San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

FEB 0 8 2018

Mr. Zachary Dranshoff
California Resourcs Production Corp
11109 River Run Blvd
Bakersfield, CA 93311

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
Facility Number: S-8452
Project Number: S-1174147

Dear Mr. Dranshoff:

Enclosed for your review is the District's analysis of an application for Authority to Construct for the facility identified above. You requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The project authorizes a new tank.

After addressing all comments made during the 30-day public notice and the 45-day EPA comment periods, the District intends to issue the Authority to Construct with a Certificate of Conformity. Please submit your comments within the 30-day public comment period, as specified in the enclosed public notice. Prior to operating with modifications authorized by the Authority to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (559) 230-5900.

Thank you for your cooperation in this matter.

Sincerely,

Arnaud Marjollet
Director of Permit Services

Enclosures

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

Seyed Sadredin
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Authority to Construct
Application Review

Fixed Roof Oil Field Production Tank < 5000 BBLs
Uncontrolled Emissions Less than 6 tons/year
Heavy Oil

Facility Name:	California Resources Production Corp	Date:	1/16/18
Mailing Address:	11109 River Run Blvd Bakersfield, CA 93311	Engineer:	Richard Edgehill
		Lead Engineer:	Richard Karrs
Contact Person:	Zachary Dranshoff		
Telephone:	(661) 529-4368		
Application #:	S-8452-94-0		

Project #: 1174147
Deemed Complete: January 11, 2018

I. Proposal

California Resources Production Corp (CRPC) is requesting an Authority to Construct (ATC) for a 4900 bbl fixed-roof wash tank equipped with a pressure-vacuum (PV) relief valve. The project will result in an increase in VOC emissions.

The project is a Federal Major Modification. BACT, offsets, and public notice are required.

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

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (2/08/16)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 2410	Prevention of Significant Deterioration (Adopted 6/16/11, effective 11/26/12)
Rule 4001	New Source Performance Standards,

Subpart Kb (Amended 4/14/99) - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) Is not applicable. This subpart does not apply to vessels with a design capacity ≤ 1,589.874 m^3 (≤ 420,000 gallons) used for petroleum or condensate stored, processed, or treated prior to custody transfer. The capacity of this tank is ≤ 420,000 gallons, and it stores crude oil prior to custody transfer; therefore, this subpart does not apply to the tank in this project.

Subpart OOOO (Adopted 8/16/2012) - Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution.

Rule 4101 Visible Emissions (04/20/05)
Rule 4102 Nuisance (12/17/92)
Rule 4623 Storage of Organic Liquids (05/19/05)
CH&SC 41700 Health Risk Assessment
CH&SC 42301.6 School Notice
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The tank will be authorized to operate at CRPC's Security facility, NE Section 16, T27S, R28E, within CRPC's Heavy Oil Central Stationary Source. It will not be authorized to operate within 1,000 feet of the outer boundary of any K-12 school. Therefore, pursuant to CH&SC 42301.6, California Health and Safety Code (School Notice), public notification is not required.

A project location map is included in **Attachment I**.

IV. Process Description

The tanks and vessels at the Security Tank Facility receive production prior to custody transfer. The 4900 bbl tank in this project will operate as a wash tank.

Pre- and post-project process diagrams are included in **Attachment II**.

V. Equipment Listing

Post-Project Equipment Description:

S-8452-94-0: 4900 BBL CRUDE OIL WASH TANK WITH PRESSURE VACUUM (PV) VALVE

VI. Emission Control Technology Evaluation

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

VII. General Calculations

A. Assumptions

- Facility will operate 24 hours per day, 7 days per week, and 52 weeks per year.
- The tank will emit only volatile organic compounds (VOCs),
- TVP of oil = 0.1 psia (Applicant)
- Tank temperature, 110° F
- Tank will operate at constant level
- Flashing losses will occur and thus VOC emissions are dependent on throughput
- Crude oil throughput, 2,000 bbl/day (monthly daily average)
- VOCs molecular weight, 100 lb/lbmol

B. Emission Factors

Both the daily and annual PE will be based on the results from 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, (PE_1)

Permit unit	VOC - Daily PE1 (lb/day)	VOC- Annual PE1 (lb/Year)
PTO S-8452-94-0	0.0	0

2. Post Project Potential to Emit, (PE_2)

Permit unit	VOC - Daily PE1 (lb/day)	VOC- Annual PE1 (lb/Year)
PTO S-8452-94-0	8.1	2,972

The 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.

The facility 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 SSPE1 calculations for these pollutants are 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.

The facility 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

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)						
	NO_2	VOC	SO_2	CO	PM	PM_{10}
Estimated Facility PE before Project Increase		112		202*		
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source ? (Y/N)	N	N	N	N	N	N

*SSPE Calculator emissions from PTOs only (highest value)

As shown above, the facility is not an existing PSD major source for at least one pollutant.

6. Baseline Emissions (BE)

a. Annual BE

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

BE = Pre-project Potential to Emit 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 Section 3.23

Since tank S-8452-94 is a new emissions unit, the BE is equal to 0.

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	2,972	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.

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

Therefore,

Emission Increase (EI) = 2,972 lbs/yr

This project constitutes a Federal Major Modification.

Federal Offset Quantities:

The Federal offset quantity is only calculated only for the pollutants for which the project is a Federal Major Modification. The Federal offset quantity is the sum of the annual emission changes for all new and modified emission units in a project calculated as the potential to emit after the modification (PE2) minus the actual emissions (AE) during the baseline period for each emission unit times the applicable federal offset ratio. There are no special calculations performed for units covered by an SLC.

VOC **Federal Offset Ratio** **1.5**

Permit No.	Actual Emissions (lb/year)	Potential Emissions (lb/year)	Emissions Change (lb/yr)
S-8452-94	0	2,972	2,972
			0
			0
			0
		Net Emission Change (lb/year):	2,972
		Federal Offset Quantity: (NEC * 1.5)	4,458

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)

I. Project Emissions Increase - New Major Source Determination

The post-project potentials to emit from all new and modified units are compared to the PSD major source thresholds to determine if the project constitutes a new major source subject to PSD requirements.

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)(i). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO_2	VOC	SO_2	CO	PM	PM_{10}
Total PE from New and Modified Units	0	1.5	0	0	0	0
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	N	N	N	N	N	N

As shown in the table above, the potential to emit for the project, by itself, does not exceed any PSD major source threshold. Therefore Rule 2410 is not applicable and no further analysis is required.

10. Quarterly Net Emissions Change (QNEC)

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

QNEC = PE2 - BE, where:

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

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

$PE2_{quarterly}$ = $PE2_{annual}$ ÷ 4 quarters/year
= 2,972 lb/year ÷ 4 qtr/year
= 743 lb VOC/qtr

$BE_{quarterly}$ = BE_{annual} ÷ 4 quarters/year
= 0 lb/year ÷ 4 qtr/year
= 0 lb VOC/qtr

QNEC = 743 – 0
= 743 lb VOC/qtr

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

The applicant is not proposing to install a new emissions unit with a PE for VOC greater than 2 lb/day. BACT will be triggered.

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

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

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

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

d. SB 288/Federal Major Modification

As discussed in Section VII.C.7 and VII.C.8 above, this project constitutes a Federal Major Modification for VOC emissions. Therefore, BACT is triggered for VOCs.

2. BACT Guidance

Per District Policy APR 1305, Section IX, "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 for source categories or classes covered in the BACT Clearinghouse, relevant information under each of the following steps may be simply cited from the Clearinghouse without further analysis."

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

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

Pursuant to the attached Top-Down BACT Analysis (see **Attachment 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 Applicability			
Pollutant	**SSPE2 (lb/yr)**	**Offset Threshold Levels (lb/yr)**	**Offsets Calculations Required?**
VOC	>20,000	20,000	Yes

2. Quantity of Offsets Required

As shown in the table above, the SSPE2 meets or exceeds the offset threshold levels for VOCs. Therefore, offsets calculation will be required.

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

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

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

BE = PE1 for:

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

otherwise,

BE = HAE

The tank is new; therefore BE = 0. Also, there is only one emissions unit associated with this project and there are no increases in cargo carrier emissions; therefore offsets can be determined as follows:

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

PE2 (VOC) = 2,972 lb/year
BE (VOC) = 0 lb/year
ICCE = 0 lb/year

The project is a Federal Major Modification and therefore the correct offset ratio for VOCs is 1.5:1.

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

Offsets Required (lb/year) = ([2,972 – 0] + 0) x 1.5

= 2,972 x 1.5
= 4,458 lb VOC/year

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

Quarterly offsets required (lb/qtr) = (4,458 lb VOC/year) ÷ (4 quarters/year)
= 1,114.5 lb/qtr

Therefore, the appropriate quarterly emissions to be offset are as follows:

1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total Annual
1,114	1,114	1,115	1,115	4,458

The applicant has stated that the facility plans to use ERC certificates S-1708-1 to offset the increase in VOC emissions associated with this project. The above certificate has available quarterly VOC credits as follows:

	Rsvd Q1	Rsvd Q2	Rsvd Q3	Rsvd Q4	ERC Project	S	T	Certificate	Pollutant
☑	165	2,471	2,975	390		V	S	S-1708-1	VOC

Rule 2201 allows AERs that occurred 2nd and 3rd qtr to be used at any other time in the year. Note that 1st and 4th qtr ERC are deficient by 1,114 – 165 = 949 lb/qtr and 1,115 – 390 lb/qtr = 725 lb/qtr, respectively. Therefore, the following ERCs have been reserved for the project

ERC	1st qtr	2nd qtr	3rd qtr	4th qtr
S-1708-1	165	1,114+ 949 (to 1st) = 2,063	1,115 + 725 (to 4th) = 1,840	390

	Rsvd Q1	Rsvd Q2	Rsvd Q3	Rsvd Q4	ERC Project	S	T	Certificate	Pollutant
☑	165	2,063	1,840	390		V	S	S-1708-1	VOC

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

Proposed Rule 2201 (offset) Conditions:

- *{GC# 4447 - edited} Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter – 1,114 lb, 2nd quarter – 1,114 lb, 3rd quarter – 1,115 lb, and fourth quarter – 1,115 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 4/21/11) for the ERC specified below. [District Rule 2201]*

- *ERC certificate S-1708-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]*

C. Public Notification

1. Applicability

Public noticing is required for:

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

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

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

As demonstrated in VII.C.7 and C.8, this project constitutes a Federal Major Modification; therefore, public noticing for SB 288 or 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 associated with this project with a PE > 100 lb/day. Therefore public noticing is not required for this project for PE > 100 lb/day.

c) Offset Threshold

The following table compares the pre-project SSPE1 with the post-project SSPE2 in order to determine if any offset thresholds have been surpassed.

Offset Threshold				
Pollutant	**SSPE1 (lb/yr)**	**SSPE2 (lb/yr)**	**Offset Levels (lb/yr)**	**Public Notice Required?**
VOC	> 20,000	> 20,000	20,000	No

Since the SSPE2 does not surpass the offset threshold levels, public noticing is not triggered for this purpose.

d) SSIPE > 20,000 lb/yr

The SSIPE (NEC) is calculated and shown as follows:

SSIPE= SSPE2 – SSPE1

Stationary Source Increase in Permitted Emissions (SSIPE)			
Pollutant	**Project SSPE2 (lb/yr)**	**Project SSPE1 (lb/yr)**	**SSIPE (lb/yr)**
VOC	2,972	0	2,972

As shown in the above table, the SSIPE for this project does not exceed the 20,000 lb/yr public notice threshold.

Therefore, public noticing is not required for SSIPE purposes.

2. Public Notice Action

As discussed above, public noticing pursuant to District Rule 2201 is required for this project which is a Federal Major Modification. 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.

DELs for the tank is expressed as throughput and True Vapor Pressure (TVP) as stated in the ATC conditions below.

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

Crude oil throughput shall not exceed 2,000 barrels per day (monthly daily average). [District Rule 2201] Y

This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.1 psia under all storage conditions. [District Rules 2201 and 4623] Y

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**

   Monitoring is not required to demonstrate compliance with Rule 2201.

3. **Record Keeping**

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

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

   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 2520 and 4623] Y

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. There is no AAQ standard for VOC which is the only affected pollutant. Therefore, an 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 Federal Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Section VIII above, this project does constitute a Federal Major Modification, therefore this requirement is applicable. CRPC's Statewide Compliance Statement is included in **Attachment VII**.

H. Alternate Siting Analysis

The current project occurs at an existing facility. Since the applicant proposes to increase the throughput of an existing tank, to be used at the same location, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

Rule 2410 Prevention of Significant Deterioration

Since this source is not included in the 28 specific source categories specified in 40 CFR 51.165, the increases in fugitive emissions are not included in the Rule 2410 Major Source Determination. All post project emissions associated with this project are fugitive emissions; therefore, Rule 2410 does not apply.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this rule, and has received their Title V Operating Permit. The proposed modification is a Significant Modification to the Title V Permit pursuant to Section 3.20 of this rule. As discussed above, the facility has applied for a Certificate of Conformity (COC); therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The Title V Compliance Certification form is included in **Attachment VII**.

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	Cancer Risk	T-BACT Required
S-8452-94-0	4.74E-09	No

Discussion of T-BACT

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

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 tank will store crude oil with a TVP < 0.5 psia. Therefore, the vapor control requirements of the rule are not applicable. The tank is equipped with a P/V vent.

According to Section 4.4, tanks exclusively receiving and or storing organic liquids with a TVP less than 0.5 psia are exempt from this Rule except for complying with Sections 6.2, 6.3.6, 6.4 and 7.2. These requirements are expressed as the following ATC conditions:

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] Y

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 Rules 2201 and 4623] Y

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

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, 6.4.4] Y

For other organic liquids, the true vapor pressure (TVP) shall be measured using Reid vapor pressure ASTM Method D323, and converting the RVP to TVP at the tank's maximum organic liquid storage temperature. The conversion of RVP to TVP shall be done in accordance of the oil and gas section of "California Air Resources Boards (ARB) Technical Guidance Document to the Criteria and Guidelines Regulations for AB 2588", dated August 1989. As an alternative to using ASTM D 323, the TVP of crude oil with an API gravity range of greater than 26 degrees up to 30 degrees may be determined by using other equivalent test methods approved by APCO, ARB and EPA. [District Rule 4623, 6.4.3] Y

Compliance with the requirements of this rule is expected.

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

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

California Environmental Quality Act (CEQA)

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

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and

- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas (GHG) Significance Determination

Oil and gas operations in Kern County must comply with the *Kern County Zoning Ordinance – 2015 (C) Focused on Oil and Gas Local Permitting*. In 2015, Kern County revised the Kern County Zoning Ordinance Focused on Oil and Gas Activities (Kern Oil and Gas Zoning Ordinance) in regards to future oil and gas exploration, and drilling and production of hydrocarbon resource projects occurring within Kern County.

Kern County served as lead agency for the revision to their ordinance under the California Environmental Quality Act (CEQA), and prepared an Environmental Impact Report (EIR) that was certified on November 9, 2015. The EIR evaluated and disclosed to the public the environmental impacts associated with the growth of oil and gas exploration in Kern County, and determined that such growth will result in significant GHG impacts in the San Joaquin Valley. As such, the EIR included mitigation measures for GHG.

The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CEQA Guidelines §15381). As a Responsible Agency, the District is limited to mitigating or avoiding impacts for which it has statutory authority. The District does not have statutory authority for regulating GHGs. The District has determined that the applicant is responsible for implementing GHG mitigation measures imposed in the EIR by the Kern County for the Kern County Zoning Ordinance.

District CEQA Findings

The proposed project is located in Kern County and is thus subject to the Kern County Zoning Ordinance – 2015 (C) Focused on Oil and Gas Local Permitting. The Kern County Zoning Ordinance was developed by the Kern County Planning Agency as a comprehensive set of goals, objectives, policies, and standards to guide development, expansion, and operation of oil and gas exploration within Kern County.

In 2015, Kern County revised their *Kern County Zoning Ordinance* in regards to exploration, drilling and production of hydrocarbon resources projects. Kern County, as the lead agency, is the agency that will enforce the mitigation measures identified the EIR, including the mitigation requirements of the Oil and Gas ERA. As a responsible agency the District complies with CEQA by considering the EIR prepared by the Lead Agency, and by reaching its own conclusion on whether and how to approve the project involved (CCR §15096).

The District has reviewed the EIR prepared by Kern County, the Lead Agency for the project, and finds it to be adequate. The District also prepared a full findings document. The full findings document, *California Environmental Quality Act (CEQA) Statement of Findings for the Kern County Zoning Ordinance EIR* contains the details of the District's findings regarding the Project. The District's implementation of the Kern Zoning Ordinance and its EIR applies to ATC applications received for any new/modified equipment used in oil/gas production in Kern County, including new wells. The full findings applies to the Project and the Project's related activity equipment(s) is covered under the Kern Zoning Ordinance. To reduce project related impacts on air quality, the District evaluates emission controls for the project such as Best Available Control Technology (BACT) under District Rule 2201 (New and Modified Stationary Source Review). In addition, the District is requiring the applicant to surrender emission reduction credits (ERC) for stationary source emissions above the offset threshold.

Thus, the District concludes that through a combination of project design elements, permit conditions, and the Oil and Gas ERA, the project will be fully mitigated to result in no net increase in emissions. Pursuant to CCR §15096, prior to project approval and issuance of ATCs the District prepared findings.

Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit is based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

The revision to the *Kern County Zoning Ordinance* went through an extensive public process that included a Notice of Preparation, a preparation of an EIR, scoping meetings, and public hearings. The process led to the certification of the final EIR and approval of the revised *Kern County Zoning Ordinance* in November 2015 by the Kern County Board of Supervisors. As mentioned above, the proposed project will be fully mitigated and will result in no net increase in emissions. In addition, the proposed project is not located at a facility of concern; therefore, an Indemnification Agreement and/or a Letter of Credit will not be required for this project in the absence of expressed public concern.

IX. Recommendations

Compliance with all applicable rules and regulations is expected. Pending a successful EPA/NSR Public Noticing period, issue Authority to Construct S-

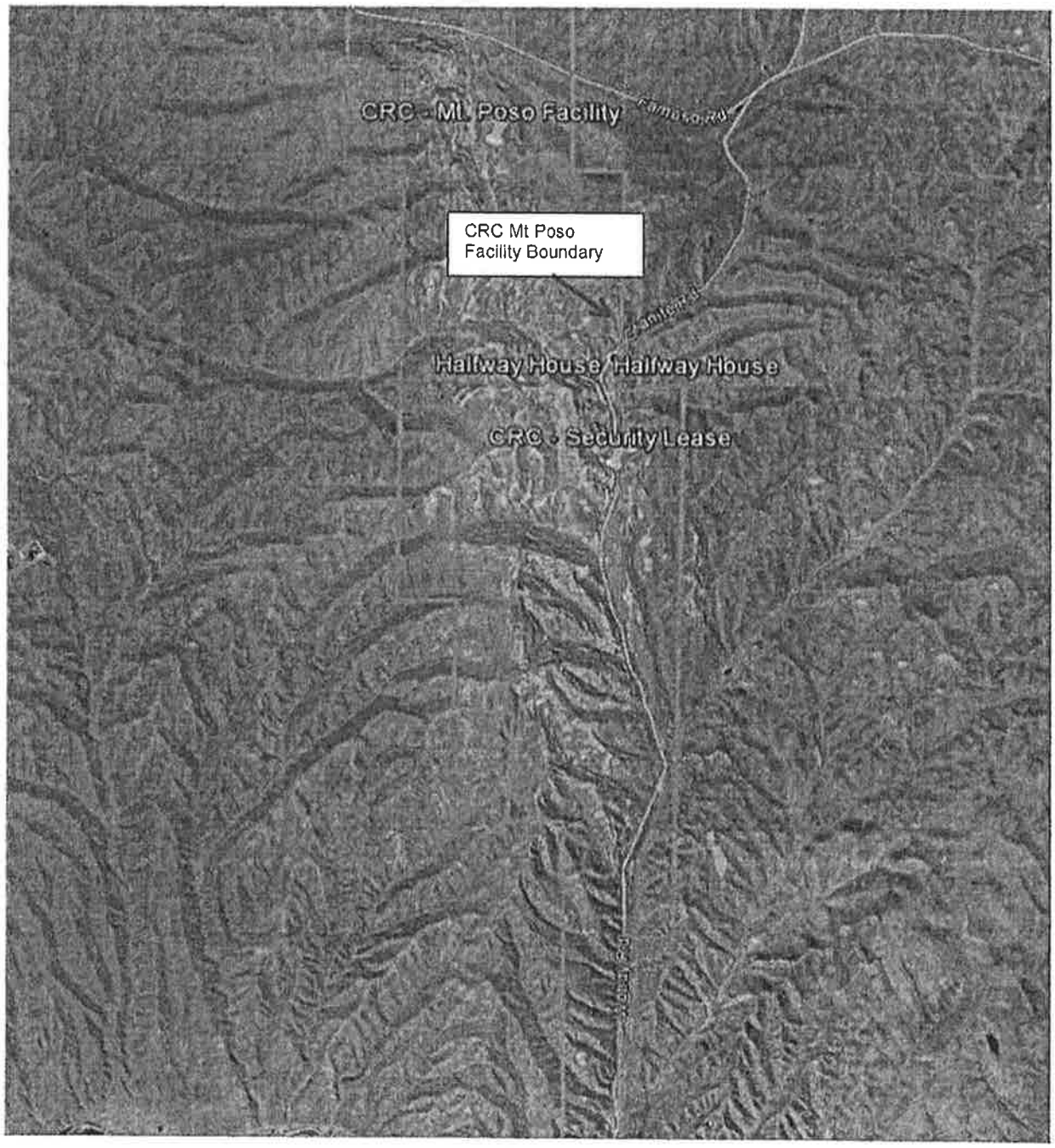
8452-94-0 subject to the permit conditions on the attached draft Authority to Construct in **Attachment IX**.

X. Billing Information

Permit Number	Fee Schedule	Fee Description	Annual Fee
S-8452-94-0	3020-05-C	205,800 gallons	$ 149.00

ATTACHMENT I: Location Map
ATTACHMENT II: Process Diagram
ATTACHMENT III: Emissions Calculations
ATTACHMENT IV: Emissions Profiles
ATTACHMENT V: BACT Guideline
ATTACHMENT VI: Top Down BACT Analysis
ATTACHMENT VII: Title V Compliance Certification Form and Statewide Compliance Statement
ATTACHMENT VIII: Health Risk Assessment
ATTACHMENT IX: Draft ATC

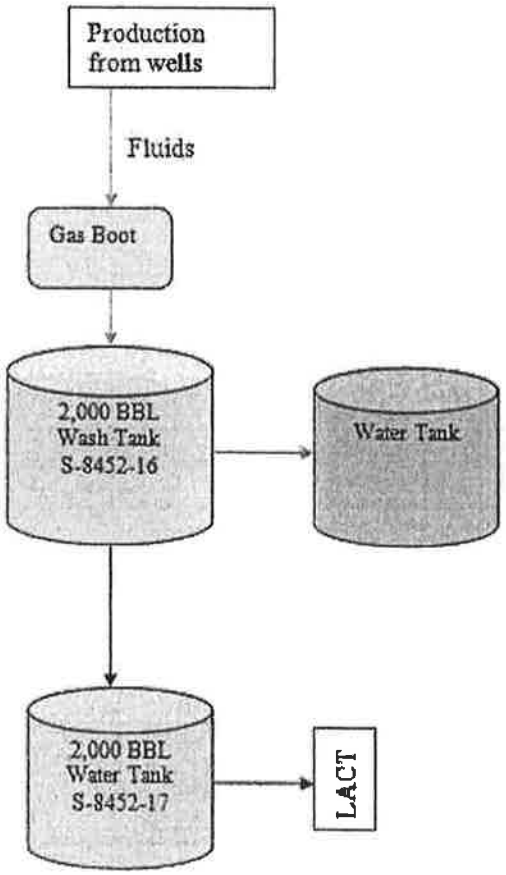
ATTACHMENT I
Location Map


CRC - Mt. Poso Facility
CRC Mt Poso
Facility Boundary
Halfway House / Halfway House
CRC - Security Lease

ATTACHMENT II
Process Diagram

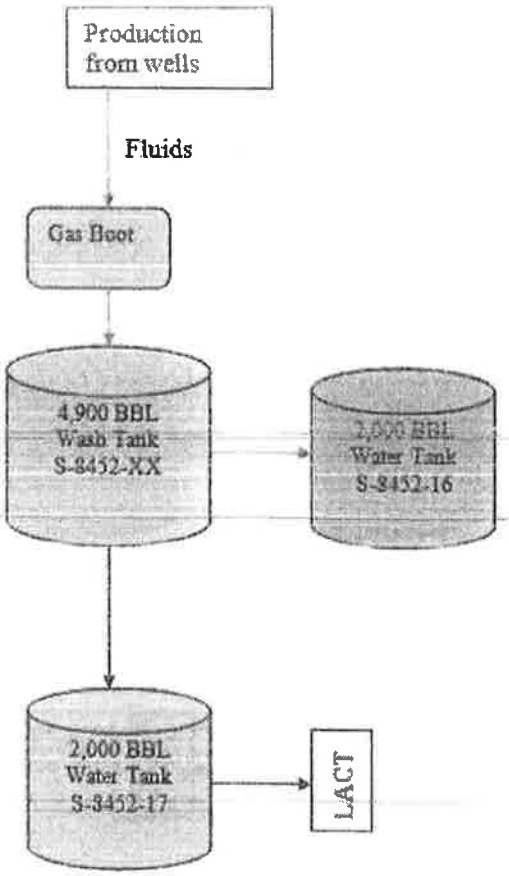
California Resources Production Corporation

FACILITY NAME: **Security Tank Facility – Pre-Project Process Flow Diagram**
SCALE: NONE



California Resources Production Corporation

FACILITY NAME: **Security Tank Facility – Post-Project Process Flow Diagram**
SCALE: NONE



ATTACHMENT III
Emissions Calculations

The project results in a VOC emission increase of 2,972 lbs/yr as shown below.

Tank Input Data	
permit number (S-xxxx-xx-xx)	S-8452-XX
facility tank I.D.	--
nearest city (1: Bakersfield, 2: Fresno, 3: Stockton)	1
tank ROC vapor pressure (psia)	0.1
liquid bulk storage temperature, Tb (°F)	110
is this a constant-level tank? (yes, no)	yes
will flashing losses occur in this tank (only if first-line tank)? (yes, no)	yes
breather vent pressure setting range (psi)	0.06
diameter of tank (feet)	38.2
capacity of tank (bbl)	4,900
conical or dome roof? (c, d)	c
shell height of tank (feet)	24
average liquid height (feet)	22
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----	3
----This row only used if shell is different color from roof----	1

Liquid Input Data	A	B
maximum daily fluid throughput (bbl)		7,000
maximum annual fluid throughput (bbl)	2,555,000	2,555,000
maximum daily oil throughput (bbl)(used to calculate flashing loss)		2,000
maximum annual oil throughput (bbl)(used to calculate flashing loss)		730,000
molecular weight, Mw (lb/lb-mol)		100

Calculated Values	A	B
daily maximum ambient temperature, Tax (°F)		77.65
daily minimum ambient temperature, Tan (°F)		53.15
daily total solar insulation factor, I (Btu/ft^2-day)		1648.9
atmospheric pressure, Pa (psia)		14.47
water vapor pressure at daily maximum liquid surface temperature (Tlx), Pvx (ps	104.6	1.1012
water vapor pressure at daily minimum liquid surface temperature (Tln), Pvn (psi	93.6	0.7956
water vapor pressure at average liquid surface temperature (Tla), Pva (psia)	99.2	0.9311
roof outage, Hro (feet)		0.3979
vapor space volume, Vv (cubic feet)		2748.21
paint factor, alpha		0.68
vapor density, Wv (lb/cubic foot)		0.0017
daily vapor temperature range, delta Tv (degrees Rankine)		49.04
vapor space expansion factor, Ke		0.1058

Results	lb/year	lb/day
Standing Storage Loss	177	0.48
Working Loss	N/A	N/A
Flashing Loss	2,795	7.66
Total Uncontrolled Tank VOC Emissions	2,972	8.1

Summary Table	
Permit Number	S-8452-XX
Facility Tank I.D.	--
Tank capacity (bbl)	4,900
Tank diameter (ft)	38.2
Tank shell height (ft)	24
Conical or Dome Roof	Conical
Maximum Daily Fluid Throughput (bbl/day)	7,000
Maximum Annual Fluid Throughput (bbl/year)	2,555,000
Maximum Daily Oil Throughput (bbl/day)	2,000
Maximum Annual Oil Throughput (bbl/year)	730,000
Total Uncontrolled Daily Tank VOC Emissions (lb/day)	8.1
Total Uncontrolled Annual Tank VOC Emissions (lb/year)	2,972

ATTACHMENT IV
Emissions Profile

Application Emissions

Permit #: S-8452-94-0	**Last Updated**
Facility: CALIFORNIA RESOURCES PRODUCTION	01/13/2018 EDGEHILR

Equipment Pre-Baselined: NO

	NOX	SOX	PM10	CO	VOC
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	2972.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	8.1
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	743.0
Q2:	0.0	0.0	0.0	0.0	743.0
Q3:	0.0	0.0	0.0	0.0	743.0
Q4:	0.0	0.0	0.0	0.0	743.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					1.5
Quarterly Offset Amounts (lb/Qtr)					
Q1:					1114.0
Q2:					1114.0
Q3:					1115.0
Q4:					1115.0

ATTACHMENT V
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 **

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

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

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

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

ATTACHMENT VI
BACT Analysis

Vapor Controlled Tanks/Vessels

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.

Current District BACT Guideline 7.3.1

	Achieved in Practice BACT	Technologically Feasible BACT	Alternate Basic Equipment
VOC	PV relief valve set to within 10% of maximum allowable pressure.	99% control (waste gas incinerated in steam generator, heater treater, or other fired equipment and inspection and maintenance program; transfer of uncondensed vapors to gas pipeline or reinjection to formation (if appropriate wells are available).	None Identified

Step 2 - Eliminate Technologically Infeasible Options

The technologically feasible control measures of re-injecting the vapors into the formation and transfer of non-condensable vapors to gas pipeline are not feasible because neither gas injection wells nor a gas pipeline currently exist at the project site. Further, no candidate geologic formations are available for gas re-injection at the project site. All of the above remaining control options identified above are technologically feasible for the proposed equipment and are not eliminated.

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 the following installation costs (detailed costs follow):

Tank Vapor Recovery: $276,050
Flare: $42,250
Total: $318,300

Annualized cost: $51,787/yr (10 year depreciation)

Applicant has provided the following maintenance costs:

Operator: $12,000/yr ($1,000/mo)
Electricity: $7,200/yr ($600.00/mo)
Total: $19,200

Total installation and O&M Costs

$51,787 + $19,200 = $70,987/yr

Cost effectiveness = $ 70,987/year/[0.99 x 2,972 lb/yr/2000 lb/ton]
= $48,253/ton > $17,500/ton cost ineffective

Vapor control is not cost effective.

Step 5 - Select BACT

PV vent set to within 10% of maximum allowable pressure.

FLARE QUOTE

Most flares spend very little time at the peak design rate. Yet, many flares are unable to handle the condition that occurs most of the time -- low flow turndown. Unlike flares which rely on large diameter curved surfaces, the GBA-Corona CSF flare ensures that the combustion takes place above the flare tip. This eliminates nearly the entire continuous flame lick on the flare. And by using properly designed wind deflectors, low flow rate flames are allowed to lift away from the flare further reducing the chance of flame lick. These two features greatly improve longevity and guard against flare tip failure.

Radiation

We have provided a radiation plot illustrating the radiation values at the maximum flow rate of 0.2 mmscfd. Included will be an 18' self-support flare stack, including flare tip, to meet the requirements of limiting the radiation to less than 1500 btu/hr*ft2 at ground elevation.

The plot is scaled so stack heights and contours can be evaluated. If there are other radiation constraints or specifications that need to be evaluated, we will quickly incorporate them into our study. Please note that we have included 300 btu/hr*ft2 solar radiation into our contours.

Pilot Ignition

To ignite the flare, we have offered Corona's CHT electronic pilots. This pilot is fully automatic and self-monitoring. This system has auto re-light capabilities (standard) and is self-monitoring. The CHT system uses flame ionization for pilot monitoring which ensures long life and reliability of pilot indication. This system does not require utility air and eliminates the inherent problems associated with thermocouples and flame front generators. Our package includes 2 CHT pilots and 250' of standard ignition cable per pilot. Electronics will be housed in a NEMA 4X, general purpose, stainless steel enclosure.

Air Lock Seal

A continuous supply of purge gas is required to prevent air from migrating into the waste gas header. Many studies have proved that the air will typically migrate down along the inside wall of the flare, where the gas is moving the slowest. It has also been shown, that for the same purge gas velocities, it is much easier for air to enter a large diameter tip than a small diameter tip. Finally, it has also been shown that bends within the header further inhibit the ability of the air to penetrate in the stack.

We have offered an Air Lock purge reduction seal. This seal is an inverted cone (baffle) that forms a physical obstruction for the air that typically migrates in along the flare tip body wall. When the air encounters the seal, the air is diverted toward the center of the flare (where the purge gas is moving the fastest) and toward the exit of the flare.

TVR QUOTE

Com-Pac Systems, Inc.

(432) 332-4515
Fax (432) 332-0121
2412 S. Market St.
Odessa, Texas 79766

- Dedicated force feed cylinder lubrication system including:
  - Two (2) electric motor driven lubricator pumps, one for each compressor
  - Two (2) pressurized divider block distribution systems, one for each compressor
  - Two (2) lube oil no-flow switches, one for each compressor
- One (1) 30 gallon lube oil day tank, common to both compressors
- Torsionally resilient coupling /w built to suit coupling guard

3.1 Compressor Performance

See attatched

4.0 Compressor Driver

Two (2) Baldor model ECP416T, or equal, premium efficiency, severe duty, induction electric motor as per the following:

- 20 HP
- 3600 RPM
- TEFC
- 460/3/60 VAC
- 1.15 service factor
- Lubricated bearings
- Rotatable, oversized conduit box w/ stainless steel hardware
- Rated for NEC Class 1 Division 2 Groups C&D hazardous area

4.1 Compressor Driver Performance

See attatched

5.0 Gas Cooler

One (1) ACE model C32M-4 or equal, vertical finned tube air cooled heat exchanger as per the following:

- One (1) after gas cooling section, sized for both compressors running, as per the following
  - SA-516/70 carbon steel headers
  - 1/16" corrosion allowance
  - SA-249 304 stainless steel welded tubes
  - Manual louver
  - 5005 marine grade aluminum fins
  - ASME coded stamped w/ National Board registration
- One (1) compressor lube jacket water cooling section, sized for both compressors running as per the following
  - Carbon steel headers
  - SA-214 carbon steel welded tubes
  - 5005 marine grade aluminum fins
- Mounted electric motor driven direct drive fan drive assembly
- Cooler structure as per the following
  - Seal welded
  - White metal blasted
  - Metalized headers and structure

5.1 Cooler Performance

Com-Pac Systems, Inc.

(432) 332-4515
Fax (432) 332-0121
2412 S. Market St.
Odessa, Texas 79766

Com-Pac Systems, Inc. Proposal 12-2221R0

8.0 Process Valves

One (1) lot of process valves from edge suction block valve through the compressor package to skid edge final discharge block. All process valves are carbon steel bodies, SS trim and firesafe. The following valves are included:

- One (1) manual full port suction block valve located at skid edge
- One (1) conventional type thermal relief valve on suction scrubber complete with full port inlet/outlet block valves, bleed ring and bleed valve.
- Two (2) manual inlet double block and bleed valve sets. One each located between suction scrubber and each compressor inlet
- One (1) conventional type relief valve on each compressor discharge complete with full port inlet/outlet block valves, bleed ring and bleed valve.
- One (1) automatic recycle capacity control valve, sized for 100% of flow, including I/P, positioner and manual bypass loop to maintain suction pressure
- Two (2) discharge check valve double door spring assisted closure type. One located on the discharge of each compressor
- Two (2) manual outlet double block and bleed valve sets. One each located between compressor discharge check valve and discharge scrubber
- One (1) conventional type full flow relief valve on discharge scrubber complete with full port inlet/outlet block valves, bleed ring and bleed valve.
- One (1) common discharge check valve double door spring assisted closure type.
- One (1) manual full port discharge block valve located at skid edge

9.0 Utility Piping, Valves and Tubing

One (1) lot utility piping, valves and tubing as per the following:

- Threaded and/or socket weld stainless steel lube oil piping per SA-312 304, SA-182 304
- Threaded and/or socket weld carbon steel jacket water piping per SA106-B, SA-105
- Threaded and/or socket weld carbon steel instrument air piping per SA106-B, SA-105
- SA-249 304SS welded instrument tubing
- 304SS Parker, or equal, tubing fittings
- Galvanized u-bolts
- Valves are threaded, carbon steel body carbon steel trim

10.0 Instrumentation and Electrical

One (1) lot skid instrumentation and electrical as per the following:

- Instrumentation/end devices are designed for installation in a Class I Division 2 Group C&D hazardous area classification
- All wiring in ridged galvanized conduit with type "G" galvanized fittings
- Preliminary instrument manufactures as per the following:
    - Pressure Indicating Transmitter – Rosemount 3051S
    - Temperature Indicating Transmitter – Rosemount 644
    - Temperature RTD's – Rosemount 0068
    - Level Bridle Assembly – Com-Pac Systems standard
    - Level Transmitter Guided Wave – Rosemount 3300
    - Level Switch Ultrasonic – Rosemount 2120
    - Level Indicator – Penberthy
    - Vibration Transmitter – Metrix ST5491E

Com-Pac Systems, Inc.

(432) 332-4515
Fax (432) 332-0121
2412 S. Market St.
Odessa, Texas 79766

Com-Pac Systems, Inc. Proposal 12-2221R0

11.0 Control Panel

One (1) compressor control panel is provided mounted and wired on the compressor skid. The control panel and equipment are rated for National Electrical Code area classification of Class I Division II, Groups C& D and is equipped as per the following:

- Allen Bradley ControLogix programmable logic controller
- Allen Bradley 10000CP HMI
- Ethernet connection
- Door mounted ESD, re-set switch and power on light
- NEMA 4X stainless steel enclosure
- Package control instrumentation for at a minimum
  - Package suction pressure
  - Package suction temperature
  - Suction scrubber level control
  - Suction scrubber low/low level
  - Suction scrubber high/high level
  - Compressor "A" discharge temperature
  - Compressor "A" discharge pressure
  - Compressor "A" high vibration
  - Compressor "A" lube oil no flow
  - Compressor "A" lubricator low level
  - Compressor "A" jacket water high temperature
  - Compressor "A" jacket water no flow
  - Compressor "B" discharge temperature
  - Compressor "B" discharge pressure
  - Compressor "B" high vibration
  - Compressor "B" lube oil no flow
  - Compressor "B" lubricator low level
  - Compressor "B" jacket water high temperature
  - Compressor "B" jacket water no flow
  - Discharge scrubber level control
  - Discharge scrubber high/high level
  - Package discharge pressure
  - Cooler high vibration

12.0 Skid

One (1) structural steel skid, with major equipment mounted on main structural members as per the following:

- Com-Pac Systems standard single-piece skid design
- 3/8" ASME SA-36 smooth bottom plate, seal-welded around skid perimeter
- Two inch (2") environmental containment barrier around perimeter of skid
- Two (2) drain connections located on opposite corners
- Two (2) draw bars, one lactated at each end, suitable for use as lifting lugs.
- Anchor bolt holes drilled w/ jack bolt nuts welded to skid perimeter
- Com-Pac Systems standard skid welding procedures apply
- Skid is not subject to NDE

Com-Pac Systems, Inc.

(432) 332-4515
Fax (432) 332-0121
2412 S. Market St.
Odessa, Texas 79766

Com-Pac Systems, Inc. Proposal 12-2221R0

15.0 *Delivery*

Shipment: 22-26 weeks ARO.

Note 2 – Estimated delivery only. Actual delivery cannot be confirmed until time of order acceptance, receipt of down payment and return receipt of approved drawings

16.0 Price Summary

Price Per Package ..... $276,050.00 (US Dollars)

- Payment in United States dollars
- Sales taxes are not included
- Ex-works Com-Pac Systems facility
- Price validity sixty (60) days from the date of proposal

17.0 Terms

We propose that Buyer will pay Seller for the work as per the following progress payment schedule and terms with no holdbacks or retention of funds:

- 30% down with order placement
- 20% upon drawing submittal (drawings submittal will be P&ID and General Arrangement)
- 20% upon cooler manufacturer's notification of readiness to ship
- 20% upon compressor manufacturer's notification of readiness to ship
- 10% upon notification of readiness to ship completed package

Thank you for allowing us this opportunity. We hope the products and services provided herein meet your expectations, and will subsequently lead to an order in our favor.

If there are any questions or clarifications regarding this offer please do not hesitate to call.

Respectfully,

Jack Motley
Jack Motley
Com-Pac Systems, Inc.
2412 Market
Odessa, Texas 79766
Phone – (432) 332-4515
Fax – (432) 332-0121
Cell – (432) 208-9083
E-Mail – jackmotley@compressorpackaging.com

Rick Mobley
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Fax – (432) 332-0121
Cell – (432) 664-2033
E-Mail – rickmobley@compressorpackaging.com

ATTACHMENT VII
Title V Compliance Certification Form and Statewide Compliance Statement

San Joaquin Valley Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

☐ ADMINISTRATIVE AMENDMENT ☐ MINOR MODIFICATION ☒ SIGNIFICANT MODIFICATION

COMPANY NAME: California Resources Production Corp	FACILITY ID: S-8453
1. Type of Organization: ☒ Corporation ☐ Sole Ownership ☐ Government ☐ Partnership ☐ Utility	
2. Owner's Name: California Resources Production Corp	
3. Agent to the Owner: Lauberry Damaso	

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

(JM) Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).

(JM) Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.

(JM) Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.

(JM) Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true, accurate, and complete.

○ For minor modifications, this application meets the criteria for use of minor permit modification procedures pursuant to District Rule 2520.

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

Signature of Responsible Official

1/10/2018
Date

Rosendo Rodriguez
Name of Responsible Official (please print)

Prod. Manager North Operations
Title of Responsible Official (please print)

December 28, 2017

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

Subject: **Federal Major Modification Statewide Compliance Certification**
S-8452 ATC Application – Add 4900 BBL Wash Tank
(Security Facility)

Dear Mr. Scandura:

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

Signature

HSE Envr. Mgr.
Title

ATTACHMENT VIII
HRA

San Joaquin Valley Air Pollution Control District
Risk Management Review

To:	Richard Edgehill – Permit Services
From:	Georgia Stewart – Technical Services
Date:	January 23, 2018
Facility Name:	California Resources Production Corp.
Location:	NE Section 17, T27S, R28E within CRPC's Heavy Oil Central Stationary Source
Application #(s):	S-8452-94-0
Project #:	S-1174147

A. RMR SUMMARY

RMR Summary						
Units	**Prioritization Score**	**Acute Hazard Index**	**Chronic Hazard Index**	**Maximum Individual Cancer Risk**	**T-BACT Required?**	**Special Permit Requirements?**
Unit 94-0 (4,800 bbl Wash Tank)	0.00	0.00	0.00	4.74E-09	No	No
Project Totals	0.0	0.00	0.00	4.74E-09		
Facility Totals	>1	0.42	0.04	1.58E-05		

Proposed Permit Requirements

To ensure that human health risks will not exceed District allowable levels; the following shall be included as requirements for:

Unit # 94-0

No special requirements are required.

B. RMR REPORT

I. Project Description

Technical Services received a request on January 16, 2018, to perform a Risk Management Review for a proposed installation of a new 4,800 bbl wash tank.

II. Analysis

Toxic emissions from Oilfield Fugitives were calculated using emission factors derived from 1991 source tests of central valley sites, and input into the San Joaquin Valley APCD's Hazard Assessment and Reporting Program (SHARP). In accordance with the District's Risk Management Policy for Permitting New and Modified Sources (APR 1905, May 28, 2015), risks from the proposed unit's toxic emissions were prioritized using the procedure in the 1990 CAPCOA Facility Prioritization Guidelines. The prioritization score for this proposed facility was greater than 1.0 (see RMR Summary Table). Therefore, a refined health risk assessment was required. The AERMOD model was used, with the parameters outlined below and meteorological data for 2010-2014 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. These dispersion factors were input into the SHARP Program, which then used the Air Dispersion Modeling and Risk Tool (ADMRT) of the Hot Spots Analysis and Reporting Program Version 2 (HARP 2) to calculate the chronic and acute hazard indices and the carcinogenic risk for the project.

The following parameters were used for the review:

Analysis Parameters Unit 94-0			
Source Type	Circular Area	**Location Type**	Rural
Radius (m)	5.79	**Closest Receptor (m)**	1900
Release Height (m)	7.32	**Type of Receptor**	Residential
Fugitive VOC Emissions (lbs/hr)	0.34	**Fugitive VOC Emissions (lbs/yr)**	2,972

AAQA.

An AAQA is modeled for the criteria pollutants CO, NOx, SOx and PM10. However, there are no State or Federal standards for VOC. Therefore, an AAQA was not performed.

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).**

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. Prioritization score w/ toxic emissions summary

ATTACHMENT IX
Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: S-8452-94-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: CALIFORNIA RESOURCES PRODUCTION CORP
MAILING ADDRESS: 11109 RIVER RUN BLVD
BAKERSFIELD, CA 93311

LOCATION: HEAVY OIL CENTRAL

SECTION: NE 16 **TOWNSHIP:** 27S **RANGE:** 28E

EQUIPMENT DESCRIPTION:
4900 BBL CRUDE OIL WASH TANK WITH PRESSURE VACUUM (PV) VALVE

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 1,114 lb, 2nd quarter - 1,114 lb, 3rd quarter - 1,115 lb, and fourth quarter - 1,115 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/28/16) for the ERC specified below. [District Rule 2201] Federally Enforceable Through Title V Permit
4. ERC certificate S-1708-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit
5. The tank shall be equipped with a fixed roof with no holes or openings. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director / APCO

DRAFT

Arnaud Marjollet, Director of Permit Services
S-8452-94-0 : Jan 24 2018 3:37PM -- EDGEHILR : Joint Inspection NOT Required

6. 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 and properly maintained in good operating order in accordance with the manufacturer's instructions. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
7. Tank shall only operate at constant level. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Crude oil throughput shall not exceed 2,000 barrels per day (monthly daily average). [District Rule 2201] Federally Enforceable Through Title V Permit
9. This tank shall only store, place, or hold organic liquid with a true vapor pressure (TVP) of less than 0.1 psia under all storage conditions. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
10. Permittee shall conduct True Vapor Pressure (TVP) testing of the organic liquid stored in this tank at least once every 24 months during summer (July - September), and/or whenever there is a change in the source or type of organic liquid stored in this tank in order to maintain exemption from the rule. [District Rules 2201 and 4623] Federally Enforceable Through Title V Permit
11. As used in this permit, the term "source or type" shall mean liquids with similar characteristics. The operator shall maintain records of API gravity of petroleum liquids stored in this unit to determine which are from common source. [District Rule 2520, 9.3.2] Federally Enforceable Through Title V Permit
12. 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, 6.4.4] Federally Enforceable Through Title V Permit
13. For other organic liquids, the true vapor pressure (TVP) shall be measured using Reid vapor pressure ASTM Method D323, and converting the RVP to TVP at the tank's maximum organic liquid storage temperature. The conversion of RVP to TVP shall be done in accordance of the oil and gas section of "California Air Resources Boards (ARB) Technical Guidance Document to the Criteria and Guidelines Regulations for AB 2588", dated August 1989. As an alternative to using ASTM D 323, the TVP of crude oil with an API gravity range of greater than 26 degrees up to 30 degrees may be determined by using other equivalent test methods approved by APCO, ARB and EPA. [District Rule 4623, 6.4.3] Federally Enforceable Through Title V Permit
14. The permittee shall keep accurate records of each organic liquid stored in the tank, including its storage temperature, TVP, API gravity and throughput. [District Rules 2201and 4623] Federally Enforceable Through Title V Permit
15. All records required to be maintained by this permit shall be maintained for a period of at least five years and shall be made readily available for District inspection upon request. [District Rules 2520 and 4623] Federally Enforceable Through Title V Permit