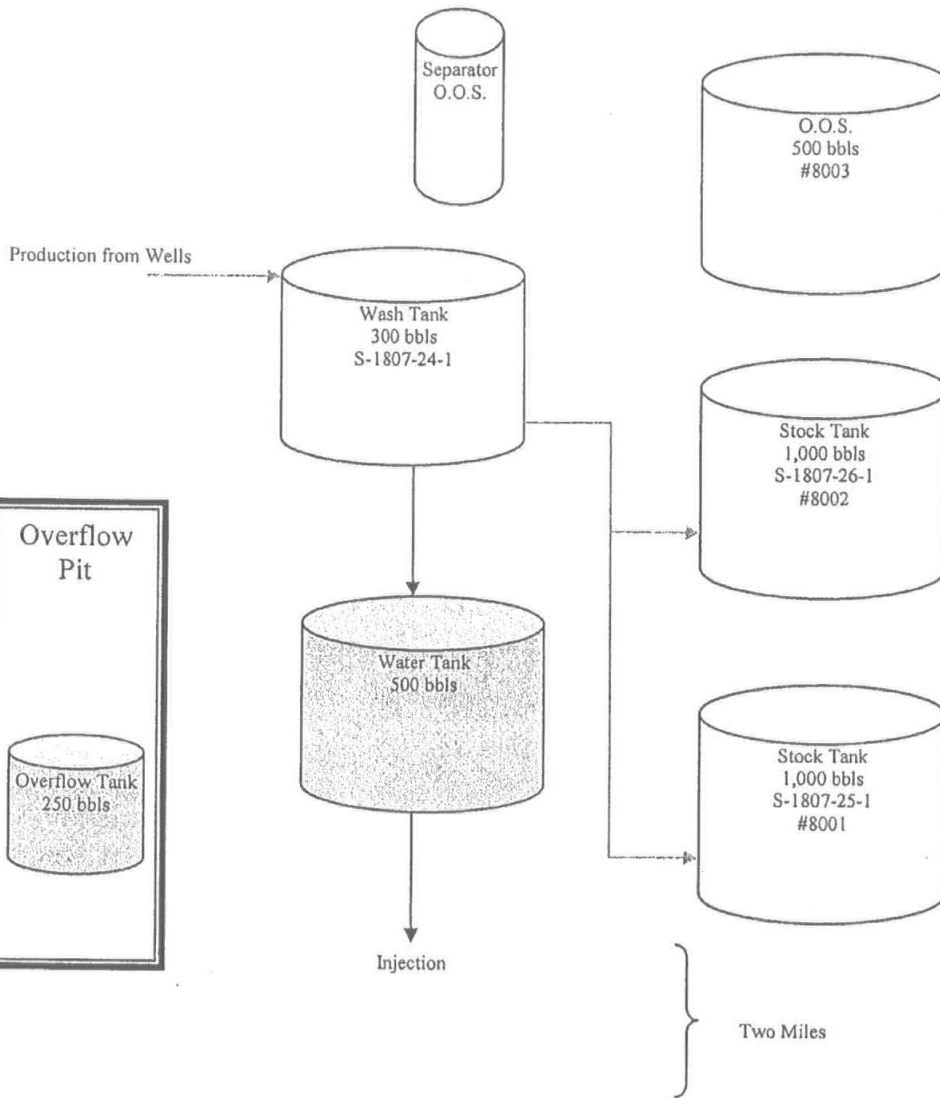
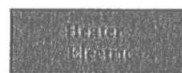
Pre- and Post-Project Facility Diagrams

E&B Natural Resources, Inc.

BUSINESS NAME: Blackwells Corner Unit - BCU Tank Battery
SCALE: NONE



Facility Diagram (S19/T26S/R19E) SE1/4



Pre Project

} Two Miles

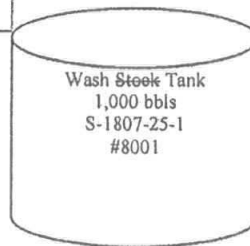
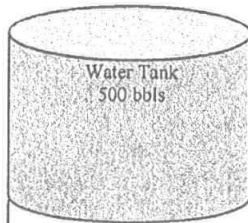
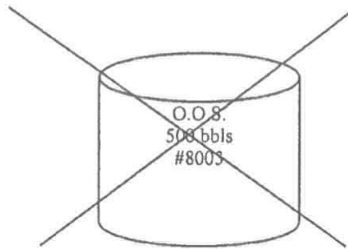
HWY 46

E&B Natural Resources, Inc.



BUSINESS NAME: Blackwells Corner Unit - BCU Tank Battery
SCALE: NONE

Facility Diagram (S19/T26S/R19E) SE1/4



Injection

Production from Wells

Two Miles

HWY 46

ATTACHMENT III Tank Emissions Calculations

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1807-25
facility tank I.D.	
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.5
liquid bulk storage temperature, T _b (°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)	21.2
capacity of tank (bbl)	1,000
conical or dome roof? {c, d}	c
shell height of tank (feet)	16
average liquid height (feet)	14
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

1,008

PEZ
1-25

Liquid Input Data		
	A	B
maximum daily fluid throughput (bbl)		1,000
maximum annual fluid throughput (bbl)		365,000
maximum daily oil throughput (bbl)(used to calculate flashing loss)		1,000
maximum annual oil throughput (bbl)(used to calculate flashing loss)		365,000
molecular weight, M _w (lb/lb-mol)		100

Calculated Values		
	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
(psia)	99.0	0.9259
(psia)	88.2	0.6653
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	93.6	0.7903
roof outage, H _{ro} (feet)		0.2208
vapor space volume, V _v (cubic feet)		783.93
paint factor, alpha		0.68
vapor density, W _v (lb/cubic foot)		0.0084
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1032

Results		
	lb/year	lb/day
Standing Storage Loss	249	0.68
Working Loss	N/A	N/A
Flashing Loss	6,988	19.15
Total Uncontrolled Tank VOC Emissions	7,237	19.8

Summary Table	
Permit Number	S-1807-25
Facility Tank I.D.	---
Tank capacity (bbl)	1,000
Tank diameter (ft)	21.2
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	1,000
Maximum Annual Fluid Throughput (bbl/year)	365,000
Maximum Daily Oil Throughput (bbl/day)	1,000
Maximum Annual Oil Throughput (bbl/year)	365,000
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	19.8
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	7,237

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1807-25
facility tank I.D.	
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.5
liquid bulk storage temperature, T _b (°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)	21.2
capacity of tank (bbl)	1,000
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	10
are the roof and shell the same color? (yes,no)	yes
For roof:	
color (1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

1,008

? E10
 1-25

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

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
(psia)	99.0	0.9259
(psia)	88.2	0.8653
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	93.6	0.7903
roof outage, H _{ro} (feet)		0.2208
vapor space volume, V _v (cubic feet)		2195.89
paint factor, alpha		0.66
vapor density, W _v (lb/cubic foot)		0.0084
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1032

Results	lb/year	lb/day
Standing Storage Loss	698	1.91
Working Loss	18,250	50.00
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	18,948	51.9

Summary Table	
Permit Number	S-1807-25
Facility Tank I.D.	---
Tank capacity (bbl)	1,000
Tank diameter (ft)	21.2
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	1,000
Maximum Annual Fluid Throughput (bbl/year)	365,000
Maximum Daily Oil Throughput (bbl/day)	1,000
Maximum Annual Oil Throughput (bbl/year)	---
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	51.9
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	18,948

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Tank Input Data	
permit number (S-xxxx-xx-xx)	S-1807-XX
facility tank I.D.	new
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.5
liquid bulk storage temperature, T _b (°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)	15
capacity of tank (bbl)	500
conical or dome roof? (c, d)	c
shell height of tank (feet)	16
average liquid height (feet)	10
are the roof and shell the same color? (yes,no)	yes
For roof: color (1:Spec Al, 2:Diff Al, 3:Light, 4:Med, 5:Red, 6:White)	4
condition (1: Good, 2: Poor)	1
-----This row only used if shell is different color from roof-----	4
-----This row only used if shell is different color from roof-----	1

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		150
maximum annual fluid throughput (bbl)		54,750
-----This row only used if flashing losses occur in this tank-----		150
-----This row only used if flashing losses occur in this tank-----		54,750
molecular weight, M _w (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, T _{ax} (°F)		77.65
daily minimum ambient temperature, T _{an} (°F)		53.15
daily total solar insolation factor, I (Btu/ft ² -day)		1648.9
atmospheric pressure, P _a (psia)		14.47
(psia)	99.0	0.9259
(psia)	88.2	0.6653
water vapor pressure at average liquid surface temperature (T _{la}), P _{va} (psia)	93.6	0.7903
roof outage, H _{ro} (feet)		0.1563
vapor space volume, V _v (cubic feet)		1087.90
paint factor, alpha		0.68
vapor density, V _v (lb/cubic foot)		0.0084
daily vapor temperature range, delta T _v (degrees Rankine)		49.04
vapor space expansion factor, K _e		0.1032

Results	lb/year	lb/day
Standing Storage Loss	345	0.95
Working Loss	2,738	7.50
Flashing Loss	N/A	N/A
Total Uncontrolled Tank VOC Emissions	3,082	8.4

Summary Table	
Permit Number	S-1807-XX
Facility Tank I.D.	new
Tank capacity (bbl)	500
Tank diameter (ft)	15
Tank shell height (ft)	16
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	150
Maximum Annual Fluid Throughput (bbl/year)	54,750
Maximum Daily Oil Throughput (bbl/day)	150
Maximum Annual Oil Throughput (bbl/year)	---
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	8.4
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	3,082

ATTACHMENT IV Emissions Profile

Permit #: S-1807-25-2	Last Updated
Facility: E&B NATURAL RESOURCES MGMT CORP	09/05/2014 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	7237.0
Daily Emiss. Limit (lb/Day)	0.0	0.0	0.0	0.0	19.8
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	-2927.0
Q2:	0.0	0.0	0.0	0.0	-2927.0
Q3:	0.0	0.0	0.0	0.0	-2927.0
Q4:	0.0	0.0	0.0	0.0	-2928.0
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-1807-71-0	Last Updated
Facility: E&B NATURAL RESOURCES MGMT CORP	09/19/2014 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	3082.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	8.4
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	770.0
Q2:	0.0	0.0	0.0	0.0	770.0
Q3:	0.0	0.0	0.0	0.0	771.0
Q4:	0.0	0.0	0.0	0.0	771.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

ATTACHMENT V
BACT Guideline

ATTACHMENT VI 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

Applicant has provided installation cost for a vapor control system achieving 99% vapor control efficiency. The detailed cost effectiveness calculation is presented below.

Cost effectiveness calculation

VRU Compressor:	\$46,952
Piping costs:	\$40,000
Scrubber/Compressor:	\$23,763
Total:	\$110,715

Operating costs annually (electricity, maintenance, labor): \$12,000

Equivalent Annual Control Equipment Cost calculation per APCD Policy APR
1305-9 Section X(A)(1). Assume $i = 10\%$ and $n = 10$ years.

$$A = P * ((i * (1 + i)^n) / ((1 + i)^n - 1))$$
$$A = \$110,715 * ((.10 * (1 + .10)^{10}) / ((1 + .10)^{10} - 1))$$
$$A = \$18,013$$

Total Annual Costs calculation per Section X(A)(3)

Total Annual Costs = Equivalent Annual Control Equipment Cost + Annual
Operating Cost

$$\text{Total Annual Costs} = \$18,013 + \$12,000 = \$30,013$$

Annual Emissions Reduction

S-1807-71

$$PE2 = 3,082 \text{ lb/yr (1.5 tons/yr)}$$

Control System with 99% efficiency = 1.5 tons/yr. * 0.99 ~ 1.5 tons/yr reduction

Control Cost per Section X(A)(4)

$$\text{Control Cost} = (\$30,013/\text{yr.}) / (1.5 \text{ tons VOC/yr.}) = \$20,008 \text{ ton VOC}$$

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

Step 5 - Select BACT

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

E&B Natural Resources
 Cost Effective Analysis
 BCU Lease
 300 bbl Stock Tank (S-1807-24)

Total Emissions	2,964	lbs/yr
% Reduction	99%	
Reduction	2,934	lbs/yr
Reduction	1.47	tpy
Total Capital Cost		
VRU - Compressor	\$46,952	
Piping and Installation	\$40,000	
Scrubber/Compressor	\$23,783	
Flare	\$0	
Flare Installation	\$0	
Annualized Capital Cost	\$18,013	
Annual Maintenance Cost	\$12,000	\$1,000/month Contract
Annual Seal Replacement	\$0	
Total Annualized Cost	\$30,013	
Cost per Ton	\$20,456	
VOC Cost/Ton Limit	\$17,500	
Exceeds limit, not cost effective		



GENERAL PRODUCTION SERVICE, INC.
P.O. BOX 344
TAFT, CA 93268
(661) 765-5330 phone (661) 765-4860 fax
www.generalproductionservice.com

December 18, 2013

Mike Smith
E&B Natural Resources

General Production Service Inc. would like to submit the following to furnish Labor and Equipment for the 2014 Drilling Program at the Theta Facility.

The following costs include: Fabrication and Installation of 3" sch 40 Production Flow lines, 3" Production Group Line, all Wellhead Assemblies, Tie all wells into (1) 3" sch 40 line and Field tie into existing Production Line to Facility.

New Wells	\$46,557.75
Tank Facility VRU	\$46,952.20
Scrubber/Compressor	\$23,763.60

Total Estimated Cost: \$117,273.55

Any additional work that was not a part of the Job Walk will be on a Time & Material Basis and will be subject to a Change Order.

Thank you for the opportunity to submit this cost. If you need any additional information or have any questions, please contact me.

Scott Brocaille
Construction Foreman
(661) 577-7381

ATTACHMENT VII
Statewide Compliance Form

E&B Natural Resources

August 27, 2014

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

RECEIVED

AUG 28 2014

SJVAPCD
Southern Region

Subject: Project Number 1143485 – (S-1807) Tank Battery Redesign *RUE*


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 use existing crude oil production tanks in areas that currently have operating wells.

Since the project will be used at the same location as existing wells or tank batteries, 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
HSE Supervisor

Title

ATTACHMENT VIII
HRA

San Joaquin Valley Air Pollution Control District Revised Risk Management Review

To: Richard Edgehill– Permit Services
 From: Esteban Gutierrez– Technical Services
 Date: September 23, 2014
 Facility Name: E&B Natural Resources
 Location: Section 30, T26S, R19E, HOCSS
 Application #(s): S-1807- 25-2 & 71-0
 Project #: S-1143485

A. RMR SUMMARY

RMR Summary				
Categories	Tank (Unit 25-2)	Tank (Unit 71-0)	Project Totals	Facility Totals
Prioritization Score	0:00	0.00	>1.0	>1.0
Acute Hazard Index	0:01	0:01	0.03	0:21
Chronic Hazard Index	0:00	0.00	0.00	0.04
Maximum Individual Cancer Risk (10 ⁻⁶)	0:08	0.05	0.08	4.90
T-BACT Required?	No	No		
Special Permit Conditions?	No	No		

Proposed Permit Conditions

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

Unit #. 25-2 71-0

No special conditions are required.

B. RMR REPORT

I. Project Description

Technical Services received a request on September 24, 2014, to perform a Revised Risk Management Review for a proposed modification to set of oilfield tanks. The original modification consisted of the conversion of a wash tank to a stock tank (24-2), the conversion of a stock tank to a wash tank (25-2) and the cancelaton of tank 26-0. This revision consists of the conversion of 25-2 and the additin of 71-0. 26-0 and 24-2 will not be modified or deleted.

II. Analysis

Technical Services performed a health risk assessment using the Toxic Fugitive Emissions from Oilfield Equipment spreadsheet. The cumulative prioritization scores were greater than 1.0, thus modeling was conducted using the AERMOD model, with the parameters outlined below and meteorological data for 2009-2013 from Bakersfield to determine the dispersion factors (i.e., the predicted concentration or X divided by the normalized source strength or Q) for a receptor grid.

Analysis Parameters Unit 25-2			
Source Type	Circ Area	Location Type	Rural
Radius	4.53	Closest Receptor	>1 mile
Vericles	20	Type of Receptor	Residential
Release Height (m)	1.22	Pollutant Type	VOC
		Emission Rate	7237 lb/yr

Analysis Parameters Unit 71-0			
Source Type	Circ Area	Location Type	Rural
Radius	4.53	Closest Receptor	>1 mile
Vericles	20	Type of Receptor	Residential
Release Height (m)	1.22	Pollutant Type	VOC
		Emission Rate	3082 lb/yr

III. Conclusion

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

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

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

IV. Attachments

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

E. Facility Summary

ATTACHMENT IX
Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: S-1807-25-2

LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES MGMT CORP
MAILING ADDRESS: ATT: SHAMS HASAN
1600 NORRIS ROAD
BAKERSFIELD, CA 93308

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
CA

SECTION: NE30 TOWNSHIP: 26S RANGE: 19E

EQUIPMENT DESCRIPTION:

MODIFICATION TO 1,000 BBL FIXED ROOF CRUDE OIL SHIPPING/STOCK TANK WITH P/V VENT(BCU - BLACKWELLS CORNER FIELD)--TK #8001 WITH P/V VENT: CHANGE SERVICE FROM SHIPPING TANK TO WASH TANK (CONSTANT LEVEL OPERATION), ADD P/V VENT TO EQUIPMENT DESCRIPTION

CONDITIONS

1. Facilities S-1807 and S-6826 are part of the same stationary source. [District Rule 2201]
2. {3804} The permittee shall not emit more than one half of the major source threshold based on a rolling 12-month summary of actual emissions. [District Rule 2530, 6.1]
3. {3805} The permittee shall maintain a record of the rolling 12-month summary of actual emissions from permitted operations. This record shall be kept on site and made available to the District upon request. [District Rule 2530, 6.1]
4. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
5. Tank shall only operate at constant level. [District Rule 2201]
6. Crude oil throughput shall not exceed 1000 barrels per day based on a monthly average. [District Rule 2201]
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 Rules 2201 and 4623]
8. VOC emission rate from the tank shall not exceed 19.8 lb/day. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (861) 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

Arnaud Marjolle, Director of Permit Services

S-1807-25-2 : Sep 30 2014 9:17AM -- EDG:ELR : Joint Inspection NOT Required

9. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank within 60 days of startup and at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rules 2201 and 4623]
10. {2911} The TVP testing shall be conducted at actual storage temperature of the organic liquid in the tank. The permittee shall also conduct an API gravity testing. [District Rule 4623]
11. {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]
12. {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]
13. Permittee shall maintain records of TVP and API gravity 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]
14. Permittee shall maintain monthly records of average daily crude oil throughput and shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rules 2201 and 4623]
15. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4623]

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: S-1807-71-0

LEGAL OWNER OR OPERATOR: E&B NATURAL RESOURCES MGMT CORP
MAILING ADDRESS: ATT: SHAMS HASAN
1600 NORRIS ROAD
BAKERSFIELD, CA 93308

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
CA

SECTION: NE 30 TOWNSHIP: 26S RANGE: 19E

EQUIPMENT DESCRIPTION:
500 BBL FIXED ROOF CRUDE OIL SHIPPING/STOCK TANK WITH PV VENT(BCU - BLACKWELLS CORNER FIELD)

CONDITIONS

1. Facilities S-1807 and S-6826 are part of the same stationary source. [District Rule 2201]
2. ATC shall be implemented concurrently with or subsequent to ATC S-1807-25-2. [District Rule 2201]
3. {3804} The permittee shall not emit more than one half of the major source threshold based on a rolling 12-month summary of actual emissions. [District Rule 2530, 6.1]
4. {3805} The permittee shall maintain a record of the rolling 12-month summary of actual emissions from permitted operations. This record shall be kept on site and made available to the District upon request. [District Rule 2530, 6.1]
5. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
6. Crude oil throughput shall not exceed 150 barrels per day based on a monthly average. [District Rule 2201]
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 Rules 2201 and 4623]
8. VOC emission rate from the tank shall not exceed 8.4 lb/day. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (861) 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
Arnaud Marjolle, Director of Permit Services

S-1807-71-0: Sep 30 2014 9:17AM - EDOENBLR : Joint Inspection NOT Required

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12. {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]
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15. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2201 and 4623]

DRAFT