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-1144500

Dear Mr. Hassan:

Enclosed for your review and comment is the District's analysis of E&B Natural Resources's application for an 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 Ms. Gurpreet Brar of Permit Services at (559) 230-5926.

Sincerely,

Arnaud Marjollet  
Director of Permit Services

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

E&B Natural Resources Management is a heavy oil production facility applying for Authority to Construct (ATC) permits for the installation of a new 250 bbl crude oil test tank with P/V valve, and for converting an existing 230 bbl test tank under permit unit S-1807-38 to a wash tank.

Facilities S-1807 and S-6826 are the same Stationary Source, which is a Major Source for VOCs, based on potential emissions. A Title V operating permit is not required because the source is subject to Rule 2530, Federally Enforceable Potential to Emit, and has permit conditions limiting the total actual VOC emissions to less than half the major source threshold.

The current Permit to Operate (PTO) S-1807-38-2 is 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 2520  Federally Mandated Operating Permits (6/21/01)
- 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

The tanks are located at the WAGE Lease, NW Section 19, 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, pursuant to CH&SC 42301.6, California Health and Safety Code (School Notice), public notification is not required.

IV. Process Description

E&B operates a heavy oil production facility. Oil is pumped out of the ground by production wells. Crude oil from production wells enters wash tank for separation of oil and water. Produced water is sent to water tank while the oil is sent to storage tanks until it is shipped off-site. The test tanks are used to estimate the amount of oil and water in the crude oil received from a specific well. The test tank receives single day of the well production to determine the crude oil production from that well which is calculated as the difference between the fluid and the produced water.

There are three types of VOC emissions generated by a storage tank:

- Breathing losses (also called Standing losses) which is the normal evaporation of liquid in a tank. Breathing losses will increase if the temperature increases;
- Working losses are an increase in evaporation due to agitation of liquid from activities such as filling the tank; and
- Flashing losses occur when produced liquid (crude oil or condensate) is exposed to temperature increases or pressure decreases during the transfer from the production wells into atmospheric storage tanks due to release of hydrocarbons and carbon dioxide from liquid to surrounding air when the liquid changes temperature and pressure, also known as phase change.

An existing 230 bbl test tank will be converted to a constant level wash tank with a pressure/vacuum relief device, and a new 250 bbl test tank with a pressure/vacuum relief device will be added to the WAGE tank battery under this project.

The pre-project and post-project facility diagrams are included in Attachment II.

V. Equipment Listing

Pre-Project Equipment Description:

S-1807-38-2: 230 BBL OIL TEST TANK (WAGE LEASE, BLACKWELLS CORNER FIELD)

Proposed Modification:

S-1807-38-3: MODIFICATION OF 230 BBL OIL TEST TANK (WAGE LEASE, BLACKWELLS CORNER FIELD): CHANGE SERVICE FROM TEST TANK TO WASH TANK WITH P/V VALVE (CONSTANT LEVEL OPERATION)
S-1807-72-0: 250 BBL CRUDE OIL TEST TANK WITH PV VALVE (WAGE LEASE, BLACKWELLS CORNER FIELD)

Post Project Equipment Description:

S-1807-38-3: 230 BBL CRUDE OIL WASH TANK WITH PV VALVE (WAGE LEASE, BLACKWELLS CORNER FIELD)

S-1807-72-0: 250 BBL CRUDE OIL TEST TANK WITH PV VALVE (WAGE LEASE, BLACKWELLS CORNER FIELD)

VI. Emission Control Technology Evaluation

The proposed tanks 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 and 365 days/yr
- The tanks emit only volatile organic compounds (VOCs)
- The crude oil is less than 26° API (per applicant)
- S-1807-38 (230 bbl) dimensions: 9 ft diameter x 20 ft high (per applicant)
- S-1807-72 (250 bbl) dimensions: 10.5 ft diameter x 16 ft high (per applicant)
- Tank temperature, ambient, 77.65 °F (per applicant)
- VOCs molecular weight, 100 lb/lb-mol (default)
- The throughput of crude oil is calculated as the difference between the fluid received from the well and the produced water.

S-1807-38-2 (Pre-Project):

- Variable level operation with flashing losses (test tank)
- Crude oil throughput: 165 bbl/day (per current permit)
- TVP of oil = 0.5 psia (per applicant)

S-1807-38-3 (Post-Project):

- Constant level operation with flashing losses (wash tank)
- Throughputs: 10,000 bbl/day fluid, and 50 bbl/day oil (per applicant)
- TVP of oil = 0.5 psia (per applicant)
S-1807-72-0:

- Variable level operation with flashing losses (test tank)
- Crude oil throughput: 500 bbl/day fluid, and 50 bbl/day oil (per applicant)
- TVP of oil = 0.1 psia (per applicant)

B. Emission Factors

Both the daily and annual PE is 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)

S-1807-72-0:

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

S-1807-38-2:

The daily and annual PE1 for this tank is as calculated in Attachment III.

<table>
<thead>
<tr>
<th>Emissions Unit</th>
<th>Daily Emissions (lb-VOC/day)</th>
<th>Annual Emissions (lb-VOC/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-1807-38-2</td>
<td>11.9</td>
<td>4,328</td>
</tr>
<tr>
<td>S-1807-72-0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ΣPE1</td>
<td>11.9</td>
<td>4,328</td>
</tr>
</tbody>
</table>

2. Post Project Potential to Emit (PE2)

The daily and annual PE2 for both tanks is as calculated in Attachment III.

<table>
<thead>
<tr>
<th>Emissions Unit</th>
<th>Daily Emissions (lb-VOC/day)</th>
<th>Annual Emissions (lb-VOC/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-1807-38-3</td>
<td>1.1</td>
<td>392</td>
</tr>
<tr>
<td>S-1807-72-0</td>
<td>5.3</td>
<td>1,928</td>
</tr>
<tr>
<td>ΣPE2</td>
<td>6.4</td>
<td>2,320</td>
</tr>
</tbody>
</table>
GHG Emissions

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

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

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

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

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

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

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

5. Major Source Determination

Rule 2201 Major Source Determination:

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

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

This source is an existing Major Source for VOC emissions and will remain a Major Source for VOC. No change in other pollutants are proposed or expected as a result of this project.
Rule 2410 Major Source Determination:

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

<table>
<thead>
<tr>
<th>PSD Major Source Determination (tons/year)</th>
<th>NO2</th>
<th>VOC</th>
<th>SO2</th>
<th>CO</th>
<th>PM</th>
<th>PM10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated Facility PE before Project Increase *</td>
<td>10</td>
<td>&gt;378</td>
<td>18</td>
<td>52</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>PSD Major Source Thresholds</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>PSD Major Source ? (Y/N)</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

*Based on the SSPE2 in project #S-1143485

As shown above, the facility is an existing PSD major source for at least one pollutant, VOC, so it is a PSD Major Source.

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 '-38 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 '-38 is the pre-project potential to emit (PE1).

BE for '-72 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.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Project PE2 (lb/year)</th>
<th>Threshold (lb/year)</th>
<th>SB 288 Major Modification Calculation Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>0</td>
<td>50,000</td>
<td>No</td>
</tr>
<tr>
<td>SOx</td>
<td>0</td>
<td>80,000</td>
<td>No</td>
</tr>
<tr>
<td>PM10</td>
<td>0</td>
<td>30,000</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>2,320</td>
<td>50,000</td>
<td>No</td>
</tr>
</tbody>
</table>

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 major modifications are also federal major modifications, unless they qualify for either a "Less-Than-Significant Emissions Increase" exclusion or a "Plantwide Applicability Limit" (PAL) exclusion.

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

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

Since this project consists of both existing and new emissions units, the "hybrid test" specified in 40 CFR(a)(2)(ii)(F) is applicable and requires that the NEI determination be based on the sum of the individual NEI determinations for existing emissions units (NEI_E) and new emissions units (NEI_N) pursuant to 40 CFR(a)(2)(ii)(C) and (D) respectively. Therefore,

\[
\text{NEI} = \text{NEI}_E + \text{NEI}_N
\]

**Net Emission Increase for Existing Unit (NEI_E) (S-1807-38-3):**

The project's emission increase for each pollutant is equal to the sum of the differences between the projected actual emissions or PE and the baseline actual emissions (BAE) (for existing emission units) or the sum of the potentials to emit (for new emission unit).

\[
\text{NEI}_E = \text{PAE} - \text{BAE} - \text{UBC}
\]

Where:
- \(\text{PAE}\) = Projected Actual Emissions, and
- \(\text{BAE}\) = Baseline Actual Emissions
- \(\text{UBC}\) = 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.
In calculating the emission increase (PAE – BAE) the portion of the emissions after the project that the unit could have accommodated before the project (during the same period used to determine BAE) and that are unrelated to the particular project (including emissions increases due to product demand growth) are to be excluded. In other words, the difference in emissions between what the unit could have actually accommodated (legally and physically) before the project and the BAE are to be subtracted from any calculated increase, if the ability to utilize the previously unused capacity is not related to the current project. This quantity is termed "unused baseline capacity emissions".

In estimating the unused baseline capacity emissions, only those emissions that could have actually been accommodated (legally and physically) by the emission unit prior to the modification can be excluded when calculating the emission increase. Any increase in capacity utilization that is a result of the proposed modification cannot be counted when determining the unused baseline capacity emissions.

The PAE will be taken to be PE2 as a worst case scenario. The operator has selected years 2012 and 2013 to be the baseline period for the federal major modification calculations. Since this project does result in an increase in design capacity or potential to emit, and it does impact the ability of the emission unit to operate at a higher utilization rate, the UBC cannot be counted.

For this project,

\[ \text{NEI}_E = \text{PAE} - \text{BAE} \]

**Projected Actual Emissions**

As explained above, the PAE will be taken to be PE2 as a worst case scenario.

<table>
<thead>
<tr>
<th>Permit</th>
<th>NOx (lb/year)</th>
<th>SOx (lb/year)</th>
<th>PM(_{10}) (lb/year)</th>
<th>VOC (lb/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-1807-38-3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>392</td>
</tr>
</tbody>
</table>

**Baseline Actual Emissions**

The Federal Major Modification Baseline Actual Emissions will be re-calculated utilizing the Baseline Actual Emissions data shown in the SB 288 Major Modification section above and using the operator selected baseline period of years 2012 and 2013.
S-1807-38-3:

### VOC Baseline Actual Emissions (BAE)

<table>
<thead>
<tr>
<th>Year</th>
<th>Throughput (bbl/year)</th>
<th>TVP</th>
<th>VOC Emissions (lb/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>4,698</td>
<td>0.04</td>
<td>155</td>
</tr>
<tr>
<td>2013</td>
<td>15,979</td>
<td>0.04</td>
<td>280</td>
</tr>
</tbody>
</table>

### Baseline Actual Emissions (BAE)

<table>
<thead>
<tr>
<th>Permit Unit</th>
<th>Two Year Average</th>
<th>NOx (lb/year)</th>
<th>SOx (lb/year)</th>
<th>PM10 (lb/year)</th>
<th>VOC (lb/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-1807-38-3</td>
<td>2012-2013</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>218</td>
</tr>
</tbody>
</table>

### Federal Major Modification VOC Net Emissions Increase For Existing Unit (NEIE)

<table>
<thead>
<tr>
<th>Permit</th>
<th>PAE (lb/year)</th>
<th>BAE (lb/year)</th>
<th>NEIE (lb/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-1807-38-3</td>
<td>392</td>
<td>218</td>
<td>174</td>
</tr>
</tbody>
</table>

Net Emission Increase for New Unit (NEIN) (S-1807-72-0):

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

\[
NEIN = PE2N - BAE
\]

BAE = 0 for the new unit therefore NEIN = PE2N

### Federal Major Modification Net Emissions Increase For New Unit (NEIN)

<table>
<thead>
<tr>
<th>Permit</th>
<th>NOx (lb/year)</th>
<th>SOx (lb/year)</th>
<th>PM10 (lb/year)</th>
<th>VOC (lb/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-1807-72-0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,928</td>
</tr>
</tbody>
</table>

The NEI for this project is thus calculated as follows:

\[
NEI = NEIE + NEIN
\]

### Net Emission Increase (NEI)

<table>
<thead>
<tr>
<th>Permit</th>
<th>NOx (lb/year)</th>
<th>SOx (lb/year)</th>
<th>PM10 (lb/year)</th>
<th>VOC (lb/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-1807-38-3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>174</td>
</tr>
<tr>
<td>S-1807-72-0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,928</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2,102</td>
</tr>
<tr>
<td>Pollutant</td>
<td>NEI (lb/year)</td>
<td>Threshold (lb/year)</td>
<td>SB 288 Major Modification?</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>---------------</td>
<td>---------------------</td>
<td>---------------------------</td>
<td></td>
</tr>
<tr>
<td>NOx</td>
<td>0</td>
<td>0</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>SOx</td>
<td>0</td>
<td>80,000</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>PM10</td>
<td>0</td>
<td>30,000</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>VOC</td>
<td>2,102</td>
<td>0</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

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

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

Rule 2410 applies to 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.
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 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 VII.

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 test tank under ATC S-1807-72-0 with a PE greater than 2 lb/day for VOC. Therefore, BACT is triggered for VOCs for that emissions unit.

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 for relocated units.

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

AIPE = PE2 – HAPE

Where,

\[
AIPE = \text{Adjusted Increase in Permitted Emissions, (lb/day)}
\]

\[
PE2 = \text{Post-Project Potential to Emit, (lb/day)}
\]

\[
HAPE = \text{Historically Adjusted Potential to Emit, (lb/day)}
\]

\[
HAPE = PE1 \times (EF2/EF1)
\]

Where,

\[
PE1 = \text{The emissions unit's PE prior to modification or relocation, (lb/day)}
\]

\[
EF2 = \text{The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1}
\]

\[
EF1 = \text{The emissions unit's permitted emission factor for the pollutant before the modification or relocation}
\]

AIPE = PE2 – (PE1 * (EF2 / EF1))

\[
S-1807-38-3
\]

EF2/EF1 = 1.0

AIPE = 1.1 – (11.9 * (1.0))

= -10.8 lb/day

As demonstrated above, the AIPE is not greater than 2.0 lb/day for VOC emissions for this tank. Therefore BACT not triggered for AIPE for this modified emission unit.
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. In this project, that applies to S-1807-72-0, but not -38-3, which has lower emissions.

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 IV)

3. Top-Down BACT Analysis

Pursuant to the attached Top-Down BACT Analysis (see Attachment V), 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

The applicant has proposed this control so BACT is satisfied.

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.

<table>
<thead>
<tr>
<th>Offset Determination (lb/year)</th>
<th>NOx</th>
<th>SOx</th>
<th>PM_{10}</th>
<th>CO</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSPE2</td>
<td>19,871</td>
<td>36,841</td>
<td>21,852</td>
<td>103,744</td>
<td>&gt;756,256</td>
</tr>
<tr>
<td>Offset Thresholds</td>
<td>20,000</td>
<td>54,750</td>
<td>29,200</td>
<td>200,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Offsets triggered?</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
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.

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

Where,
\begin{align*}
PE2 &= \text{Post Project Potential to Emit, (lb/year)} \\
BE &= \text{Baseline Emissions, (lb/year)} \\
ICCE &= \text{Increase in Cargo Carrier Emissions, (lb/year)} \\
DOR &= \text{Distance Offset Ratio, determined pursuant to Section 4.8}
\end{align*}

BE = PE1 for:
\begin{itemize}
  \item Any unit located at a non-Major Source,
  \item Any Highly-Utilized Emissions Unit, located at a Major Source,
  \item Any Fully-Offset Emissions Unit, located at a Major Source, or
  \item Any Clean Emissions Unit, Located at a Major Source.
\end{itemize}

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:

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

\begin{align*}
\Sigma PE2 (VOC) &= 2,320 \text{ lb/year (see calculation in Section VII. C.2 above)} \\
\Sigma BE (VOC) &= 4,328 \text{ lb/year (see calculation in Section VII. C.2 above)} \\
ICCE &= 0 \text{ lb/year}
\end{align*}

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

\begin{align*}
&= (2,320 - 4,328) \\
&= -2,008 \text{ lb/yr}
\end{align*}

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 SSIP 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 SSIP1 and SSIP2 are compared to the offset thresholds in the following table.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>SSIP1 (lb/year)</th>
<th>SSIP2 (lb/year)</th>
<th>Offset Threshold</th>
<th>Public Notice Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>19,871</td>
<td>19,871</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>SOx</td>
<td>36,841</td>
<td>36,841</td>
<td>54,750 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>PM10</td>
<td>21,852</td>
<td>21,852</td>
<td>29,200 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>CO</td>
<td>103,744</td>
<td>103,744</td>
<td>200,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>&gt;758,264</td>
<td>&gt;756,256</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>SSPE1 (lb/year)</th>
<th>SSPE2 (lb/year)</th>
<th>SSIPE (lb/year)</th>
<th>SSIPE Public Notice Threshold (lb/year)</th>
<th>Public Notice Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>19,871</td>
<td>19,871</td>
<td>0</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>SOx</td>
<td>36,841</td>
<td>36,841</td>
<td>0</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>21,852</td>
<td>21,852</td>
<td>0</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>CO</td>
<td>103,744</td>
<td>103,744</td>
<td>0</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
<tr>
<td>VOC</td>
<td>&gt;758,264</td>
<td>&gt;756,256</td>
<td>-2,008</td>
<td>20,000 lb/year</td>
<td>No</td>
</tr>
</tbody>
</table>

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 EPA, and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATCs 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:

The following conditions will be placed on all ATCs:

- Crude oil throughput shall not exceed 50 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
- The tank shall be equipped with a fixed roof with no holes or openings [District Rule 2201] N

S-1807-38-3:

- Tank shall only operate at a constant level. [District Rule 2201] N
- VOC emission rate from the tank shall not exceed 1.1 lb/day. [District Rule 2201] N

S-1807-72-0:

- VOC emission rate from the tank shall not exceed 5.3 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.

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 ATCs:
S-1807-38-3 and -72-0:

- The permittee shall maintain monthly records of average daily crude oil throughput. [District Rule 2201] N

- The permittee shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rules 2201 and 4623] N

- All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rule 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 VI 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 NOx, 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. The following condition will be placed on both ATCs to ensure compliance with this Rule:

- {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] N

- {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] N

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, and the following condition is listed on the ATCs to ensure compliance.

• {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] N

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. The following condition is listed on the ATCs to ensure compliance.

• {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102] N

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.

As demonstrated above, there are no increases in emissions associated with this project, therefore a health risk assessment is not necessary and no further risk analysis is required.

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 facility has elected to comply with the requirements of this rule rather than taking an exemption according to Section 4.4 in order to avoid TVP and API Gravity Testing provisions pursuant to Section 6.2.
Each of the proposed tank is served by a pressure-vacuum relief valve. This rule also requires the tanks 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.

Therefore, the following conditions shall be placed on the ATCs to assure compliance:

- 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

- 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 leak-free condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623] N

- This tank shall be in a leak-free condition. A leak-free condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623. [District Rule 4623] N

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

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

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-1807-38-3 and -72-0 subject to the permit conditions on the attached draft ATCs in Attachment VIII.

X. Billing Information

<table>
<thead>
<tr>
<th>Annual Permit Fees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permit Number</td>
</tr>
<tr>
<td>S-1807-38-3</td>
</tr>
<tr>
<td>S-1807-72-0</td>
</tr>
</tbody>
</table>

Attachments

I. Existing PTO S-1807-38-2
II. Pre-Project and Post-Project Facility Diagrams
III. Tank Emissions Calculations
IV. BACT Guideline
V. BACT Analysis
VI. Statewide Compliance Statement
VII. Quarterly Net Emissions Change
VIII. Draft ATCs
ATTACHMENT I

Existing PTO S-1807-38-2
San Joaquin Valley
Air Pollution Control District

PERMIT UNIT: S-1807-38-2  EXPIRATION DATE: 05/31/2017
SECTION: NW19   TOWNSHIP: 26S   RANGE: 19E
EQUIPMENT DESCRIPTION:
230 BBL OIL TEST TANK (WAGE LEASE, BLACKWELLS CORNER FIELD)

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. Throughput shall not exceed 165 bbl/day. [District Rule 2201]
7. Permittee shall conduct true vapor pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rule 4623]
9. 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]
10. 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. 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]
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]
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]

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

Pre-Project and Post-Project Facility Diagrams
ATTACHMENT III

Tank Emissions Calculations
# Tank Input Data

<table>
<thead>
<tr>
<th>Permit Number (S-xxxx-xx-xx)</th>
<th>S-1807-38-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Tank I.D.</td>
<td></td>
</tr>
<tr>
<td>Nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)</td>
<td>1</td>
</tr>
<tr>
<td>Tank ROC vapor pressure (psia)</td>
<td>0.5</td>
</tr>
<tr>
<td>Liquid bulk storage temperature, Tb (°F)</td>
<td>100</td>
</tr>
<tr>
<td>Is this a constant-level tank? (yes, no)</td>
<td>No</td>
</tr>
<tr>
<td>Will flashing losses occur in this tank (only if first-line tank)? (yes, no)</td>
<td>Yes</td>
</tr>
<tr>
<td>Breather vent pressure setting range (psi)</td>
<td>0.06</td>
</tr>
<tr>
<td>Diameter of tank (feet)</td>
<td>9</td>
</tr>
<tr>
<td>Capacity of tank (bbl)</td>
<td>230</td>
</tr>
<tr>
<td>Conical or dome roof? (c, d)</td>
<td>c</td>
</tr>
<tr>
<td>Shell height of tank (feet)</td>
<td>20</td>
</tr>
<tr>
<td>Average liquid height (feet)</td>
<td>12</td>
</tr>
<tr>
<td>Are the roof and shell the same color? (yes, no)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

For roof:
- Color (1: Speck Al, 2: Diff Al, 3: Light, 4: Med, 5: Red, 6: White) | 4 |
- Condition (1: Good, 2: Poor) | 1 |

---

## Liquid Input Data

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum daily fluid throughput (bbl)</td>
<td>165</td>
<td></td>
</tr>
<tr>
<td>Maximum annual fluid throughput (bbl)</td>
<td>60,225</td>
<td></td>
</tr>
<tr>
<td>Maximum daily oil throughput (bbl) (used to calculate flashing loss)</td>
<td>165</td>
<td></td>
</tr>
<tr>
<td>Maximum annual oil throughput (bbl) (used to calculate flashing loss)</td>
<td>60,225</td>
<td></td>
</tr>
<tr>
<td>Molecular weight, Mw (lb/lb-mol)</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

## Calculated Values

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily maximum ambient temperature, Tax (°F)</td>
<td>77.65</td>
<td></td>
</tr>
<tr>
<td>Daily minimum ambient temperature, Tan (°F)</td>
<td>53.15</td>
<td></td>
</tr>
<tr>
<td>Daily total solar insulation factor, I (Btu/ft²·day)</td>
<td>1648.9</td>
<td></td>
</tr>
<tr>
<td>Atmospheric pressure, Pa (psia)</td>
<td>14.47</td>
<td></td>
</tr>
<tr>
<td>Water vapor pressure at daily maximum liquid surface temperature (Tlx), Pvx (psia)</td>
<td>99.0</td>
<td>0.9259</td>
</tr>
<tr>
<td>Water vapor pressure at daily minimum liquid surface temperature (Tln), Pvn (psia)</td>
<td>88.2</td>
<td>0.6653</td>
</tr>
<tr>
<td>Water vapor pressure at average liquid surface temperature (Tla), Pva (psia)</td>
<td>93.6</td>
<td>0.7903</td>
</tr>
<tr>
<td>Roof outage, Hro (feet)</td>
<td>0.0938</td>
<td></td>
</tr>
<tr>
<td>Vapor space volume, Vv (cubic feet)</td>
<td>514.90</td>
<td></td>
</tr>
<tr>
<td>Paint factor, alpha</td>
<td>0.68</td>
<td></td>
</tr>
<tr>
<td>Vapor density, Wv (lb/cubic foot)</td>
<td>0.0084</td>
<td></td>
</tr>
<tr>
<td>Daily vapor temperature range, delta Tv (degrees Rankine)</td>
<td>49.04</td>
<td></td>
</tr>
<tr>
<td>Vapor space expansion factor, Ke</td>
<td>0.1032</td>
<td></td>
</tr>
</tbody>
</table>

## Results

<table>
<thead>
<tr>
<th></th>
<th>lb/year</th>
<th>lb/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standing Storage Loss</td>
<td>163</td>
<td>0.45</td>
</tr>
<tr>
<td>Working Loss</td>
<td>3,011</td>
<td>8.25</td>
</tr>
<tr>
<td>Summarized Table</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Permit Number</td>
<td>5-1807-38-2</td>
<td></td>
</tr>
<tr>
<td>Facility Tank I.D.</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td>Tank capacity (bbl)</td>
<td></td>
<td>230</td>
</tr>
<tr>
<td>Tank diameter (ft)</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Tank shell height (ft)</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Conical or Dome Roof</td>
<td></td>
<td>Conical</td>
</tr>
<tr>
<td>Maximum Daily Fluid Throughput (bbl/day)</td>
<td></td>
<td>165</td>
</tr>
<tr>
<td>Maximum Annual Fluid Throughput (bbl/year)</td>
<td></td>
<td>60,225</td>
</tr>
<tr>
<td>Maximum Daily Oil Throughput (bbl/day)</td>
<td></td>
<td>165</td>
</tr>
<tr>
<td>Maximum Annual Oil Throughput (bbl/year)</td>
<td></td>
<td>60,225</td>
</tr>
<tr>
<td>Total Uncontrolled Daily Tank VOC Emissions (lb/day)</td>
<td></td>
<td>11.9</td>
</tr>
<tr>
<td>Total Uncontrolled Annual Tank VOC Emissions (lb/year)</td>
<td></td>
<td>4,328</td>
</tr>
</tbody>
</table>
### Tank Input Data

<table>
<thead>
<tr>
<th>Permit number (S-xxxx-xx-xx)</th>
<th>S-1807-38-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility tank I.D.</td>
<td></td>
</tr>
<tr>
<td>Nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}</td>
<td>1</td>
</tr>
<tr>
<td>Tank ROC vapor pressure (psia)</td>
<td>0.5</td>
</tr>
<tr>
<td>Liquid bulk storage temperature, Tb (°F)</td>
<td>100</td>
</tr>
<tr>
<td>Is this a constant-level tank? {yes, no}</td>
<td>Yes</td>
</tr>
<tr>
<td>Will flashing losses occur in this tank (only if first-line tank)? {yes, no}</td>
<td>Yes</td>
</tr>
<tr>
<td>Breather vent pressure setting range (psi)</td>
<td>0.06</td>
</tr>
<tr>
<td>Diameter of tank (feet)</td>
<td>9</td>
</tr>
<tr>
<td>Capacity of tank (bbl)</td>
<td>230</td>
</tr>
<tr>
<td>Conical or dome roof? {c, d}</td>
<td>c</td>
</tr>
<tr>
<td>Shell height of tank (feet)</td>
<td>20</td>
</tr>
<tr>
<td>Average liquid height (feet)</td>
<td>18</td>
</tr>
<tr>
<td>Are the roof and shell the same color? {yes, no}</td>
<td>Yes</td>
</tr>
</tbody>
</table>

#### 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 ---
--- This row only used if shell is different color from roof ---

### Liquid Input Data

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum daily fluid throughput (bbl)</td>
<td>10,000</td>
<td></td>
</tr>
<tr>
<td>Maximum annual fluid throughput (bbl)</td>
<td>3,650,000</td>
<td></td>
</tr>
<tr>
<td>Maximum daily oil throughput (bbl) (used to calculate flashing loss)</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Maximum annual oil throughput (bbl) (used to calculate flashing loss)</td>
<td>18,250</td>
<td></td>
</tr>
<tr>
<td>Molecular weight, Mw (lb/lb-mol)</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

### Calculated Values

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily maximum ambient temperature, Tax (°F)</td>
<td>77.65</td>
<td></td>
</tr>
<tr>
<td>Daily minimum ambient temperature, Tan (°F)</td>
<td>53.15</td>
<td></td>
</tr>
<tr>
<td>Daily total solar insulation factor, I (Btu/ft²-day)</td>
<td>1648.9</td>
<td></td>
</tr>
<tr>
<td>Atmospheric pressure, Pa (psia)</td>
<td>14.47</td>
<td></td>
</tr>
<tr>
<td>Water vapor pressure at daily maximum liquid surface temperature (Tlx), Pvx (psia)</td>
<td>99.0 0.9259</td>
<td></td>
</tr>
<tr>
<td>Water vapor pressure at daily minimum liquid surface temperature (Tln), Pvn (psia)</td>
<td>88.2 0.6653</td>
<td></td>
</tr>
<tr>
<td>Water vapor pressure at average liquid surface temperature (Tla), Pva (psia)</td>
<td>93.6 0.7903</td>
<td></td>
</tr>
<tr>
<td>Roof outage, Hro (feet)</td>
<td>0.0938</td>
<td></td>
</tr>
<tr>
<td>Vapor space volume, Vv (cubic feet)</td>
<td>133.20</td>
<td></td>
</tr>
<tr>
<td>Paint factor, alpha</td>
<td>0.68</td>
<td></td>
</tr>
<tr>
<td>Vapor density, Wv (lb/cubic foot)</td>
<td>0.0084</td>
<td></td>
</tr>
<tr>
<td>Daily vapor temperature range, delta Tv (degrees Rankine)</td>
<td>49.04</td>
<td></td>
</tr>
<tr>
<td>Vapor space expansion factor, Ke</td>
<td>0.1032</td>
<td></td>
</tr>
</tbody>
</table>

### Results

<table>
<thead>
<tr>
<th></th>
<th>lb/year</th>
<th>lb/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standing Storage Loss</td>
<td>42</td>
<td>0.12</td>
</tr>
<tr>
<td>Working Loss</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
## Summary Table

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>6-1807-38-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Tank I.D.</td>
<td>--</td>
</tr>
<tr>
<td>Tank capacity (bbl)</td>
<td>230</td>
</tr>
<tr>
<td>Tank diameter (ft)</td>
<td>9</td>
</tr>
<tr>
<td>Tank shell height (ft)</td>
<td>20</td>
</tr>
<tr>
<td>Conical or Dome Roof</td>
<td>Conical</td>
</tr>
<tr>
<td>Maximum Daily Fluid Throughput (bbl/day)</td>
<td>10,000</td>
</tr>
<tr>
<td>Maximum Annual Fluid Throughput (bbl/year)</td>
<td>3,650,000</td>
</tr>
<tr>
<td>Maximum Daily Oil Throughput (bbl/day)</td>
<td>50</td>
</tr>
<tr>
<td>Maximum Annual Oil Throughput (bbl/year)</td>
<td>18,250</td>
</tr>
<tr>
<td>Total Uncontrolled Daily Tank VOC Emissions (lb/day)</td>
<td>1.1</td>
</tr>
<tr>
<td>Total Uncontrolled Annual Tank VOC Emissions (lb/year)</td>
<td>392</td>
</tr>
</tbody>
</table>
## Tank Input Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>permit number (S-xxxx-xx-xx)</td>
<td>S-1807-72-0</td>
</tr>
<tr>
<td>nearest city {1: Bakersfield, 2: Fresno, 3: Stockton}</td>
<td>1</td>
</tr>
<tr>
<td>tank ROC vapor pressure (psia)</td>
<td>0.1</td>
</tr>
<tr>
<td>liquid bulk storage temperature, Tb (°F)</td>
<td>100</td>
</tr>
<tr>
<td>is this a constant-level tank? {yes, no}</td>
<td>No</td>
</tr>
<tr>
<td>will flashing losses occur in this tank (only if first-line tank)? {yes, no}</td>
<td>Yes</td>
</tr>
<tr>
<td>breather vent pressure setting range (psi)</td>
<td>0.06</td>
</tr>
<tr>
<td>diameter of tank (feet)</td>
<td>10.5</td>
</tr>
<tr>
<td>capacity of tank (bbl)</td>
<td>250</td>
</tr>
<tr>
<td>conical or dome roof? {c, d}</td>
<td>c</td>
</tr>
<tr>
<td>shell height of tank (feet)</td>
<td>16</td>
</tr>
<tr>
<td>average liquid height (feet)</td>
<td>10</td>
</tr>
<tr>
<td>are the roof and shell the same color? {yes, no}</td>
<td>yes</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>maximum daily fluid throughput (bbl)</td>
<td>500</td>
</tr>
<tr>
<td>maximum annual fluid throughput (bbl)</td>
<td>182,500</td>
</tr>
<tr>
<td>maximum daily oil throughput (bbl)(used to calculate flashing loss)</td>
<td>50</td>
</tr>
<tr>
<td>maximum annual oil throughput (bbl)(used to calculate flashing loss)</td>
<td>18,250</td>
</tr>
<tr>
<td>molecular weight, Mw (lb/lb-mol)</td>
<td>100</td>
</tr>
</tbody>
</table>

## Calculated Values

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>daily maximum ambient temperature, Tax (°F)</td>
<td>77.65</td>
</tr>
<tr>
<td>daily minimum ambient temperature, Tan (°F)</td>
<td>53.15</td>
</tr>
<tr>
<td>daily total solar insulation factor, I (Btu/ft²·day)</td>
<td>1648.9</td>
</tr>
<tr>
<td>atmospheric pressure, Pa (psia)</td>
<td>14.47</td>
</tr>
<tr>
<td>water vapor pressure at daily maximum liquid surface temperature (Tlx), Pvx (psia)</td>
<td>99.0 0.9259</td>
</tr>
<tr>
<td>water vapor pressure at daily minimum liquid surface temperature (Tln), Pvn (psia)</td>
<td>88.2 0.6653</td>
</tr>
<tr>
<td>water vapor pressure at average liquid surface temperature (Tia), Pva (psia)</td>
<td>93.6 0.7903</td>
</tr>
<tr>
<td>roof outage, Hro (feet)</td>
<td>0.1084</td>
</tr>
<tr>
<td>vapor space volume, Vv (cubic feet)</td>
<td>529.01</td>
</tr>
<tr>
<td>paint factor, alpha</td>
<td>0.68</td>
</tr>
<tr>
<td>vapor density, Wv (lb/cubic foot)</td>
<td>0.0017</td>
</tr>
<tr>
<td>daily vapor temperature range, delta Tv (degrees Rankine)</td>
<td>49.04</td>
</tr>
<tr>
<td>vapor space expansion factor, Ke</td>
<td>0.1032</td>
</tr>
</tbody>
</table>

## Results

<table>
<thead>
<tr>
<th></th>
<th>lb/year</th>
<th>lb/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standing Storage Loss</td>
<td>34</td>
<td>0.09</td>
</tr>
<tr>
<td>Working Loss</td>
<td>1,825</td>
<td>5.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Flashing Loss</td>
<td>70</td>
<td>0.19</td>
</tr>
<tr>
<td>Total Uncontrolled Tank VOC Emissions</td>
<td>1,928</td>
<td>5.3</td>
</tr>
</tbody>
</table>

### Summary Table

<table>
<thead>
<tr>
<th>Permit Number</th>
<th>5-1807-72-0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Tank I.D.</td>
<td>--</td>
</tr>
<tr>
<td>Tank capacity (bbl)</td>
<td>250</td>
</tr>
<tr>
<td>Tank diameter (ft)</td>
<td>10.5</td>
</tr>
<tr>
<td>Tank shell height (ft)</td>
<td>16</td>
</tr>
<tr>
<td>Conical or Dome Roof</td>
<td>Conical</td>
</tr>
<tr>
<td>Maximum Daily Fluid Throughput</td>
<td>500</td>
</tr>
<tr>
<td>Maximum Annual Fluid Throughput</td>
<td>182,500</td>
</tr>
<tr>
<td>Maximum Daily Oil Throughput</td>
<td>50</td>
</tr>
<tr>
<td>Maximum Annual Oil Throughput</td>
<td>18,250</td>
</tr>
<tr>
<td>Total Uncontrolled Daily Tank VOC Emissions (lb/day)</td>
<td>5.3</td>
</tr>
<tr>
<td>Total Uncontrolled Annual Tank VOC Emissions (lb/year)</td>
<td>1,928</td>
</tr>
</tbody>
</table>
ATTACHMENT IV

BACT Guideline
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 **

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Achieved in Practice or contained in the SIP</th>
<th>Technologically Feasible</th>
<th>Alternate Basic Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOC</td>
<td>PV-vent set to within 10% of maximum allowable pressure</td>
<td>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).</td>
<td></td>
</tr>
</tbody>
</table>

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

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

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

Top-Down BACT Analysis
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

1. 99% Vapor Control Option:

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

Control Equipment Costs:

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapor Recovery Unit (VRU)</td>
<td>$46,952</td>
</tr>
<tr>
<td>Piping costs</td>
<td>$40,000</td>
</tr>
<tr>
<td>Scrubber/Compressor</td>
<td>$23,763</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$110,715</strong></td>
</tr>
</tbody>
</table>

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.

\[
A = P * \frac{(1 + i)^n}{(1 + i^n - 1)}
\]

\[
A = $110,715 * \frac{(.10(1 + .10)^10)}{(1 + .10)^10 - 1)}
\]

\[
A = $18,013
\]

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

\[
\text{Total Annual Costs} = \text{Equivalent Annual Control Equipment Cost} + \text{Annual Operating Cost}
\]

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

Annual Emissions Reduction

\[
PE2 = 1,928 \text{ lb/yr} (0.96 \text{ tons/yr})
\]

Control System with 99\% efficiency = 1.0 tons/yr * 0.99

\[
= 0.95 \text{ tons/yr reduction}
\]

Control Cost per Section X(A)(4)

\[
\text{Control Cost} = \frac{($30,013/yr)}{(0.95 \text{ tons VOC/yr})}
\]

\[
= $31,592 \text{ ton VOC}
\]

This exceeds the cost effectiveness threshold for VOCs of $17,500/ton. Therefore, the 99\% vapor control option is not cost effective.

2. PV Relief Valve Option:

The applicant is proposing this option and it is considered to be Achieved-in-Practice, so a cost effectiveness analysis is not required.

Step 5 - Select BACT

There is only one remaining option, so BACT for this unit is

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

Statewide Compliance Form
December 22, 2014

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

Subject: Project Number 1144500 — (S-1807) Wage Tank Battery Redesign

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 Manager

Title
ATTACHMENT VII

Quarterly Net Emissions Change
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:

\[ \text{QNEC} = \text{PE2} - \text{BE}, \]

where:

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

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-1807-38-3**

\[ \text{PE2}_{\text{quarterly}} = \frac{\text{PE2}_{\text{annual}}}{4 \text{ quarters/year}} \]
\[ = \frac{392 \text{ lb/year}}{4 \text{ qtr/year}} \]
\[ = 98 \text{ lb VOC/qtr} \]

\[ \text{BE}_{\text{quarterly}} = \frac{\text{BE}_{\text{annual}}}{4 \text{ quarters/year}} \]
\[ = \frac{4,328 \text{ lb/year}}{4 \text{ qtr/year}} \]
\[ = 1,082 \text{ lb VOC/qtr} \]

\[ \text{QNEC} = 98 \text{ lb VOC/qtr} - 1,082 \text{ lb VOC/qtr} \]
\[ \text{QNEC} = -984 \text{ lb VOC/qtr} \]

**S-1807-72-0**

\[ \text{PE2}_{\text{quarterly}} = \frac{\text{PE2}_{\text{annual}}}{4 \text{ quarters/year}} \]
\[ = \frac{1,928 \text{ lb/year}}{4 \text{ qtr/year}} \]
\[ = 482 \text{ lb VOC/qtr} \]

\[ \text{BE}_{\text{quarterly}} = \frac{\text{BE}_{\text{annual}}}{4 \text{ quarters/year}} \]
\[ = \frac{0 \text{ lb/year}}{4 \text{ qtr/year}} \]
\[ = 0 \text{ lb VOC/qtr} \]

\[ \text{QNEC} = 482 \text{ lb VOC/qtr} - 0 \text{ lb VOC/qtr} \]
\[ \text{QNEC} = 482 \text{ lb VOC/qtr} \]
San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-1807-38-3

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

MAILING ADDRESS: AU: SHAMS HASAN
1600 NORRIS ROAD
BAKERSFIELD, CA 93308

LOCATION: HEAVY OIL WESTERN STATIONARY SOURCE
CA

SECTION: NW19 TOWNSHIP: 26S RANGE: 19E

EQUIPMENT DESCRIPTION:
MODIFICATION OF 230 BBL OIL TEST TANK (WAGE LEASE, BLACKWELLS CORNER FIELD): CHANGE SERVICE FROM TEST TANK TO WASH TANK WITH P/V VALVE (CONSTANT LEVEL OPERATION)

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. (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]

6. 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]

7. Crude oil throughput shall not exceed 50 barrels per day based on a monthly average. [District Rule 2201]

8. VOC emissions from this tank shall not exceed 1.1 pounds in any one day. [District Rule 2201]

9. The tank shall be equipped with a fixed roof with no holes or openings. [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

Arnaud Marjollet, Director of Permit Services
S-1807-38-3 Mar 4 2016 2:02PM - DRAFT : Joint Inspection NOT Required
10. Tank shall only operate at a constant level. [District Rule 2201]

11. This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in gas-tight condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623]

12. This tank shall be in a gas-tight condition. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623. [District Rule 4623]

13. The permittee shall maintain monthly records of average daily crude oil throughput. [District Rule 2201]

14. The permittee shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rules 2201 and 4623]

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

PERMIT NO: S-1807-72-0

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

EQUIPMENT DESCRIPTION:
250 BBL CRUDE OIL TEST TANK WITH P/V VALVE (WAGE LEASE, BLACKWELLS CORNER FIELD)

CONDITIONS

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. 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]
6. 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]
7. Crude oil throughput shall not exceed 50 barrels per day based on a monthly average. [District Rule 2201]
8. VOC emissions from this tank shall not exceed 5.3 pounds in any one day. [District Rule 2201]
9. The tank shall be equipped with a fixed roof with no holes or openings. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

Arnaud Marjolle, Director of Permit Services

Southern Regional Office • 34946 Flyover Court • Bakersfield, CA 93308 • (661) 392-5500 • Fax (661) 392-5585
10. {2486} This tank shall be equipped with a pressure-vacuum (PV) relief valve set to within 10% of the maximum allowable working pressure of the tank, permanently labeled with the operating pressure settings, properly maintained in good operating order in accordance with the manufacturer's instructions, and shall remain in gas-tight condition except when the operating pressure exceeds the valve's set pressure. [District Rule 4623]

11. {2487} This tank shall be in a gas-tight condition. A gas-tight condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623. [District Rule 4623]

12. The permittee shall maintain monthly records of average daily crude oil throughput. [District Rule 2201]

13. The permittee shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, and API gravity. [District Rules 2201 and 4623]

14. {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]