



San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



FEB 03 2014

John Haley
Aera Energy LLC
PO Box 11164
Bakersfield, CA 93389-1164

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: S-8422
Project Number: S-1134653

Dear Mr. Haley:

Enclosed for your review and comment is the District's analysis of Aera Energy LLC's application for an Authority to Construct for up to ten (10) 400 bbl crude oil storage tanks served by vapor control system and 125 MMBtu/hr air-assist or Coanda flare, at NW Section 4, T27S, R22E in the light oil central source.

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 period, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

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

Sincerely,

David Warner
Director of Permit Services

DW:RUE/st

Enclosures

cc: Mike Tollstrup, CARB (w/ enclosure) via email

Sayed Sadredin
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Facility Name:	Aera Energy LLC	Date:	January 29, 2014
Mailing Address:	PO Box 11164	Engineer:	Richard Edgehill
	Bakersfield, CA 93389-1164	Lead Engineer:	Allan Phillips
Contact Person:	John Haley		
Telephone:	(661) 665-7424		
Application #(s):	S-8422-1-0 through '-11-0		
Project #:	1134653		
Deemed Complete:	December 16, 2013		

Aera Energy LLC (Aera) has requested Authorities to Construct (ATCs for the installation of up to ten (10) 400 bbl crude oil storage tanks served by a vapor control system (VCS) and a 125 MMBtu/hr (maximum) Coanda flare.

The equipment will be used to receive and store production from a recently drilled and completed (by Aera) exploration well near Lost Hills (east of Highway 5). The equipment will be operated by a third party on behalf of Aera, and as such, is part of Aera's new Light Oil Central Stationary Source (Facility S-8422).

Emissions from the flare trigger BACT and public notice. Offsets are not required.

The facility is not a major source and therefore Rule 2520 and 2530 are not applicable.

Rule 2020	Exemptions (8/18/11)
Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410	Prevention of Significant Deterioration (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 $\leq 1,589.874 \text{ m}^3$ ($\leq 420,000$ gallons) used for petroleum or condensate stored, processed, or treated prior to custody transfer. The capacities of the proposed tanks are $\leq 420,000$ gallons, and they store crude oil prior to custody transfer; therefore, this subpart does not apply to the tanks 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 (2/17/05)
Rule 4102 Nuisance (12/17/92)
Rule 4311 Flares (6/18/09)
Rule 4623 Storage of Organic Liquids (5/19/05)
Rule 4624 Organic Liquid Loading (12/17/02)
Rule 4801 Sulfur Compounds (12/17/92)
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 equipment will be located at the NW Section 4, T27S, R22E in the light oil central stationary source. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

Aera is planning to produce oil from a recently completed well over an extended period of time. The well is not steam enhanced and therefore does not require a permit. The crude oil is expected to have an API gravity of 23° to 30° and will be stored in up to ten (10) 400 bbl vertical tanks. The tanks will be served by a skid-mounted vapor control system consisting of two compressors, fin-fan coolers, scrubbers, and various piping components.

Gravity separation may be used to separate produced water from the oil. Applicant has stated (12/19/13 email) that there could be up to four phase separators onsite. The largest will be 48" OD x 10' length (seam to seam). There will be other gas scrubbers onsite to remove condensable liquids from the gas prior to being compressed and incineration in the flare. SSP 2015 states that "Separators and piping that return the vapors immediately back to the produced liquid flow line do not require a permit." Therefore the separators do not require a permit.

Vacuum trucks will be used to transfer the produced fluids from the tanks to Aera's existing processing facilities.

Produced gas from the well and vapors from the tanks will be combusted in a 125 MMBtu/hr (Maximum) Coanda tip flare.

V. Equipment Listing

S-8422-1-0: 400 BBL CRUDE OIL STORAGE TANK WITH VAPOR CONTROL SYSTEM INCLUDING COMPRESSOR(S), FIN-FAN COOLER(S), AND GAS SCRUBBER(S) VENTED TO FLARE LISTED ON S-8422-11

S-8422-2-0 THROUGH '-10-0: 400 BBL CRUDE OIL STORAGE TANK VENTED TO VAPOR CONTROL SYSTEM LISTED ON S-8422-1

S-8422-11: 125 MMBTU/HR (MAXIMUM) VAPOR RECOVERY AND PRODUCED GAS COANDA FLARE WITH CONTINUOUS PROPANE PILOT SERVING TANK VAPOR CONTROL SYSTEM LISTED ON S-8422-1

As per District policy 1035 Flexibility in Equipment Descriptions in ATCs, some flexibility in the final specifications of the equipment will be allowed as stated in the following ATC conditions for the flare as the rating may change.

The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201] N

The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2010] N

Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201] N

No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201] N

VI. Emission Control Technology Evaluation

The tanks will be served by a VCS (S-8422-1) venting to a flare (S-8422-11). The expected vapor control efficiency is 99% as reflected by leak-free permit requirements and a stringent Inspection & Maintenance (I&M) program.

Flare S-8422-11

A new Coanda effect flare will be designed to incinerate produced/VCS gas in a safe manner and without creating a nuisance. Engineered flares are designed to achieve a greater than 98% destruction efficiency of VOC and H₂S and to operate without visible emissions. Coanda effect promotes complete combustion of gases.

The flare is expected to meet FYI 83 emissions limits for NO_x of 0.068 lb/MMBtu, VOC 0.063 lb/MMBtu, PM₁₀ 0.008 lb/MMBtu (BACT), and CO of 0.37 lb/MMBtu. The BACT requirement for PM₁₀ implies smokeless operation.

The sulfur content of the flared gas is restricted to 100 ppmv by permit condition.

VII. General Calculations

A. Assumptions

- The facility operates 24 hours per day, 7 days per week, and 52 weeks per year.

Flare S-8422-11(flare supplemental application form)

- Sulfur content of hydrocarbon vapors is 100 ppmv
- Flared gas heating value: 1000 Btu/scf
- Flared gas flow rate 3.0 MMscf/day (125.0 MMBtu/hr), 250 MMscf/yr, (250 Billion Btu/yr)
- Continuous propane pilot (no flow or heat sensing ignition systems) @ 1800 scf/hr
- Pilot emissions neglected by District Policy FYI 310 "Significance and Accounting of Flare Pilot Flame Emissions"
- Coanda effect

The following component counts were provided by applicant (**Attachment IV**):

	Valves	Others	Connectors	Flanges
VCS	213	147	1,626	288
Tank	12	14	87	65

B. Emission Factors

Flare

Pollutant	Emission Factor (lb/MMBtu)	Source
NOx	0.068	FYI-83
SOx	0.0169*	
PM10	0.008	FYI-83-BACT
CO	0.37	FYI-83
VOC	0.0063	FYI-83

*100 ft³ S/MMscf x MMscf/1000 MMBtu x 64 lb SO₂/379 ft³ = 0.0169 lb SO₂/MMBtu

Tanks and VCS

Fugitive component emissions are calculated using the "revised screening" emissions factors of CARB/CAPCOA "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities" (please see **Attachment I**).

C. Calculations

1. Pre-Project Potential to Emit (PE1)

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

2. Post Project Potential to Emit (PE2)

The potential to emit for this unit is summarized in the following table:

S-8422-1 VCS

VOCs: 3.0 lb/day, 1,095 lb/yr

S-8422-1 through '-10 (tanks)

VOCs: 0.3 lb/day, 110 lb/yr (each)

S-8422-11 Flare

Pollutant	Daily Post-Project Potential to Emit (PE2)			
	Emission Factors	Heat input	Hours per day	Daily PE2
NO _x	0.0680 (lb-NO _x /MMBtu)	x 125 (MMBtu/hr)	x 24 (hr/day)	= 204.0 (lb-NO _x /day)
SO _x	0.01690 (lb-SO _x /MMBtu)	x 125 (MMBtu/hr)	x 24 (hr/day)	= 50.7 (lb-SO _x /day)
PM ₁₀	0.0080 (lb-PM ₁₀ /MMBtu)	x 125 (MMBtu/hr)	x 24 (hr/day)	= 24.0 (lb-PM ₁₀ /day)
CO	0.3700 (lb-CO/MMBtu)	x 125 (MMBtu/hr)	x 24 (hr/day)	= 1,110.0 (lb-CO/day)
VOC	0.0630 (lb-VOC/MMBtu)	x 125 (MMBtu/hr)	x 24 (hr/day)	= 189.0 (lb-VOC/day)

Pollutant	Annual Post-Project Potential to Emit (PE2)		
	Emission Factors	Annual Max. Heat input	Annual PE2
NO _x	0.0680 (lb-NO _x /MMBtu)	x 250 (billion Btu/year)	= 17,000 (lb-NO _x /year)
SO _x	0.01690 (lb-SO _x /MMBtu)	x 250 (billion Btu/year)	= 4,225 (lb-SO _x /year)
PM ₁₀	0.0080 (lb-PM ₁₀ /MMBtu)	x 250 (billion Btu/year)	= 2,000 (lb-PM ₁₀ /year)
CO	0.3700 (lb-CO/MMBtu)	x 250 (billion Btu/year)	= 92,500 (lb-CO/year)
VOC	0.0630 (lb-VOC/MMBtu)	x 250 (billion Btu/year)	= 15,750 (lb-VOC/year)

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

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

Since this is a new facility, there are no valid ATCs, PTOs, or ERCs at the Stationary Source; therefore, the SSPE1 is equal to zero.

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.

SSPE2 (lb/year)					
Permit Unit	NO _x	SO _x	PM ₁₀	CO	VOC
S-8422-1	0	0	0	0	1095 + 110 = 1,205
S-8422-2	0	0	0	0	110
S-8422-3	0	0	0	0	110
S-8422-4	0	0	0	0	110
S-8422-5	0	0	0	0	110
S-8422-6	0	0	0	0	110
S-8422-7	0	0	0	0	110
S-8422-8	0	0	0	0	110
S-8422-9	0	0	0	0	110
S-8422-10	0	0	0	0	110
S-8422-11	17,000	4,225	2,000	92,500	15,750
SSPE2	17,000	4,225	2,000	92,500	17,945

5. Major Source Determination

Rule 2201 Major Source Determination:

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

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

Rule 2201 Major Source Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
Facility emissions pre-project	0	0	0	0	0
Facility emissions – post project	17,000	4,225	2,000	92,500	17,945
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No

As seen in the table above, the facility is not an existing Major Source and is not becoming a Major Source 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)(i). Therefore the following PSD Major Source thresholds are applicable.

PSD Major Source Determination (tons/year)							
	NO2	VOC	SO2	CO	PM	PM10	CO2e
Estimated Facility PE before Project Increase	0	0	0	0	0	0	0
PSD Major Source Thresholds	250	250	250	250	250	250	100,000
PSD Major Source ? (Y/N)	N	N	N	N	N	N	N

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

6. Baseline Emissions (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.

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 these are new emissions units, BE = PE1 = 0 for all pollutants.

7. SB 288 Major Modification

Since this facility is not a major source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification.

8. Federal Major Modification

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification. Additionally, since the facility is not a major source for PM₁₀ (140,000 lb/year), it is not a major source for PM_{2.5} (200,000 lb/year).

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

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

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

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

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

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

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

I. Potential to Emit for New or Modified Emission Units vs PSD Major Source Thresholds

As a screening tool, the project potential to emit from all new and modified units is compared to the PSD major source threshold, and if total project potential to emit from all new and modified units is below this threshold, no further analysis will be needed.

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). Therefore the following PSD Major Source thresholds are applicable.

PSD Major Source Determination: Potential to Emit (tons/year)							
	NO2	VOC*	SO2	CO	PM	PM10	CO2e**
Total PE from New and Modified Units	8.5	7.9	2.1	46.3	1	1	14,624
PSD Major Source threshold	250	250	250	250	250	250	100,000
New PSD Major Source?	N	N	N	N	N	N	N

*does not include fugitive emissions

** ¹CO2 Emissions = 250,000 MMBtu/yr x 116.89 lb/MMBtu

= 29,222,500 lb-CO2(eq)/yr

CH4 Emissions = 250,000 MMBtu/yr x 0.002 lb/MMBtu x 21 lb-CO2(eq) per lb-CH4

= 10,500 lb-CO2(eq)/yr

N2O Emissions = 250,000 MMBtu/yr x 0.0002 lb/MMBtu x 310 lb-CO2(eq) per lb-N2O

= 15,500 lb-CO2(eq)/yr

Total = 29,248,500 lb-CO2(eq)/yr/2000 lb/short ton

= 14,624 tons CO2(eq)/yr

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. As the permit units are new QNEC = PE/4.

VIII. Compliance

Rule 2020 Exemptions

Crude oil off-loading into vacuum trucks is exempt as per Section 6.7.1.3 as stated below.

Section 6.7.1.3 "Loading racks, as defined in Rule 1020 (Definitions), and unloading racks that are: "attached to an organic material delivery vehicle and used exclusively for the transfer of crude oil, asphalt, or residual oil."

Compliance is expected.

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

Flare

As seen in Section VII.C.2 above, the applicant is proposing to install a new 125.0 MMBtu/hr Coanda tip flare with a PE greater than 2 lb/day for NO_x, SO_x, PM₁₀, CO, and VOC. BACT is triggered for NO_x, SO_x, PM₁₀, and VOC only since the PEs are greater than 2 lbs/day and the SSPE2 for CO is not greater than 200,000 lbs/year, as demonstrated in Section VII.C.5 above.

Tanks and VCS

The tanks do not trigger BACT. The VCS has VOC emissions exceeding 2 lb/day, however, it is a VOC control device and not a new emissions unit. Therefore BACT is not triggered for the VCS.

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 Sections VII.C.7 and VII.C.8 above, this project does not constitute an SB 288 and/or Federal Major Modification for NO_x emissions. Therefore BACT is not triggered for any pollutant.

2. BACT Guideline

BACT Guideline 1.4.2, applies to Waste Gas Flare – Incinerating Produced Gas

See Attachment III.

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 IV), BACT has been satisfied with the following (the more stringent requirements of the BACT Guideline 1.4.2, Waste Gas Flare Incinerating Produced Gas:

NO_x: Coanda effect
SO_x: Coanda effect, LPG pilot
PM₁₀: Coanda effect, LPG pilot
CO: Coanda effect
VOC: Coanda effect

B. Offsets

1. Offset Applicability

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

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

Offset Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE2	17,000	4,225	2,000	92,500	17,945
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	No

2. Quantity of Offsets Required

As seen above, the SSPE2 is not greater than the offset thresholds for all the pollutants; therefore offset calculations are not necessary and offsets will not be required for this project.

C. Public Notification

1. Applicability

Public noticing is required for:

- New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
- Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,

- c. Any project which results in the offset thresholds being surpassed, and/or
- d. Any project with an SSPE of greater than 20,000 lb/year for any pollutant.

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

New Major Sources are new facilities, which are also Major Sources. As shown in Section VII.C.5 above, the SSPE2 is not greater than the Major Source threshold for any pollutant. Therefore, 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 does not constitute an SB 288 or Federal Major Modification; therefore, public noticing for SB 288 or Federal Major Modification purposes is not 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. The PE2s for the flare are compared to the daily PE Public Notice thresholds in the following table:

PE > 100 lb/day Public Notice Thresholds			
Pollutant	PE2 (lb/day)	Public Notice Threshold	Public Notice Triggered?
NO _x	204.0	100 lb/day	Yes
SO _x	50.7	100 lb/day	No
PM ₁₀	24.0	100 lb/day	No
CO	1,110.0	100 lb/day	Yes
VOC	189.0	100 lb/day	Yes

Therefore, public noticing for PE > 100 lb/day purposes is required.

c. Offset Threshold

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

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	0	17,000	20,000 lb/year	No
SO _x	0	4,225	54,750 lb/year	No
PM ₁₀	0	2,000	29,200 lb/year	No
CO	0	92,500	200,000 lb/year	No
VOC	0	17,945	20,000 lb/year	No

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

d. SSIPE > 20,000 lb/year

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

SSIPE Public Notice Thresholds					
Pollutant	SSPE2 (lb/year)	SSPE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
NO _x	17,000	0	17,000	20,000 lb/year	No
SO _x	4,225	0	4,225	20,000 lb/year	No
PM ₁₀	2,000	0	2,000	20,000 lb/year	No
CO	92,500	0	92,500	20,000 lb/year	Yes
VOC	17,945	0	17,945	20,000 lb/year	No

As demonstrated above, the SSIPE for CO was greater than 20,000 lb/year; therefore public noticing for SSIPE purposes is required.

2. Public Notice Action

As discussed above, public noticing is required for this project. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC for this equipment.

D. Daily Emission Limits (DELs)

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

S-8422-1

VOC fugitive emissions from the components in gas service on tank and from tank to vapor control system trunk line shall not exceed 0.3 lb/day. [District Rule 2201] N

VOC fugitive emissions from the components in gas service on vapor control system shall not exceed 3.0 lb/day. [District Rule 2201] N

S-8422-2 through '-10

VOC fugitive emissions from the components in gas service on tank and from tank to vapor control system trunk line shall not exceed 0.3 lb/day. [District Rule 2201] N

S-8422-11

Daily and annual amounts of gas flared shall not exceed 3.0 MMscf/day nor 250 MMscf/yr. [District Rule 2201] N

Sulfur compound concentration of gas flared shall not exceed 100 ppmv. [District Rule 2201] N

The emissions from the flare shall not exceed any of the following limits: 0.068 lb-NOx/MMBtu, 0.008 lb-PM10/MMBtu, 0.370 lb-CO/MMBtu, or 0.063 lb-VOC/MMBtu. [District Rule 2201] N

E. Compliance Assurance

1. Source Testing

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

2. Monitoring

The following monitoring conditions are required to demonstrate compliance with Rule 2201.

Tanks

All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rules 2201 and 4623] Y

Flare

Monitoring is required to show compliance with sulfur content limits. The following conditions will be listed on the permit:

Permittee shall document compliance with well gas sulfur compound concentration limit by performing sulfur content analysis of well gas upon startup. [District Rule 2201] N

3. Recordkeeping

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

Tanks

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

The permittee shall keep accurate records of the dates of inspection and monitoring and the components inspected and monitored. [District Rule 2201] N

Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date and time of leak detection, and method of detection; 3) Date and time of leak repair, and emission level of recheck after leak is repaired; 4) Method used to minimize the leak to lowest possible level within 8 hours after detection. [District Rules 2201 and 4623] N

The permittee shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rule 2201 and 4623] N

Flare

Permittee shall maintain daily and annual records of volume of gas flared and annual records of the fuel sulfur content and such records shall be made readily available for District inspection upon request for a minimum of 5 years. [District Rule 2201] N

4. Reporting

There are no reporting requirements for Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

Section 4.14.1 of this Rule requires that an Ambient Air Quality Analysis (AAQA) be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The Technical Services Division of the SJVAPCD conducted the required analysis. Technical Services performed modeling for criteria pollutants CO, NO_x, SO_x and PM₁₀ from the Flare; as well as a RMR. The flare emission rates used for criteria pollutant modeling were 13.104 lb/hr CO, 2.408 lb/hr NO_x, 1.797 lb/hr SO_x, and 0.269 lb/hr PM₁₀. The District's Flare Modeling Parameters spreadsheet was used to calculate the flare parameters used during the AAQA analysis.

Refer to **Attachment V** of this document for the AAQA summary sheet.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*
Values are in µg/m³

Steam Generator	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass	X	Pass	X	X
NO _x	Pass ¹	X	X	X	Pass
SO _x	Pass ²	Pass	X	Pass	Pass
PM ₁₀	X	X	X	Pass ³	Pass ³
PM2.5	X	X	X	Pass ³	Pass ³

*Results were taken from the attached PSD spreadsheet.

¹The project was compared to the 1-hour NO₂ National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures. The criteria pollutant 1-hour value passed using TIER I NO₂ NAAQS modeling

²The project was compared to the 1-hour SO₂ National Ambient Air Quality Standard that became effective on August 23, 2010 using the District's approved procedures.

³The maximum predicted concentration for emissions of these criteria pollutants from the proposed unit are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

As shown, the calculated results indicate that this project is not expected to cause or make worse a violation of an air quality standard.

Rule 4101 Visible Emissions

Per Section 5.0, no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity).

The flare is air-assisted and is expected to continue to operate without visible emissions as stated in the following ATC condition:

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 1/4 or 5% opacity. [District Rules 2201 and 4101] N

Compliance with the requirements of this rule is expected.

Rule 4102 Nuisance

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (**Attachment V**), 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 acute and chronic indices were below 1.0; and the cancer risk was greater than 1 in a million, but less than 10 in a million. **In accordance with the District's Risk Management Policy, the project is approved with Toxic Best Available Control Technology (T-BACT) for VOCs.**

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 required for this project because the HRA indicates that the risk is above the District's thresholds for triggering T-BACT requirements.

For this project T-BACT is triggered for VOC. T-BACT is satisfied with BACT for VOCs which is a Coanda effect flare (BACT Guideline 1.4.2, applies to Waste Gas Flare – Incinerating Produced Gas -Attachment III).

The results of the HRA is included in **Attachment V**.

Rule 4201 Particulate Matter Concentration

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot. For natural gas the EPA F-factor (adjusted to 60°F) is 8710 dscf/MMBtu (40 CFR 60 Appendix B).

PM ₁₀ Emission Factor:	0.008 lb-PM ₁₀ /MMBtu
Percentage of PM as PM ₁₀ in Exhaust:	100%
Exhaust Oxygen (O ₂) Concentration:	3%
Excess Air Correction to F Factor =	$\frac{20.9}{(20.9 - 3)} = 1.17$

$$GL = \left(\frac{0.008 \text{ lb} - PM}{MMBtu} \times \frac{7,000 \text{ grain}}{\text{lb} - PM} \right) / \left(\frac{8,710 \text{ ft}^3}{MMBtu} \times 1.17 \right)$$

$$GL = 0.0055 \text{ grain/dscf} < 0.1 \text{ grain/dscf}$$

Rule 4311 Flares

This rule limits VOC and NOx emissions from flares. The facility has a potential to emit less than 10 tons/yr NOx and 10 tons/yr VOCs and therefore is exempt from all requirements of the rule except the record-keeping requirements of Section 6.2.4. Section 6.2.4 states that "beginning January 1, 2007 facilities claiming an exemption pursuant to Section 4.3 shall record annual throughput, material usage, or other information necessary to demonstrate an exemption under that section." Facility will keep records of annual volumes of gas combusted in the flares to ensure that NOx and VOC emissions remain below 10 tons/yr. Therefore compliance is expected.

Rule 4623 Storage of Organic Liquids

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

The new vessels (tanks and a 3 phase separator) in this project have a capacity greater than 1,100 gallons each. Also, the vessels handle light oil with a TVP up to 4.0 psia. Therefore, this rule is applicable to the tanks and vessels being installed in this project.

Section 5.1 VOC Control System Requirements

Section 5.1.1 General VOC Control System Requirements

Except for small producers who are required to comply with the VOC control system requirements in Section 5.1.2, an operator shall not place, hold, or store organic liquid in any tank unless such tank is equipped with a VOC control system identified in Table 1. The specifications for the VOC control system are described in Sections 5.2, 5.3, 5.4, 5.5, and 5.6.

Table 1 – General VOC Control System Requirements

Tank Capacity (Gallons)	True Vapor Pressure (TVP) of Organic Liquid		
	0.5 psia to <1.5 psia	1.5 psia to <11 psia	≥11.0 psia
(Group A) 1,100 to 19,800	Pressure-vacuum relief valve, or internal floating roof, or external floating roof, or vapor recovery system	Pressure-vacuum relief valve, or internal floating roof, or external floating roof, or vapor recovery system	Pressure vessel or vapor recovery system
(Group B) > 19,800 to 39,600	Pressure-vacuum relief valve, or internal floating roof, or external floating roof, or vapor recovery system	Internal floating roof, or external floating roof, or vapor recovery system	Pressure vessel or vapor recovery system
(Group C) > 39,600	Internal floating roof, or external floating roof, or vapor recovery system	Internal floating roof, or external floating roof, or vapor recovery system	Pressure vessel or vapor recovery system

All the tanks in this project are connected to a vapor control system; therefore, the control requirements of Table 1 are satisfied.

The equipment description on every tank permit will clearly state that the permit unit is vented to the shared TVR system S-8422-1.

The following conditions will be listed on ATC S-8422-1 to ensure compliance with the control requirements of Table 1:

Except as otherwise provided for on this permit, this tank shall only vent to the vapor control system. [District Rules 2201 and 4623, 5.1]

Vapor control system compressor(s) shall activate before the pressure relief valve on any of the units served by the vapor control system vents to the atmosphere. [District Rules 2201 and 4623, 5.1]

Except as otherwise provided in this permit, the operator shall ensure that the vapor control system is functional and is operating as designed. [District Rules 2201 and 4623, 5.1]

Section 5.1.3 requires all tanks subject to the control requirements of this rule to be maintained in a leak-free condition, except for the certain enumerated components on floating roof tanks and as allowed by Section 5.2 and applicable provisions of Table 3 through Table 5, and Section 5.7.5.4.

The following condition will be listed on ATC's S-8422-1-0 through '-10-0 to ensure compliance with leak-free requirements of Section 5.1.3:

All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rules 2201 and 4623] N

Section 5.6 Specifications for Vapor Recovery Systems

Section 5.6.1 requires fixed roof tanks to be fully enclosed and maintained in a leak free condition. An APCO-approved vapor recovery system shall consist of a closed system that collects all VOCs from the storage tank, and a VOC control device. The vapor recovery system shall be maintained in a leak free condition. The VOC control device shall be one of the following:

5.6.1.1 A condensation or vapor return system that connects to one of the following: a gas processing plant, a field gas pipeline, a pipeline distributing Public Utility Commission quality gas for sale, an injection well for disposal of vapors as approved by the California Department of Conservation, Division of Oil Gas, and Geothermal Resources (DOGGR), or

5.6.1.2 A VOC control device that reduces the inlet VOC emissions by at least 95 percent by weight as determined by the test method specified in Section 6.4.6.

Tank vapors will be combusted in a flare which ensures compliance with Section 5.6.1:

Section 5.6.2 requires any tank gauging or sampling device on a tank vented to the vapor recovery system to be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling.

The following condition will be listed on the tank ATC's to ensure compliance with the requirements of Section 5.6.2:

Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rules 2201 and 4623] N

Section 5.6.3 requires all piping, valves, and fittings to be constructed and maintained in a leak free condition.

The following condition will be listed on vessel ATC's to ensure compliance with the requirements of Section 5.6.3:

All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rules 2201 and 4623] N

Section 5.7 Voluntary Tank Preventive Inspection and Maintenance, and Tank Interior Cleaning Program

Inspection and Maintenance:

Aera has proposed to follow the Voluntary Inspection and Maintenance program outlined in the rule. The following conditions, taken from draft District Policy SSP 2215, Organic Liquid Storage Tanks – Voluntary Inspection and Maintenance Program will appear on all of the ATC's in this project:

Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 4623, Table 3]

Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rule 4623, Table 3]

Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rule 4623, Table 3]

Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rule 4623, Table 3]

Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 3 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 3 shall constitute a violation of this rule. [District Rule 4623, Table 3]

If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rule 4623, Table 3]

Any component found to be leaking on two consecutive annual inspections is in violation of this rule, even if covered under the voluntary inspection and maintenance program. [District Rule 4623, Table 3]

Tank Interior Cleaning Program:

Aera has requested tank-cleaning provisions on the permits. The following conditions are taken from District Policy SSP 2210, Organic Liquid Storage Tanks – Cleaning Requirements and will be included on all of the ATC's in this project:

Permittee shall notify the APCO in writing at least three (3) days prior to performing tank degassing and interior tank cleaning activities. Written notification shall include the following: 1) the Permit to Operate number and physical location of the tank being degassed, 2) the date and time that tank degassing and cleaning activities will begin, 3) the degassing method, as allowed in this permit, to be used, 4) the method to be used to clean the tank, including any solvents to be used, and 5) the method to be used to dispose of any removed sludge, including methods that will be used to control emissions from the receiving vessel and emissions during transport. [District Rule 4623, 5.7]

This tank shall be degassed before commencing interior cleaning by one of the following methods (1) exhausting VOCs contained in the tank vapor space to an APCO-approved vapor recovery system until the organic vapor concentration is 5,000 ppmv or less, or is 10 percent or less of the lower explosion limit (LEL), whichever is less; or (2) displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable liquid until 90 percent or more of the maximum operating level of the tank is filled. Suitable liquids are organic liquids having a TVP of less than 0.5 psia, water, clean produced water or produced water derived from crude oil having a TVP less than 0.5 psia; or (3) displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable gas. Degassing shall continue until the operator has achieved a vapor displacement equivalent to at least 2.3 times the tank capacity. Suitable gases are air, nitrogen, carbon dioxide, or natural gas containing less than 10 percent VOC by weight. [District Rule 4623, 5.7]

During tank degassing, the operator shall discharge or displace organic vapors contained in the tank vapor space to an APCO-approved vapor recovery system. [District Rule 4623, 5.7]

To facilitate connection to an external APCO-approved recovery system, a suitable tank fitting, such as a manway, may be temporarily removed for a period of time not to exceed 1 hour. [District Rule 4623, 5.7]

This tank shall be in compliance with the applicable requirements of District Rule 4623 at all times during draining, degassing, and refilling the tank with an organic liquid. [District Rule 4623, 5.7]

After a tank has been degassed pursuant to the requirements of this permit, vapor control requirements are not applicable until an organic liquid is placed, held, or stored in this tank. [District Rule 4623, 5.7]

While performing tank cleaning activities, operators may only use the following cleaning agents: diesel, solvents with an initial boiling point of greater than 302 degrees F, solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams of VOC per liter or less. [District Rule 4623, 5.7]

Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rule 4623, 5.7]

During sludge removal, the operator shall control emissions from the sludge receiving vessel by operating an APCO-approved vapor control device that reduces emissions of organic vapors by at least 95%. [District Rule 4623, 5.7]

Permittee shall only transport removed sludge in closed, liquid leak-free containers. [District Rule 4623, 5.7]

Permittee shall store removed sludge, until final disposal, in vapor leak-free containers, or in tanks complying with the vapor control requirements of District Rule 4623. Sludge that is to be used to manufacture roadmix, as defined in District Rule 2020, is not required to be stored in this manner. Roadmix manufacturing operations exempt pursuant to District Rule 2020 shall maintain documentation of their compliance with Rule 2020, and shall readily make said documentation available for District inspection upon request. [District Rules 2020 and 4623, 5.7]

Since Rule 4623, Table 3 does not explicitly state what records are required from the I&M conducted, nor is a recordkeeping condition specified in draft District Policy SSP 2215, Organic Liquid Storage Tanks – Voluntary Inspection and Maintenance Program, the following standard I&M recordkeeping condition found on most oil production tank permits. The rule citation is District Rule 1070, Inspections.

Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date and time of leak detection, and method of detection; 3) Date and time of leak repair, and emission level of recheck after leak is repaired; 4) Method used to minimize the leak to lowest possible level within 8 hours after detection. [District Rule 1070]

Section 6.2 TVP and API Gravity Testing of Stored Organic Liquids in Uncontrolled Fixed Roof Tanks

All the tanks in this project are connected to a vapor control system; therefore, none of the tanks are subject to the testing requirements of this rule.

Section 6.3 Recordkeeping

This section requires an operator to retain accurate records required by this rule for a period of five years. Records must be made available to the APCO upon request, except for certain records that need to be submitted as specified in the respective sections (e.g. 6.3.6) below.

Compliance with the record retention requirements of this section is ensured by the following standard permit condition which will appear on all the ATC's in this project:

The operator shall maintain all records of required monitoring data and support information for inspection at any time for a period of five years. [District Rules 2201 and 4623]

Section 6.3.6 requires an operator to submit the records of TVP and API gravity testing conducted in accordance with the requirements of Section 6.2 to the APCO within 45 days after the date of testing. The record should include the tank identification number, PTO number, type of stored organic liquid, TVP and API gravity of the stored organic liquid, test methods used, and a copy of the test results.

None of the tanks in this project are subject to the TVP or API gravity testing requirements; therefore, Section 6.3.6 is not applicable.

Section 6.4 Test Methods

The tanks in this project are not subject to periodic API gravity or TVP testing requirements. Therefore, the approved test methods for API gravity and TVP will not be listed on the ATC's.

Section 7.2 Compliance Schedule

Any tank that is exempted under Section 4.0 that becomes subject to the VOC control system requirements of this rule through the loss of exemption status shall be in full compliance with this rule on the date the exemption status is lost.

The tanks in this project will be in full compliance with the requirements of this rule. Compliance with the requirements of this rule is expected.

Rule 4624 Organic Liquid Loading

The purpose of Rule 4624 is to limit VOC emissions from the transfer of organic liquids.

Section 4.5 states "Except for the one-time record submission requirement of Section 6.1.5 for vacuum truck operators, the requirements of this rule shall not apply to transfer operations involving vacuum trucks." Therefore, the rule is not applicable.

Rule 4801 Sulfur Compounds

Rule 4801 requires that a person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: two-tenths (0.2) percent by volume calculated as sulfur dioxide (SO₂), on a dry basis averaged over 15 consecutive minutes.

Emission calculations were calculated using a fuel with a 100 ppmv sulfur content (6 gr S/100scf).

Therefore, the maximum SO_x ppmv are calculated to be:

$$\begin{aligned} \text{SO}_x &= (6 \text{ gr}/100 \text{ dscf fuel}) \times (1 \text{ lb}/7000 \text{ gr S}) \times (1 \text{ mol}/32 \text{ lb S}) \times (379.5 \text{ dscf S}/1 \text{ mol S}) \times \\ &\quad (1 \text{ dscf fuel}/1000 \text{ Btu}) \times (1 \times 10^6 \text{ Btu}/8710 \text{ dscf}) \times (1 \times 10^6) \\ &= 11.7 \text{ ppmv} < 2,000 \text{ ppmv} \end{aligned}$$

$$* [100 \text{ ft}^3/10^6 \text{ ft}^3] [32 \text{ lb S}/379 \text{ ft}^3] [7000 \text{ gr}/\text{lb}] = 0.06 \text{ gr}/\text{ft}^3 \text{ or } 6 \text{ gr S}/100 \text{ scf}$$

California Health & Safety Code 42301.6 (School Notice)

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

California Environmental Quality Act (CEQA)

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

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

Greenhouse Gas (GHG) Significance Determination

Draft District Policy

CEQA Determinations of Significance for Projects Subject to ARB's GHG Cap-and-Trade Regulation

GHG emissions addressed by the Cap and Trade regulation are subject to an industry-wide cap on overall GHG emissions. As such, any growth in emissions must be accounted for under that cap, such that a corresponding and equivalent reduction in emissions must occur to allow any increase. Therefore, it is reasonable to conclude that implementation of the Cap and Trade program will and must fully mitigate project-specific GHG emissions for emissions that are covered by the Cap and Trade regulation.

Regardless of and independent to the significance determination made above, the District finds that, through compliance with the Cap and Trade regulation, project-specific GHG emissions that are covered by the regulation will be fully mitigated. The District therefore concludes that GHG emissions increases subject to ARB's Cap and Trade regulation would have a less than significant individual and cumulative impact on global climate change.

Entities Covered by this Policy

Industries covered by Cap and Trade are identified in the regulation as two main groups:

1. Electric utilities and large industrial facilities. These types of facilities are subject to compliance obligations starting in 2013, and the specific companies covered are listed here (list maintained by the California Air Resources Board).
2. Suppliers of transportation fuels, natural gas and other fuels. These entities are subject to compliance obligations starting in 2015, which obligations must cover all fuels (except jet fuels) delivered to end users in California, less the fuel delivered to covered entities (list in item 1 above).

Both of these groups of entities are covered by this policy, as both groups had their baseline emissions levels established with the original Cap and Trade regulation, and both group are subject to mitigation requirements for a significant portion of their baseline emissions, and, more importantly for the intent of this policy, mitigation is required for all emissions increases covered at both groups of entities.

This means that all GHG emission increases caused by fuel-use (other than the use of jet fuels) are mitigated under Cap and Trade, either by a Group 1 facility, directly, or by the Group 2 supplier of that fuel. Therefore, GHG emission increases caused by fuel use (other than jet fuels), as is the case with this project, are not significant under CEQA.

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. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATCs S-8422-1-0 through '-11-0 **Attachment VI**.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-8422-1 through '-10	3020-05-SB	16,800 gallons (small producer)	\$44.00
S-8422-11	3020-02-H	125 MMBtu/hr	\$1030.00

Attachments

- I: Fugitive Emissions Calculations
- II: Emissions Profiles
- III: BACT Guidelines
- IV: BACT Analysis
- V: HRA and AAQA
- VI: Draft ATCs

Attachment I
Fugitive Emissions Calculations

VAPOR RECOVERY SYSTEM

Project # , Permit Unit #

Fugitive Emissions Using Screening Emission Factors

California Implementation Guidelines for Estimating Mass Emissions
of Fugitive Hydrocarbon Leaks at Petroleum Facilities

*Table IV-2c. Oil and Gas Production
Screening Value Ranges Emission Factors*

Percentage of components with $\geq 10,000$ ppmv leaks allowed? 0 %
 Weight percentage of VOC in the total organic compounds in gas (neglect 100 %
 Weight percentage of VOC in the total organic compounds in oil (neglect n 100 %

Equipment Type	Service	Component Count	Total allowable leaking components	Screening Value EF: TOC < 10,000 ppmv (lb/day/source)	> 10,000 ppmv (lb/day/source)	VOC emissions (lb/day)
Valves	Gas/Light Liquid	213	0	1.852E-03	7.333E+00	0.39
	Light Crude Oil	0	0	1.005E-03	3.741E+00	0.00
	Heavy Crude Oil	0	0	7.408E-04	N/A*	0.00
Pump Seals	Gas/Light Liquid	0	0	5.270E-02	4.709E+00	0.00
	Light Crude Oil	0	0	1.402E-02	4.709E+00	0.00
	Heavy Crude Oil	0	0	N/A	N/A	N/A
Others	Gas/Light Liquid	147	0	7.778E-03	7.281E+00	1.14
	Light Crude Oil	0	0	6.931E-03	3.757E-01	0.00
	Heavy Crude Oil	0	0	3.016E-03	N/A*	0.00
Connectors	Gas/Light Liquid	1,626	0	6.349E-04	1.370E+00	1.03
	Light Crude Oil	75	0	5.291E-04	1.238E+00	0.04
	Heavy Crude Oil	0	0	4.233E-04	4.233E-04	0.00
Flanges	Gas/Light Liquid	288	0	1.482E-03	3.228E+00	0.43
	Light Crude Oil	0	0	1.270E-03	1.376E+01	0.00
	Heavy Crude Oil	0	0	1.217E-03	N/A*	0.00
Open-ended Lines	Gas/Light Liquid	0	0	1.270E-03	2.905E+00	0.00
	Light Crude Oil	0	0	9.524E-04	1.175E+00	0.00
	Heavy Crude Oil	0	0	7.937E-04	3.762E+00	0.00

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

Total VOC Emissions =

3.0 lb/day

OIL PRODUCTION TANK

Project # , Permit Unit #

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

Percentage of components with $\geq 10,000$ ppmv leaks allowed? 0 %

Weight percentage of VOC in the total organic compounds in gas (neglect 100 %

Weight percentage of VOC in the total organic compounds in oil (neglect n 100 %

Equipment Type	Service	Component Count	Total allowable leaking components	Screening Value EF - TOC		VOC emissions
				< 10,000 ppmv (lb/day/source)	$\geq 10,000$ ppmv (lb/day/source)	(lb/day)
Valves	Gas/Light Liquid	12	0	1.852E-03	7.333E+00	0.02
	Light Crude Oil	0	0	1.005E-03	3.741E+00	0.00
	Heavy Crude Oil	0	0	7.408E-04	N/A*	0.00
Pump Seals	Gas/Light Liquid	0	0	5.270E-02	4.709E+00	0.00
	Light Crude Oil	0	0	1.402E-02	4.709E+00	0.00
	Heavy Crude Oil	0	0	N/A	N/A	N/A
Others	Gas/Light Liquid	14	0	7.778E-03	7.281E+00	0.11
	Light Crude Oil	0	0	6.931E-03	3.757E-01	0.00
	Heavy Crude Oil	0	0	3.016E-03	N/A*	0.00
Connectors	Gas/Light Liquid	87	0	6.349E-04	1.370E+00	0.06
	Light Crude Oil	0	0	5.291E-04	1.238E+00	0.00
	Heavy Crude Oil	0	0	4.233E-04	4.233E-04	0.00
Flanges	Gas/Light Liquid	65	0	1.482E-03	3.228E+00	0.10
	Light Crude Oil	0	0	1.270E-03	1.376E+01	0.00
	Heavy Crude Oil	0	0	1.217E-03	N/A*	0.00
Open-ended Lines	Gas/Light Liquid	0	0	1.270E-03	2.905E+00	0.00
	Light Crude Oil	0	0	9.524E-04	1.175E+00	0.00
	Heavy Crude Oil	0	0	7.937E-04	3.762E+00	0.00

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

Total VOC Emissions =

0.3 lb/day

Attachment II Emissions Profiles

Permit #: S-8422-1-0	Last Updated
Facility: AERA ENERGY LLC	12/14/2013 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	1205.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	3.3
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	301.0
Q2:	0.0	0.0	0.0	0.0	301.0
Q3:	0.0	0.0	0.0	0.0	301.0
Q4:	0.0	0.0	0.0	0.0	302.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-8422-2-0	Last Updated
Facility: AERA ENERGY LLC	12/14/2013 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	110.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	0.3
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	27.0
Q2:	0.0	0.0	0.0	0.0	27.0
Q3:	0.0	0.0	0.0	0.0	28.0
Q4:	0.0	0.0	0.0	0.0	28.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-8422-3-0	Last Updated
Facility: AERA ENERGY LLC	12/14/2013 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	110.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	0.3
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	27.0
Q2:	0.0	0.0	0.0	0.0	27.0
Q3:	0.0	0.0	0.0	0.0	28.0
Q4:	0.0	0.0	0.0	0.0	28.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-8422-4-0	Last Updated
Facility: AERA ENERGY LLC	12/14/2013 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	110.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	0.3
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	27.0
Q2:	0.0	0.0	0.0	0.0	27.0
Q3:	0.0	0.0	0.0	0.0	28.0
Q4:	0.0	0.0	0.0	0.0	28.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-8422-5-0	Last Updated
Facility: AERA ENERGY LLC	12/14/2013 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	110.0
Daily Emiss. Limit (lb/Day)	0.0	0.0	0.0	0.0	0.3
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	27.0
Q2:	0.0	0.0	0.0	0.0	27.0
Q3:	0.0	0.0	0.0	0.0	28.0
Q4:	0.0	0.0	0.0	0.0	28.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-8422-6-0	Last Updated
Facility: AERA ENERGY LLC	12/14/2013 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	110.0
Daily Ems. Limit (lb/Day)	0.0	0.0	0.0	0.0	0.3
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	27.0
Q2:	0.0	0.0	0.0	0.0	27.0
Q3:	0.0	0.0	0.0	0.0	28.0
Q4:	0.0	0.0	0.0	0.0	28.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-8422-7-0 Facility: AERA ENERGY LLC Last Updated: 12/14/2013 EDGEHILR

Equipment Pre-Baselined: ND

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	110.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	0.3
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	27.0
Q2:	0.0	0.0	0.0	0.0	27.0
Q3:	0.0	0.0	0.0	0.0	28.0
Q4:	0.0	0.0	0.0	0.0	28.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-8422-8-0	Last Updated
Facility: AERA ENERGY LLC	12/14/2013 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	110.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	0.3
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	27.0
Q2:	0.0	0.0	0.0	0.0	27.0
Q3:	0.0	0.0	0.0	0.0	28.0
Q4:	0.0	0.0	0.0	0.0	28.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-8422-9-0	Last Updated
Facility: AERA ENERGY LLC	12/14/2013 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	110.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	0.3
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	27.0
Q2:	0.0	0.0	0.0	0.0	27.0
Q3:	0.0	0.0	0.0	0.0	28.0
Q4:	0.0	0.0	0.0	0.0	28.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-8422-10-0	Last Updated
Facility: AERA ENERGY LLC	12/14/2013 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	0.0	0.0	0.0	0.0	110.0
Daily Emis. Limit (lb/Day)	0.0	0.0	0.0	0.0	0.3
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	0.0	0.0	0.0	0.0	27.0
Q2:	0.0	0.0	0.0	0.0	27.0
Q3:	0.0	0.0	0.0	0.0	28.0
Q4:	0.0	0.0	0.0	0.0	28.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Permit #: S-8422-11-0	Last Updated
Facility: AERA ENERGY LLC	12/14/2013 EDGEHILR

Equipment Pre-Baselined: NO

	<u>NOX</u>	<u>SOX</u>	<u>PM10</u>	<u>CO</u>	<u>VOC</u>
Potential to Emit (lb/Yr):	16750.0	4225.0	2000.0	92500.0	15750.0
Daily Ems. Limit (lb/Day)	201.0	50.7	24.0	1101.1	189.0
Quarterly Net Emissions Change (lb/Qtr)					
Q1:	4187.0	1056.0	500.0	23125.0	3937.0
Q2:	4187.0	1056.0	500.0	23125.0	3937.0
Q3:	4188.0	1056.0	500.0	23125.0	3938.0
Q4:	4188.0	1057.0	500.0	23125.0	3938.0
Check if offsets are triggered but exemption applies	N	N	N	N	N
Offset Ratio					
Quarterly Offset Amounts (lb/Qtr)					
Q1:					
Q2:					
Q3:					
Q4:					

Attachment III
BACT Guideline

**San Joaquin Valley
Unified Air Pollution Control District**

Best Available Control Technology (BACT) Guideline 1.4.2*

Last Update 12/31/1998

Waste Gas Flare - Incinerating Produced Gas

Pollutant	Achieved In Practice or contained In the SIP	Technologically Feasible	Alternate Basic Equipment
CO	Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable		
NOx	Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable		
PM10	Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable Pilot Light fired solely on LPG or natural gas.		
SOx	Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable Pilot Light fired solely on LPG or natural gas.	Precombustion SOx scrubbing system (non-emergency flares only.)	
VOC	Steam assisted or Air-assisted or Coanda effect burner, when steam unavailable		

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 IV BACT Analysis

BACT Guidelines 1.4.2, apply to Waste Gas Flare – Incinerating Produced Gas

Top Down BACT Analysis for NO_x and VOC emissions:

Step 1 - Identify All Control Technologies

Steam-assisted, Air-assisted or Coanda effect burner, when steam unavailable
(Achieved in Practice)

Step 2 - Eliminate Technologically Infeasible Options

Steam-assisted flare. Steam is not available at the site, i.e. the existing well is not steamed.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Air-assisted or Coanda effect burner, when steam unavailable
(Achieved in Practice)

Step 4 - Cost Effectiveness Analysis

Applicant has proposed the one remaining option from Step 1, Coanda effect.
Therefore, a cost analysis is not required.

Step 5 - Select BACT

The flare is Coanda effect. Therefore BACT is satisfied.

Top Down BACT Analysis for PM₁₀ and SO_x emissions:

Step 1 - Identify All Control Technologies

Steam- or air-assisted with smokeless combustion. Pilot light fired on LPG or natural gas. (Achieved in Practice)

Pre-combustion SO_x scrubbing system (nonemergency flares only)

Step 2 - Eliminate Technologically Infeasible Options

None eliminated.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Pre-combustion SO_x scrubbing system (nonemergency flares only)

Steam assisted or air-assisted with smokeless combustion. Pilot light fired on LPG or natural gas. (Achieved in Practice)

Step 4 - Cost Effectiveness Analysis

Applicant has provided the following cost effectiveness analysis for pre-combustion sulfur scrubbing. As the applicant has stated that the maximum sulfur limit of produced gas is 100 ppm, 95% control equates to a post-control value of 5 ppm sulfur in the flare gas which is less than the current District standard for natural gas, 1 gr S/100 dscf (approximately 17 ppm) for natural gas (see Rule 2020, Section 6.1.1.1). The source is not required to be controlled beyond current District standards for gas quality. The District has established a sulfur standard of 1 gr/100 dscf (approximately 17 ppm) for natural gas (see Rule 2020, Section 6.1.1.1).

Emissions Controlled:

EF @ 100 ppm sulfur = 0.0169 lb/MMBtu

EF @ 1 gr/100 dscf = 0.00286 lb/MMBtu

Emissions Controlled = $(0.0169 \text{ lb/MMBtu} - 0.00286 \text{ lb/MMBtu}) \times (250 \text{ MMcf/yr}) \times (1000 \text{ Btu/ft}^3) = 3,510 \text{ lbs/yr} = 1.755 \text{ ton/yr}$

Cost Estimates:

Applicant has provided installation and annual operating cost for pre-combustion scrubbing (H2S scavenger). Aera estimates the purchase and installation of the following equipment would cost approximately \$84,000.

Capital Cost Estimate			
Item	Quantity	Unit Price	Total
Separator Vessel	1 ea	\$25,000 / ea	\$ 25,000
Chemical Tank + Containment	1 ea	\$ 3,000 / ea	\$ 3,000
Chemical Pump	2 ea	\$ 1,500 / ea	\$ 3,000
Piping Material	1 lot	\$ 5,000 / lot	\$ 5,000
Electrical Material	1 lot	\$ 5,000 / lot	\$ 5,000
Installation	1 lot	\$25,000 / lot	\$ 25,000
Sub-Total			\$ 66,000
Contingency	18.4%		\$ 12,139
CSO	7.5%		\$ 5,860
AFE Total			\$ 84,000
Amortized Capex (10 years)			\$ 13,667 / year
Operating & Maintenance Cost Estimate			
Item	Quantity	Unit Price	Total
Liquid H2S Scavenger	6 lb \$ / day	\$ 5.00 / lb	\$ 30 / day
			\$ 10,950 / year
Operations / Maintenance (labor, power, repairs, etc.)	1 day	\$ 28.00 / day	\$ 28 / day
			\$ 10,220 / year
Operating Total			\$ 21,170 / year
Total Annual Cost			\$ 34,837 / year

The annual cost of the chemical and associated operations/maintenance/electrical/repairs is expected to be \$21,170 per year.

Annualized Capital Cost

Capital Cost (PCL): (includes all purchased equipment, taxes, freight, and installation) - detailed costs follow.

Total Estimated Capital Cost: \$84,000 (January 16, 2014 estimate in email)

Equivalent Annual Capital Cost (Capital Recovery)

$$A = P \frac{i(1+i)^n}{(1+i)^n - 1} \quad \text{where;}$$

A = Equivalent Annual Control Equipment Capital Cost

P = Present value of the control equipment, including installation cost

i = interest rate (use 10%, or demonstrate why alternate is more representative of the specific operation).

n = equipment life (assume 10 years or demonstrate why alternate is more representative of the specific operation)

Where

P = \$84,000

i = 10%,

n = 10 years

A = \$13,667/yr

Total annualized cost = \$21,170/yr + \$13,667/yr
= \$34,837

Cost Effectiveness:

Cost-effectiveness is equal to the annual cost to implement the control strategy divided by the calculated emission reduction.

Cost-Effectiveness = \$34,837 / 1.755 tons = \$19,850/ton

The cost of sulfur treatment is above the cost-effectiveness threshold of \$18,300, and therefore is eliminated from consideration as BACT.

Step 5 - Select BACT

The flare is Coanda effect and pilot light is fired on LPG. Therefore BACT is satisfied.

Attachment V
HRA and AAQA

San Joaquin Valley Air Pollution Control District Risk Management Review

To: Richard Edgehill, AQE – Permit Services
From: Trevor Joy, AQS – Technical Services
Date: January 17, 2014
Facility Name: Aera Energy LLC
Location: NW Section 4, T27S, R22E
Application #(s): S-8422-1-0 through 11-0
Project #: 1134653

A. RMR SUMMARY

Categories	Units 1-0 through 10-0 Oil storage Tanks	Unit 11-0 Flare	Project Totals	Facility Totals
Prioritization Score	0.2	12.0	12.2	12.2
Acute Hazard Index	N/A ¹	0.04	0.04	0.04
Chronic Hazard Index	N/A ¹	0.00	0.00	0.00
Maximum Individual Cancer Risk (10 ⁻⁶)	N/A ¹	1.18	1.18	1.18
T-BACT Required?	No	Yes		
Special Permit Conditions?	No	No		

1. The prioritization score is less than 1 so no further analysis is required.

Proposed Permit Conditions

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

Units 1 through 11

No special conditions required.

B. RMR REPORT

I. Project Description

Technical Services received a revised request on December 16, 2013 to perform an Ambient Air Quality Analysis and a Risk Management Review for the proposed installation of 10 oil storage tanks and a NG flare.

II. Analysis

Technical Services performed a prioritization using the District's HEARTs database. Emissions were calculated using "Oilfield Equipment Fugitives Heavy Crude Oil" for units 1 through 10 and "Oilfield Natural Gas-Fired + Waste Gas Flare" emission factors for unit 11. In accordance with the District's *Risk Management Policy for Permitting New and Modified Sources* (APR 1905, March 2, 2001), risks from the proposed unit's toxic emissions were prioritized using the procedure in the 1990 CAPCOA Facility Prioritization Guidelines and incorporated in the District's HEARTs database. For units 1 through 10, the prioritization score for this proposed unit was less than 1 (see RMR Summary Table). Therefore, no further analysis was necessary. For unit 11, the prioritization score was greater than 1.0 (see RMR Summary Table). Therefore, a refined analysis was required and performed. AERMOD was used, with the parameters outlined below and concatenated meteorological data for Bakersfield 2005 – 2009 to determine the maximum dispersion factor at the nearest residential and business receptors. These dispersion factors were input into the HARP model to calculate the chronic and acute hazard indices and the carcinogenic risk for the project. AERMOD was also used for the AAQA analysis, with the parameters outlined below and meteorological data for Bakersfield 2005 – 2009 to determine the maximum dispersion factors.

The following parameters were used for the review:

Analysis Parameter Units 1 through 10 (each)			
Closest Receptor - Business (m)	1281	Closest Receptor - Resident (m)	167
Tank VOC Emissions (lbs/hr)	0.0125	Tank VOC Emissions (lbs/yr)	110

Analysis Parameter Unit 11-0 Flare			
Closest Receptor - Business (m)	1281	Closest Receptor - Resident (m)	167
NG and Waste Gas Usage (MMScf/hr)	0.125	NG and Waste Gas Usage (MMScf/yr)	250
Effective Release Height (m)	7.7	Gas Exit Temperature (K)	1273
Stack Inside Diameter (m)	2.27	Gas Exit Velocity (ACFM)	171,505

Technical Services also performed modeling for criteria pollutants CO, NO_x, SO_x and PM₁₀; as well as a RMR. The emission rates used for criteria pollutant modeling were

	NO _x	Sox	CO	PM10	PM2.5
Lbs/hr	8.4	2.11	45.8	1.0	1.0
Lbs/yr	16,750	4,225	92,500	2,000	2,000

The results from the Criteria Pollutant Modeling are as follows:

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

Steam Generator	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	Pass ¹	X	Pass	X	X
NO _x	Pass ¹	X	X	X	Pass
SO _x	Pass ²	Pass	X	Pass	Pass
PM ₁₀	X	X	X	Pass ³	Pass ³
PM2.5	X	X	X	Pass ³	Pass ³

*Results were taken from the attached PSD spreadsheet.

¹The project was compared to the 1-hour NO₂ National Ambient Air Quality Standard that became effective on April 12, 2010 using the District's approved procedures. The criteria pollutant 1-hour value passed using TIER I NO₂ NAAQS modeling

²The project was compared to the 1-hour SO₂ National Ambient Air Quality Standard that became effective on August 23, 2010 using the District's approved procedures.

³The maximum predicted concentration for emissions of these criteria pollutants from the proposed unit are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

III. Conclusion

The acute and chronic indices are below 1.0; and the cancer risk is greater than 1 in a million, but less than 10 in a million. **In accordance with the District's Risk Management Policy, the project is approved with Toxic Best Available Control Technology (T-BACT) for VOCs.**

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

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

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.

Attachments:

- A. RMR request from the project engineer
- B. Prioritization score with toxic emissions summary
- C. HEARTS – Facility Summary
- D. AAQA spreadsheet

Attachment VI
Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-8422-1-0

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: LIGHT OIL CENTRAL STATIONARY SOURCE
KERN COUNTY, CA

SECTION: NW 4 TOWNSHIP: 27S RANGE: 22 E

EQUIPMENT DESCRIPTION:

400 BBL CRUDE OIL STORAGE TANK WITH VAPOR CONTROL SYSTEM INCLUDING COMPRESSOR(S), FIN-FAN COOLER(S), AND GAS SCRUBBER(S) VENTED TO FLARE LISTED ON S-8422-11

CONDITIONS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. The vapor control system shall be capable of reducing VOC emissions by at least 95% by weight. [District Rule 4623]
3. Except as otherwise provided for on this permit, this tank shall only vent to the vapor control system. [District Rules 2201 and 4623]
4. Vapor control system compressor(s) shall activate before the pressure relief valve on any of the units served by the vapor control system vents to the atmosphere. [District Rules 2201 and 4623]
5. Except as otherwise provided in this permit, the operator shall ensure that the vapor control system is functional and is operating as designed. [District Rules 2201 and 4623]
6. Collected tank vapors shall only be combusted in flare S-8422-11. [District Rule 2201]
7. All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rules 2201 and 4623]
8. A leak-free condition is defined as a condition without a gas leak. A gas leak is defined as a reading in excess of 10,000 ppmv, above background, as measured by a portable hydrocarbon detection instrument in accordance with the procedures specified in EPA Test Method 21. A reading in excess of 10,000 ppmv above background is a violation of this permit and Rule 4623. [District Rules 2201 and 4623]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (861) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services
S-8422-1-0 : Jan 22 2014 8:08AM - EDC/ANLR : Joint Inspection NOT Required

Southern Regional Office • 34946 Flyover Court • Bakersfield, CA 93308 • (861) 392-5500 • Fax (861) 392-5585

9. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rules 2201 and 4623]
10. VOC fugitive emissions from the components in gas/light oil service on tank and from tank to vapor control system trunk line shall not exceed 0.3 lb/day. [District Rule 2201]
11. VOC fugitive emissions from the components in gas service on vapor control system shall not exceed 3.0 lb/day. [District Rule 2201]
12. Permittee shall maintain accurate component count for tank according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2c (Feb 1999), Screening Value Range emission factors < 10,000 ppmv. Permittee shall update such records when new components are approved and installed. [District Rule 2201]
13. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rules 2201 and 4623]
14. Any component found to be leaking by the operator on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rules 2201 and 4623]
15. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2201 and 4623]
16. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rules 2201 and 4623]
17. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rules 2201 and 4623]
18. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rules 2201 and 4623]
19. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 3 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 3 shall constitute a violation of this rule. [District Rules 2201 and 4623]
20. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rules 2201 and 4623]
21. The permittee shall keep accurate records of the dates of inspection and monitoring and the components inspected and monitored. [District Rule 2201]
22. Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date and time of leak detection, and method of detection; 3) Date and time of leak repair, and emission level of recheck after leak is repaired; 4) Method used to minimize the leak to lowest possible level within 8 hours after detection. [District Rules 2201 and 4623]

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CONDITIONS CONTINUE ON NEXT PAGE

23. Permittee shall notify the APCO in writing at least three (3) days prior to performing tank degassing and interior tank cleaning activities. Written notification shall include the following: 1) the Permit to Operate number and physical location of the tank being degassed, 2) the date and time that tank degassing and cleaning activities will begin, 3) the degassing method, as allowed in this permit, to be used, 4) the method to be used to clean the tank, including any solvents to be used, and 5) the method to be used to dispose of any removed sludge, including methods that will be used to control emissions from the receiving vessel and emissions during transport. [District Rule 4623]
24. This tank shall be degassed before commencing interior cleaning by one of the following methods (1) exhausting VOCs contained in the tank vapor space to an APCO-approved vapor recovery system until the organic vapor concentration is 5,000 ppmv or less, or is 10 percent or less of the lower explosion limit (LEL), whichever is less; or (2) displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable liquid until 90 percent or more of the maximum operating level of the tank is filled. Suitable liquids are organic liquids having a TVP of less than 0.5 psia, water, clean produced water, or produced water derived from crude oil having a TVP less than 0.5 psia; or (3) displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable gas. Degassing shall continue until the operator has achieved a vapor displacement equivalent to at least 2.3 times the tank capacity. Suitable gases are air, nitrogen, carbon dioxide, or natural gas containing less than 10 percent VOC by weight. [District Rule 4623]
25. During tank degassing, the operator shall discharge or displace organic vapors contained in the tank vapor space to an APCO-approved vapor recovery system. [District Rule 4623]
26. To facilitate connection to an external APCO-approved recovery system, a suitable tank fitting, such as a manway, may be temporarily removed for a period of time not to exceed 1 hour. [District Rule 4623]
27. This tank shall be in compliance with the applicable requirements of District Rule 4623 at all times during draining, degassing, and refilling the tank with an organic liquid. [District Rule 4623]
28. After a tank has been degassed pursuant to the requirements of this permit, vapor control requirements are not applicable until an organic liquid is placed, held, or stored in this tank. [District Rule 4623]
29. While performing tank cleaning activities, operators may only use the following cleaning agents: water, diesel, solvents with an initial boiling point of greater than 302 degrees F, solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams of VOC per liter or less. [District Rule 4623]
30. Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rule 4623]
31. During sludge removal from a vessel containing an organic liquid with a TVP of 1.5 psia or greater, the operator shall control emissions from the sludge receiving vessel by operating an APCO-approved vapor control device that reduces emissions of organic vapors by at least 95%. [District Rule 4623]
32. Permittee shall only transport removed sludge from a tank containing an organic liquid with a TVP of 1.5 psia or greater, in closed liquid leak-free containers. [District Rule 4623]
33. Permittee shall store removed sludge, until final disposal, in vapor leak-free containers, or in tanks complying with the vapor control requirements of District Rule 4623. Sludge that is to be used to manufacture roadmix, as defined in District Rule 2020, is not required to be stored in this manner. Roadmix manufacturing operations exempt pursuant to District Rule 2020 shall maintain documentation of their compliance with Rule 2020, and shall readily make said documentation available for District inspection upon request. [District Rules 2020 and 4623]
34. All records of required monitoring data and support information shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 2201 and 4623]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-8422-2-0

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: LIGHT OIL CENTRAL STATIONARY SOURCE
KERN COUNTY, CA

SECTION: NW 4 TOWNSHIP: 27S RANGE: 22E

EQUIPMENT DESCRIPTION:
400 BBL CRUDE OIL STORAGE TANK SERVED BY VAPOR CONTROL SYSTEM LISTED ON S-8422-1

CONDITIONS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rules 2201 and 4623]
3. 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 Rules 2201 and 4623]
4. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rules 2201 and 4623]
5. VOC fugitive emissions from the components in gas/light oil service on tank and from tank to vapor control, system trunk line shall not exceed 0.3 lb/day. [District Rule 2201]
6. Permittee shall maintain accurate component count for tank according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2c (Feb 1999), Screening Value Range emission factors < 10,000 ppmv. Permittee shall update such records when new components are approved and installed. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services
S-8422-2-0: Jan 18 2014 11:25AM - EDC/ELR : Joint Inspection NOT Required

7. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rules 2201 and 4623]
8. Any component found to be leaking by the operator on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rules 2201 and 4623]
9. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2201 and 4623]
10. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rules 2201 and 4623]
11. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rules 2201 and 4623]
12. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rules 2201 and 4623]
13. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 3 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 3 shall constitute a violation of this rule. [District Rules 2201 and 4623]
14. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rules 2201 and 4623]
15. The permittee shall keep accurate records of the dates of inspection and monitoring and the components inspected and monitored. [District Rule 2201]
16. Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date and time of leak detection, and method of detection; 3) Date and time of leak repair, and emission level of recheck after leak is repaired; 4) Method used to minimize the leak to lowest possible level within 8 hours after detection. [District Rules 2201 and 4623]
17. Permittee shall notify the APCO in writing at least three (3) days prior to performing tank degassing and interior tank cleaning activities. Written notification shall include the following: 1) the Permit to Operate number and physical location of the tank being degassed, 2) the date and time that tank degassing and cleaning activities will begin, 3) the degassing method, as allowed in this permit, to be used, 4) the method to be used to clean the tank, including any solvents to be used, and 5) the method to be used to dispose of any removed sludge, including methods that will be used to control emissions from the receiving vessel and emissions during transport. [District Rule 4623]

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CONDITIONS CONTINUE ON NEXT PAGE

18. This tank shall be degassed before commencing interior cleaning by one of the following methods (1) exhausting VOCs contained in the tank vapor space to an APCO-approved vapor recovery system until the organic vapor concentration is 5,000 ppmv or less, or is 10 percent or less of the lower explosion limit (LEL), whichever is less; or (2) displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable liquid until 90 percent or more of the maximum operating level of the tank is filled. Suitable liquids are organic liquids having a TVP of less than 0.5 psia, water, clean produced water, or produced water derived from crude oil having a TVP less than 0.5 psia; or (3) displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable gas. Degassing shall continue until the operator has achieved a vapor displacement equivalent to at least 2.3 times the tank capacity. Suitable gases are air, nitrogen, carbon dioxide, or natural gas containing less than 10 percent VOC by weight. [District Rule 4623]
19. During tank degassing, the operator shall discharge or displace organic vapors contained in the tank vapor space to an APCO-approved vapor recovery system. [District Rule 4623]
20. To facilitate connection to an external APCO-approved recovery system, a suitable tank fitting, such as a manway, may be temporarily removed for a period of time not to exceed 1 hour. [District Rule 4623]
21. This tank shall be in compliance with the applicable requirements of District Rule 4623 at all times during draining, degassing, and refilling the tank with an organic liquid. [District Rule 4623]
22. After a tank has been degassed pursuant to the requirements of this permit, vapor control requirements are not applicable until an organic liquid is placed, held, or stored in this tank. [District Rule 4623]
23. While performing tank cleaning activities, operators may only use the following cleaning agents: water, diesel, solvents with an initial boiling point of greater than 302 degrees F, solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams of VOC per liter or less. [District Rule 4623]
24. Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rule 4623]
25. During sludge removal from a vessel containing an organic liquid with a TVP of 1.5 psia or greater, the operator shall control emissions from the sludge receiving vessel by operating an APCO-approved vapor control device that reduces emissions of organic vapors by at least 95%. [District Rule 4623]
26. Permittee shall only transport removed sludge from a tank containing an organic liquid with a TVP of 1.5 psia or greater, in closed liquid leak-free containers. [District Rule 4623]
27. Permittee shall store removed sludge, until final disposal, in vapor leak-free containers, or in tanks complying with the vapor control requirements of District Rule 4623. Sludge that is to be used to manufacture roadmix, as defined in District Rule 2020, is not required to be stored in this manner. Roadmix manufacturing operations exempt pursuant to District Rule 2020 shall maintain documentation of their compliance with Rule 2020, and shall readily make said documentation available for District inspection upon request. [District Rules 2020 and 4623]
28. All records of required monitoring data and support information shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 2201 and 4623]
29. ATC shall be implemented concurrently with or subsequent to ATC S-8422-1-0. [District Rule 2201]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-8422-3-0

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: LIGHT OIL CENTRAL STATIONARY SOURCE
KERN COUNTY, CA

SECTION: NW 4 TOWNSHIP: 27S RANGE: 22E

EQUIPMENT DESCRIPTION:
400 BBL CRUDE OIL STORAGE TANK SERVED BY VAPOR CONTROL SYSTEM LISTED ON S-8422-1

CONDITIONS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rules 2201 and 4623]
3. 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 Rules 2201 and 4623]
4. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rules 2201 and 4623]
5. VOC fugitive emissions from the components in gas/light oil service on tank and from tank to vapor control, system trunk line shall not exceed 0.3 lb/day. [District Rule 2201]
6. Permittee shall maintain accurate component count for tank according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2c (Feb 1999), Screening Value Range emission factors < 10,000 ppmv. Permittee shall update such records when new components are approved and installed. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services
S-8422-3-0: Jan 18 2014 11:20AM - EDG:DLR : Joint Inspection NOT Required

7. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rules 2201 and 4623]
8. Any component found to be leaking by the operator on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rules 2201 and 4623]
9. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2201 and 4623]
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11. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rules 2201 and 4623]
12. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rules 2201 and 4623]
13. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 3 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 3 shall constitute a violation of this rule. [District Rules 2201 and 4623]
14. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rules 2201 and 4623]
15. The permittee shall keep accurate records of the dates of inspection and monitoring and the components inspected and monitored. [District Rule 2201]
16. Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date and time of leak detection, and method of detection; 3) Date and time of leak repair, and emission level of recheck after leak is repaired; 4) Method used to minimize the leak to lowest possible level within 8 hours after detection. [District Rules 2201 and 4623]
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CONDITIONS CONTINUE ON NEXT PAGE

18. This tank shall be degassed before commencing interior cleaning by one of the following methods (1) exhausting VOCs contained in the tank vapor space to an APCO-approved vapor recovery system until the organic vapor concentration is 5,000 ppmv or less, or is 10 percent or less of the lower explosion limit (LEL), whichever is less; or (2) displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable liquid until 90 percent or more of the maximum operating level of the tank is filled. Suitable liquids are organic liquids having a TVP of less than 0.5 psia, water, clean produced water, or produced water derived from crude oil having a TVP less than 0.5 psia; or (3) displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable gas. Degassing shall continue until the operator has achieved a vapor displacement equivalent to at least 2.3 times the tank capacity. Suitable gases are air, nitrogen, carbon dioxide, or natural gas containing less than 10 percent VOC by weight. [District Rule 4623]
19. During tank degassing, the operator shall discharge or displace organic vapors contained in the tank vapor space to an APCO-approved vapor recovery system. [District Rule 4623]
20. To facilitate connection to an external APCO-approved recovery system, a suitable tank fitting, such as a manway, may be temporarily removed for a period of time not to exceed 1 hour. [District Rule 4623]
21. This tank shall be in compliance with the applicable requirements of District Rule 4623 at all times during draining, degassing, and refilling the tank with an organic liquid. [District Rule 4623]
22. After a tank has been degassed pursuant to the requirements of this permit, vapor control requirements are not applicable until an organic liquid is placed, held, or stored in this tank. [District Rule 4623]
23. While performing tank cleaning activities, operators may only use the following cleaning agents: water, diesel, solvents with an initial boiling point of greater than 302 degrees F, solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams of VOC per liter or less. [District Rule 4623]
24. Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rule 4623]
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26. Permittee shall only transport removed sludge from a tank containing an organic liquid with a TVP of 1.5 psia or greater, in closed liquid leak-free containers. [District Rule 4623]
27. Permittee shall store removed sludge, until final disposal, in vapor leak-free containers, or in tanks complying with the vapor control requirements of District Rule 4623. Sludge that is to be used to manufacture roadmix, as defined in District Rule 2020, is not required to be stored in this manner. Roadmix manufacturing operations exempt pursuant to District Rule 2020 shall maintain documentation of their compliance with Rule 2020, and shall readily make said documentation available for District inspection upon request. [District Rules 2020 and 4623]
28. All records of required monitoring data and support information shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 2201 and 4623]
29. ATC shall be implemented concurrently with or subsequent to ATC S-8422-1-0. [District Rule 2201]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-8422-4-0

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: LIGHT OIL CENTRAL STATIONARY SOURCE
KERN COUNTY, CA

SECTION: NW 4 TOWNSHIP: 27S RANGE: 22E

EQUIPMENT DESCRIPTION:
400 BBL CRUDE OIL STORAGE TANK SERVED BY VAPOR CONTROL SYSTEM LISTED ON S-8422-1

CONDITIONS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rules 2201 and 4623]
3. 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 Rules 2201 and 4623]
4. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rules 2201 and 4623]
5. VOC fugitive emissions from the components in gas/light oil service on tank and from tank to vapor control, system trunk line shall not exceed 0.3 lb/day. [District Rule 2201]
6. Permittee shall maintain accurate component count for tank according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2c (Feb 1999), Screening Value Range emission factors < 10,000 ppmv. Permittee shall update such records when new components are approved and installed. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services

S-8422-4-0: Jan 18 2014 11:20AM - EDC22-HLR : Joint inspection NOT Required

7. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rules 2201 and 4623]
8. Any component found to be leaking by the operator on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rules 2201 and 4623]
9. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2201 and 4623]
10. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rules 2201 and 4623]
11. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rules 2201 and 4623]
12. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rules 2201 and 4623]
13. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 3 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 3 shall constitute a violation of this rule. [District Rules 2201 and 4623]
14. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rules 2201 and 4623]
15. The permittee shall keep accurate records of the dates of inspection and monitoring and the components inspected and monitored. [District Rule 2201]
16. Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date and time of leak detection, and method of detection; 3) Date and time of leak repair, and emission level of recheck after leak is repaired; 4) Method used to minimize the leak to lowest possible level within 8 hours after detection. [District Rules 2201 and 4623]
17. Permittee shall notify the APCO in writing at least three (3) days prior to performing tank degassing and interior tank cleaning activities. Written notification shall include the following: 1) the Permit to Operate number and physical location of the tank being degassed, 2) the date and time that tank degassing and cleaning activities will begin, 3) the degassing method, as allowed in this permit, to be used, 4) the method to be used to clean the tank, including any solvents to be used, and 5) the method to be used to dispose of any removed sludge, including methods that will be used to control emissions from the receiving vessel and emissions during transport. [District Rule 4623]

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CONDITIONS CONTINUE ON NEXT PAGE

18. This tank shall be degassed before commencing interior cleaning by one of the following methods (1) exhausting VOCs contained in the tank vapor space to an APCO-approved vapor recovery system until the organic vapor concentration is 5,000 ppmv or less; or is 10 percent or less of the lower explosion limit (LEL), whichever is less; or (2) displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable liquid until 90 percent or more of the maximum operating level of the tank is filled. Suitable liquids are organic liquids having a TVP of less than 0.5 psia, water, clean produced water, or produced water derived from crude oil having a TVP less than 0.5 psia; or (3) displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable gas. Degassing shall continue until the operator has achieved a vapor displacement equivalent to at least 2.3 times the tank capacity. Suitable gases are air, nitrogen, carbon dioxide, or natural gas containing less than 10 percent VOC by weight. [District Rule 4623]
19. During tank degassing, the operator shall discharge or displace organic vapors contained in the tank vapor space to an APCO-approved vapor recovery system. [District Rule 4623]
20. To facilitate connection to an external APCO-approved recovery system, a suitable tank fitting, such as a manway, may be temporarily removed for a period of time not to exceed 1 hour. [District Rule 4623]
21. This tank shall be in compliance with the applicable requirements of District Rule 4623 at all times during draining, degassing, and refilling the tank with an organic liquid. [District Rule 4623]
22. After a tank has been degassed pursuant to the requirements of this permit, vapor control requirements are not applicable until an organic liquid is placed, held, or stored in this tank. [District Rule 4623]
23. While performing tank cleaning activities, operators may only use the following cleaning agents: water, diesel, solvents with an initial boiling point of greater than 302 degrees F, solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams of VOC per liter or less. [District Rule 4623]
24. Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rule 4623]
25. During sludge removal from a vessel containing an organic liquid with a TVP of 1.5 psia or greater, the operator shall control emissions from the sludge receiving vessel by operating an APCO-approved vapor control device that reduces emissions of organic vapors by at least 95%. [District Rule 4623]
26. Permittee shall only transport removed sludge from a tank containing an organic liquid with a TVP of 1.5 psia or greater, in closed liquid leak-free containers. [District Rule 4623]
27. Permittee shall store removed sludge, until final disposal, in vapor leak-free containers, or in tanks complying with the vapor control requirements of District Rule 4623. Sludge that is to be used to manufacture roadmix, as defined in District Rule 2020, is not required to be stored in this manner. Roadmix manufacturing operations exempt pursuant to District Rule 2020 shall maintain documentation of their compliance with Rule 2020, and shall readily make said documentation available for District inspection upon request. [District Rules 2020 and 4623]
28. All records of required monitoring data and support information shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 2201 and 4623]
29. ATC shall be implemented concurrently with or subsequent to ATC S-8422-1-0. [District Rule 2201]

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**San Joaquin Valley
Air Pollution Control District**

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-8422-5-0

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: LIGHT OIL CENTRAL STATIONARY SOURCE
KERN COUNTY, CA

SECTION: NW 4 **TOWNSHIP:** 27S **RANGE:** 22E

EQUIPMENT DESCRIPTION:
400 BBL CRUDE OIL STORAGE TANK SERVED BY VAPOR CONTROL SYSTEM LISTED ON S-8422-1

CONDITIONS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rules 2201 and 4623]
3. 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 Rules 2201 and 4623]
4. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rules 2201 and 4623]
5. VOC fugitive emissions from the components in gas/light oil service on tank and from tank to vapor control, system trunk line shall not exceed 0.3 lb/day. [District Rule 2201]
6. Permittee shall maintain accurate component count for tank according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2c (Feb 1999), Screening Value Range emission factors < 10,000 ppmv. Permittee shall update such records when new components are approved and installed. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services
S-8422-5-0: Jan 18 2014 11:20AM - EDG:ELR : Job Inspection NOT Required

7. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rules 2201 and 4623]
8. Any component found to be leaking by the operator on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rules 2201 and 4623]
9. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2201 and 4623]
10. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rules 2201 and 4623]
11. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rules 2201 and 4623]
12. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rules 2201 and 4623]
13. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 3 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 3 shall constitute a violation of this rule. [District Rules 2201 and 4623]
14. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rules 2201 and 4623]
15. The permittee shall keep accurate records of the dates of inspection and monitoring and the components inspected and monitored. [District Rule 2201]
16. Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date and time of leak detection, and method of detection; 3) Date and time of leak repair, and emission level of recheck after leak is repaired; 4) Method used to minimize the leak to lowest possible level within 8 hours after detection. [District Rules 2201 and 4623]
17. Permittee shall notify the APCO in writing at least three (3) days prior to performing tank degassing and interior tank cleaning activities. Written notification shall include the following: 1) the Permit to Operate number and physical location of the tank being degassed, 2) the date and time that tank degassing and cleaning activities will begin, 3) the degassing method, as allowed in this permit, to be used, 4) the method to be used to clean the tank, including any solvents to be used, and 5) the method to be used to dispose of any removed sludge, including methods that will be used to control emissions from the receiving vessel and emissions during transport. [District Rule 4623]

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CONDITIONS CONTINUE ON NEXT PAGE

18. This tank shall be degassed before commencing interior cleaning by one of the following methods (1) exhausting VOCs contained in the tank vapor space to an APCO-approved vapor recovery system until the organic vapor concentration is 5,000 ppmv or less, or is 10 percent or less of the lower explosion limit (LEL), whichever is less; or (2) displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable liquid until 90 percent or more of the maximum operating level of the tank is filled. Suitable liquids are organic liquids having a TVP of less than 0.5 psia, water, clean produced water, or produced water derived from crude oil having a TVP less than 0.5 psia; or (3) displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable gas. Degassing shall continue until the operator has achieved a vapor displacement equivalent to at least 2.3 times the tank capacity. Suitable gases are air, nitrogen, carbon dioxide, or natural gas containing less than 10 percent VOC by weight. [District Rule 4623]
19. During tank degassing, the operator shall discharge or displace organic vapors contained in the tank vapor space to an APCO-approved vapor recovery system. [District Rule 4623]
20. To facilitate connection to an external APCO-approved recovery system, a suitable tank fitting, such as a manway, may be temporarily removed for a period of time not to exceed 1 hour. [District Rule 4623]
21. This tank shall be in compliance with the applicable requirements of District Rule 4623 at all times during draining, degassing, and refilling the tank with an organic liquid. [District Rule 4623]
22. After a tank has been degassed pursuant to the requirements of this permit, vapor control requirements are not applicable until an organic liquid is placed, held, or stored in this tank. [District Rule 4623]
23. While performing tank cleaning activities, operators may only use the following cleaning agents: water, diesel, solvents with an initial boiling point of greater than 302 degrees F, solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams of VOC per liter or less. [District Rule 4623]
24. Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rule 4623]
25. During sludge removal from a vessel containing an organic liquid with a TVP or 1.5 psia or greater, the operator shall control emissions from the sludge receiving vessel by operating an APCO-approved vapor control device that reduces emissions of organic vapors by at least 95%. [District Rule 4623]
26. Permittee shall only transport removed sludge from a tank containing an organic liquid with a TVP of 1.5 psia or greater, in closed liquid leak-free containers. [District Rule 4623]
27. Permittee shall store removed sludge, until final disposal, in vapor leak-free containers, or in tanks complying with the vapor control requirements of District Rule 4623. Sludge that is to be used to manufacture roadmix, as defined in District Rule 2020, is not required to be stored in this manner. Roadmix manufacturing operations exempt pursuant to District Rule 2020 shall maintain documentation of their compliance with Rule 2020, and shall readily make said documentation available for District inspection upon request. [District Rules 2020 and 4623]
28. All records of required monitoring data and support information shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 2201 and 4623]
29. ATC shall be implemented concurrently with or subsequent to ATC S-8422-1-0. [District Rule 2201]

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-8422-6-0

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: LIGHT OIL CENTRAL STATIONARY SOURCE
KERN COUNTY, CA

SECTION: NW 4 TOWNSHIP: 27S RANGE: 22E

EQUIPMENT DESCRIPTION:
400 BBL CRUDE OIL STORAGE TANK SERVED BY VAPOR CONTROL SYSTEM LISTED ON S-8422-1

CONDITIONS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rules 2201 and 4623]
3. 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 Rules 2201 and 4623]
4. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rules 2201 and 4623]
5. VOC fugitive emissions from the components in gas/light oil service on tank and from tank to vapor control, system trunk line shall not exceed 0.3 lb/day. [District Rule 2201]
6. Permittee shall maintain accurate component count for tank according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2c (Feb 1999), Screening Value Range emission factors < 10,000 ppmv. Permittee shall update such records when new components are approved and installed. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Sayed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services
6-8422-6-0: Jan 18 2014 11:20AM - EDC/ELR : Joint Inspection NOT Required

Southam Regional Office • 34946 Flyover Court • Bakersfield, CA 93308 • (661) 392-5500 • Fax (661) 392-5585

7. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rules 2201 and 4623]
8. Any component found to be leaking by the operator on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rules 2201 and 4623]
9. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2201 and 4623]
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CONDITIONS CONTINUE ON NEXT PAGE

18. This tank shall be degassed before commencing interior cleaning by one of the following methods (1) exhausting VOCs contained in the tank vapor space to an APCO-approved vapor recovery system until the organic vapor concentration is 5,000 ppmv or less, or is 10 percent or less of the lower explosion limit (LEL), whichever is less; or (2) displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable liquid until 90 percent or more of the maximum operating level of the tank is filled. Suitable liquids are organic liquids having a TVP of less than 0.5 psia, water, clean produced water, or produced water derived from crude oil having a TVP less than 0.5 psia; or (3) displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable gas. Degassing shall continue until the operator has achieved a vapor displacement equivalent to at least 2.3 times the tank capacity. Suitable gases are air, nitrogen, carbon dioxide, or natural gas containing less than 10 percent VOC by weight. [District Rule 4623]
19. During tank degassing, the operator shall discharge or displace organic vapors contained in the tank vapor space to an APCO-approved vapor recovery system. [District Rule 4623]
20. To facilitate connection to an external APCO-approved recovery system, a suitable tank fitting, such as a manway, may be temporarily removed for a period of time not to exceed 1 hour. [District Rule 4623]
21. This tank shall be in compliance with the applicable requirements of District Rule 4623 at all times during draining, degassing, and refilling the tank with an organic liquid. [District Rule 4623]
22. After a tank has been degassed pursuant to the requirements of this permit, vapor control requirements are not applicable until an organic liquid is placed, held, or stored in this tank. [District Rule 4623]
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28. All records of required monitoring data and support information shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 2201 and 4623]
29. ATC shall be implemented concurrently with or subsequent to ATC S-8422-1-0. [District Rule 2201]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-8422-7-0

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: LIGHT OIL CENTRAL STATIONARY SOURCE
KERN COUNTY, CA

SECTION: NW 4 TOWNSHIP: 27S RANGE: 22E

EQUIPMENT DESCRIPTION:
400 BBL CRUDE OIL STORAGE TANK SERVED BY VAPOR CONTROL SYSTEM LISTED ON S-8422-1

ISSUANCE DATE: DRAFT

DRAFT

CONDITIONS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rules 2201 and 4623]
3. 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 Rules 2201 and 4623]
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5. VOC fugitive emissions from the components in gas/light oil service on tank and from tank to vapor control, system trunk line shall not exceed 0.3 lb/day. [District Rule 2201]
6. Permittee shall maintain accurate component count for tank according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2c (Feb 1999), Screening Value Range emission factors < 10,000 ppmv. Permittee shall update such records when new components are approved and installed. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director APCO

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DAVID WARNER, Director of Permit Services
S-8422-7-0 : Jan 18 2014 11:30AM - CDO/HLR : Joint Inspection NOT Required

Southern Regional Office • 34946 Flyover Court • Bakersfield, CA 93308 • (861) 392-5500 • Fax (861) 392-5585

7. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rules 2201 and 4623]
8. Any component found to be leaking by the operator on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rules 2201 and 4623]
9. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2201 and 4623]
10. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rules 2201 and 4623]
11. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rules 2201 and 4623]
12. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rules 2201 and 4623]
13. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 3 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 3 shall constitute a violation of this rule. [District Rules 2201 and 4623]
14. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rules 2201 and 4623]
15. The permittee shall keep accurate records of the dates of inspection and monitoring and the components inspected and monitored. [District Rule 2201]
16. Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date and time of leak detection, and method of detection; 3) Date and time of leak repair, and emission level of recheck after leak is repaired; 4) Method used to minimize the leak to lowest possible level within 8 hours after detection. [District Rules 2201 and 4623]
17. Permittee shall notify the APCO in writing at least three (3) days prior to performing tank degassing and interior tank cleaning activities. Written notification shall include the following: 1) the Permit to Operate number and physical location of the tank being degassed, 2) the date and time that tank degassing and cleaning activities will begin, 3) the degassing method, as allowed in this permit, to be used, 4) the method to be used to clean the tank, including any solvents to be used, and 5) the method to be used to dispose of any removed sludge, including methods that will be used to control emissions from the receiving vessel and emissions during transport. [District Rule 4623]

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CONDITIONS CONTINUE ON NEXT PAGE

18. This tank shall be degassed before commencing interior cleaning by one of the following methods (1) exhausting VOCs contained in the tank vapor space to an APCO-approved vapor recovery system until the organic vapor concentration is 5,000 ppmv or less, or is 10 percent or less of the lower explosion limit (LEL), whichever is less; or (2) displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable liquid until 90 percent or more of the maximum operating level of the tank is filled. Suitable liquids are organic liquids having a TVP of less than 0.5 psia, water, clean produced water, or produced water derived from crude oil having a TVP less than 0.5 psia; or (3) displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable gas. Degassing shall continue until the operator has achieved a vapor displacement equivalent to at least 2.3 times the tank capacity. Suitable gases are air, nitrogen, carbon dioxide, or natural gas containing less than 10 percent VOC by weight. [District Rule 4623]
19. During tank degassing, the operator shall discharge or displace organic vapors contained in the tank vapor space to an APCO-approved vapor recovery system. [District Rule 4623]
20. To facilitate connection to an external APCO-approved recovery system, a suitable tank fitting, such as a manway, may be temporarily removed for a period of time not to exceed 1 hour. [District Rule 4623]
21. This tank shall be in compliance with the applicable requirements of District Rule 4623 at all times during draining, degassing, and refilling the tank with an organic liquid. [District Rule 4623]
22. After a tank has been degassed pursuant to the requirements of this permit, vapor control requirements are not applicable until an organic liquid is placed, held, or stored in this tank. [District Rule 4623]
23. While performing tank cleaning activities, operators may only use the following cleaning agents: water, diesel, solvents with an initial boiling point of greater than 302 degrees F, solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams of VOC per liter or less. [District Rule 4623]
24. Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rule 4623]
25. During sludge removal from a vessel containing an organic liquid with a TVP of 1.5 psia or greater, the operator shall control emissions from the sludge receiving vessel by operating an APCO-approved vapor control device that reduces emissions of organic vapors by at least 95%. [District Rule 4623]
26. Permittee shall only transport removed sludge from a tank containing an organic liquid with a TVP of 1.5 psia or greater, in closed liquid leak-free containers. [District Rule 4623]
27. Permittee shall store removed sludge, until final disposal, in vapor leak-free containers, or in tanks complying with the vapor control requirements of District Rule 4623. Sludge that is to be used to manufacture roadmix, as defined in District Rule 2020, is not required to be stored in this manner. Roadmix manufacturing operations exempt pursuant to District Rule 2020 shall maintain documentation of their compliance with Rule 2020, and shall readily make said documentation available for District inspection upon request. [District Rules 2020 and 4623]
28. All records of required monitoring data and support information shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 2201 and 4623]
29. ATC shall be implemented concurrently with or subsequent to ATC S-8422-1-0. [District Rule 2201]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: S-8422-8-0

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: LIGHT OIL CENTRAL STATIONARY SOURCE
KERN COUNTY, CA

SECTION: NW 4 **TOWNSHIP:** 27S **RANGE:** 22E

EQUIPMENT DESCRIPTION:
400 BBL CRUDE OIL STORAGE TANK SERVED BY VAPOR CONTROL SYSTEM LISTED ON S-8422-1

CONDITIONS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rules 2201 and 4623]
3. 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 Rules 2201 and 4623]
4. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rules 2201 and 4623]
5. VOC fugitive emissions from the components in gas/light oil service on tank and from tank to vapor control, system trunk line shall not exceed 0.3 lb/day. [District Rule 2201]
6. Permittee shall maintain accurate component count for tank according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2c (Feb 1999), Screening Value Range emission factors < 10,000 ppmv. Permittee shall update such records when new components are approved and installed. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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

Seyed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services
S-8422-8-0: Jan 18 2014 11:20AM - EDD:ELR : Joint Inspection NOT Required

7. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rules 2201 and 4623]
8. Any component found to be leaking by the operator on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rules 2201 and 4623]
9. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2201 and 4623]
10. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rules 2201 and 4623]
11. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rules 2201 and 4623]
12. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rules 2201 and 4623]
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CONDITIONS CONTINUE ON NEXT PAGE

18. This tank shall be degassed before commencing interior cleaning by one of the following methods (1) exhausting VOCs contained in the tank vapor space to an APCO-approved vapor recovery system until the organic vapor concentration is 5,000 ppmv or less, or is 10 percent or less of the lower explosion limit (LEL), whichever is less; or (2) displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable liquid until 90 percent or more of the maximum operating level of the tank is filled. Suitable liquids are organic liquids having a TVP of less than 0.5 psia, water, clean produced water, or produced water derived from crude oil having a TVP less than 0.5 psia; or (3) displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable gas. Degassing shall continue until the operator has achieved a vapor displacement equivalent to at least 2.3 times the tank capacity. Suitable gases are air, nitrogen, carbon dioxide, or natural gas containing less than 10 percent VOC by weight. [District Rule 4623]
19. During tank degassing, the operator shall discharge or displace organic vapors contained in the tank vapor space to an APCO-approved vapor recovery system. [District Rule 4623]
20. To facilitate connection to an external APCO-approved recovery system, a suitable tank fitting, such as a manway, may be temporarily removed for a period of time not to exceed 1 hour. [District Rule 4623]
21. This tank shall be in compliance with the applicable requirements of District Rule 4623 at all times during draining, degassing, and refilling the tank with an organic liquid. [District Rule 4623]
22. After a tank has been degassed pursuant to the requirements of this permit, vapor control requirements are not applicable until an organic liquid is placed, held, or stored in this tank. [District Rule 4623]
23. While performing tank cleaning activities, operators may only use the following cleaning agents: water, diesel, solvents with an initial boiling point of greater than 302 degrees F, solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams of VOC per liter or less. [District Rule 4623]
24. Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rule 4623]
25. During sludge removal from a vessel containing an organic liquid with a TVP or 1.5 psia or greater, the operator shall control emissions from the sludge receiving vessel by operating an APCO-approved vapor control device that reduces emissions of organic vapors by at least 95%. [District Rule 4623]
26. Permittee shall only transport removed sludge from a tank containing an organic liquid with a TVP of 1.5 psia or greater, in closed liquid leak-free containers. [District Rule 4623]
27. Permittee shall store removed sludge, until final disposal, in vapor leak-free containers, or in tanks complying with the vapor control requirements of District Rule 4623. Sludge that is to be used to manufacture roadmix, as defined in District Rule 2020, is not required to be stored in this manner. Roadmix manufacturing operations exempt pursuant to District Rule 2020 shall maintain documentation of their compliance with Rule 2020, and shall readily make said documentation available for District inspection upon request. [District Rules 2020 and 4623]
28. All records of required monitoring data and support information shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 2201 and 4623]
29. ATC shall be implemented concurrently with or subsequent to ATC S-8422-1-0. [District Rule 2201]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: S-8422-9-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: LIGHT OIL CENTRAL STATIONARY SOURCE
KERN COUNTY, CA

SECTION: NW 4 TOWNSHIP: 27S RANGE: 22E

EQUIPMENT DESCRIPTION:
400 BBL CRUDE OIL STORAGE TANK SERVED BY VAPOR CONTROL SYSTEM LISTED ON S-8422-1

CONDITIONS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. All piping, valves, and fittings shall be constructed and maintained in a leak-free condition. [District Rules 2201 and 4623]
3. 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 Rules 2201 and 4623]
4. Any tank gauging or sampling device on a tank vented to the vapor recovery system shall be equipped with a leak-free cover which shall be closed at all times except during gauging or sampling. [District Rules 2201 and 4623]
5. VOC fugitive emissions from the components in gas/light oil service on tank and from tank to vapor control, system trunk line shall not exceed 0.3 lb/day. [District Rule 2201]
6. Permittee shall maintain accurate component count for tank according to CAPCOA's "California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities," Table IV-2c (Feb 1999), Screening Value Range emission factors < 10,000 ppmv. Permittee shall update such records when new components are approved and installed. [District Rule 2201]

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services
S-8422-9-0: Jan 19 2014 11:25AM - EDCO:DLR : Jact Inspections NOT Required

7. All piping, fittings, and valves on this tank shall be inspected annually by the facility operator in accordance with EPA Method 21, with the instrument calibrated with methane, to ensure compliance with the leaking provisions of this permit. [District Rules 2201 and 4623]
8. Any component found to be leaking by the operator on two consecutive annual inspections is in violation of the District Rule 4623, even if it is under the voluntary inspection and maintenance program. [District Rules 2201 and 4623]
9. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2201 and 4623]
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CONDITIONS CONTINUE ON NEXT PAGE

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29. ATC shall be implemented concurrently with or subsequent to ATC S-8422-1-0. [District Rule 2201]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-8422-10-0

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11164
BAKERSFIELD, CA 93389-1164

LOCATION: LIGHT OIL CENTRAL STATIONARY SOURCE
KERN COUNTY, CA

SECTION: NW 4 TOWNSHIP: 27S RANGE: 22 E

EQUIPMENT DESCRIPTION:
400 BBL CRUDE OIL STORAGE TANK SERVED BY VAPOR CONTROL SYSTEM LISTED ON S-8422-1

CONDITIONS

1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
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Sayed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services

S-8422-10-0 : Jan 13 2014 11:30AM - EDDG:HLR : Joint Inspection NOT Required

Southern Regional Office • 34946 Flyover Court • Bakersfield, CA 93308 • (661) 392-5500 • Fax (661) 392-5585

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9. Operator shall visually inspect tank shell, hatches, seals, seams, cable seals, valves, flanges, connectors, and any other piping components directly affixed to the tank and within five feet of the tank at least once per year for liquid leaks, and with a portable hydrocarbon detection instrument conducted in accordance with EPA Method 21 for gas leaks. Operator shall also visually or ultrasonically inspect as appropriate, the external shells and roofs of uninsulated tanks for structural integrity annually. [District Rule 2201 and 4623]
10. Upon detection of a liquid leak, defined as a leak rate of greater than or equal to 30 drops per minute, operator shall repair the leak within 8 hours. For leaks with a liquid leak rate of between 3 and 30 drops per minute, the leaking component shall be repaired within 24 hours after detection. [District Rules 2201 and 4623]
11. Upon detection of a gas leak, defined as a VOC concentration of greater than 10,000 ppmv measured in accordance with EPA Method 21, operator shall take one of the following actions: 1) eliminate the leak within 8 hours after detection; or 2) if the leak cannot be eliminated, then minimize the leak to the lowest possible level within 8 hours after detection by using best maintenance practices, and eliminate the leak within 48 hours after minimization. In no event shall the total time to minimize and eliminate a leak exceed 56 hours after detection. [District Rules 2201 and 4623]
12. Components found to be leaking either liquids or gases shall be immediately affixed with a tag showing the component to be leaking. Operator shall maintain records of the liquid or gas leak detection readings, date/time the leak was discovered, and date/time the component was repaired to a leak-free condition. [District Rules 2201 and 4623]
13. Leaking components that have been discovered by the operator that have been immediately tagged and repaired within the timeframes specified in District Rule 4623, Table 3 shall not constitute a violation of this rule. Leaking components as defined by District Rule 4623 discovered by District staff that were not previously identified and/or tagged by the operator, and/or any leaks that were not repaired within the timeframes specified in District Rule 4623, Table 3 shall constitute a violation of this rule. [District Rules 2201 and 4623]
14. If a component type for a given tank is found to leak during an annual inspection, operator shall conduct quarterly inspections of that component type on the tank or tank system for four consecutive quarters. If no components are found to leak after four consecutive quarters, the operator may revert to annual inspections. [District Rules 2201 and 4623]
15. The permittee shall keep accurate records of the dates of inspection and monitoring and the components inspected and monitored. [District Rule 2201]
16. Operator shall maintain an inspection log containing the following 1) Type of component leaking; 2) Date and time of leak detection, and method of detection; 3) Date and time of leak repair, and emission level of recheck after leak is repaired; 4) Method used to minimize the leak to lowest possible level within 8 hours after detection. [District Rules 2201 and 4623]
17. Permittee shall notify the APCO in writing at least three (3) days prior to performing tank degassing and interior tank cleaning activities. Written notification shall include the following: 1) the Permit to Operate number and physical location of the tank being degassed, 2) the date and time that tank degassing and cleaning activities will begin, 3) the degassing method, as allowed in this permit, to be used, 4) the method to be used to clean the tank, including any solvents to be used, and 5) the method to be used to dispose of any removed sludge, including methods that will be used to control emissions from the receiving vessel and emissions during transport. [District Rule 4623]

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CONDITIONS CONTINUE ON NEXT PAGE

18. This tank shall be degassed before commencing interior cleaning by one of the following methods (1) exhausting VOCs contained in the tank vapor space to an APCO-approved vapor recovery system until the organic vapor concentration is 5,000 ppmv or less, or is 10 percent or less of the lower explosion limit (LEL), whichever is less; or (2) displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable liquid until 90 percent or more of the maximum operating level of the tank is filled. Suitable liquids are organic liquids having a TVP of less than 0.5 psia, water, clean produced water, or produced water derived from crude oil having a TVP less than 0.5 psia; or (3) displacing VOCs contained in the tank vapor space to an APCO-approved vapor recovery system by filling the tank with a suitable gas. Degassing shall continue until the operator has achieved a vapor displacement equivalent to at least 2.3 times the tank capacity. Suitable gases are air, nitrogen, carbon dioxide, or natural gas containing less than 10 percent VOC by weight. [District Rule 4623]
19. During tank degassing, the operator shall discharge or displace organic vapors contained in the tank vapor space to an APCO-approved vapor recovery system. [District Rule 4623]
20. To facilitate connection to an external APCO-approved recovery system, a suitable tank fitting, such as a manway, may be temporarily removed for a period of time not to exceed 1 hour. [District Rule 4623]
21. This tank shall be in compliance with the applicable requirements of District Rule 4623 at all times during draining, degassing, and refilling the tank with an organic liquid. [District Rule 4623]
22. After a tank has been degassed pursuant to the requirements of this permit, vapor control requirements are not applicable until an organic liquid is placed, held, or stored in this tank. [District Rule 4623]
23. While performing tank cleaning activities, operators may only use the following cleaning agents: water, diesel, solvents with an initial boiling point of greater than 302 degrees F, solvents with a vapor pressure of less than 0.5 psia, or solvents with 50 grams of VOC per liter or less. [District Rule 4623]
24. Steam cleaning shall only be allowed at locations where wastewater treatment facilities are limited, or during the months of December through March. [District Rule 4623]
25. During sludge removal from a vessel containing an organic liquid with a TVP of 1.5 psia or greater, the operator shall control emissions from the sludge receiving vessel by operating an APCO-approved vapor control device that reduces emissions of organic vapors by at least 95%. [District Rule 4623]
26. Permittee shall only transport removed sludge from a tank containing an organic liquid with a TVP of 1.5 psia or greater, in closed liquid leak-free containers. [District Rule 4623]
27. Permittee shall store removed sludge, until final disposal, in vapor leak-free containers, or in tanks complying with the vapor control requirements of District Rule 4623. Sludge that is to be used to manufacture roadmix, as defined in District Rule 2020, is not required to be stored in this manner. Roadmix manufacturing operations exempt pursuant to District Rule 2020 shall maintain documentation of their compliance with Rule 2020, and shall readily make said documentation available for District inspection upon request. [District Rules 2020 and 4623]
28. All records of required monitoring data and support information shall be maintained and retained on-site for a period of at least 5 years and shall be made available for District inspection upon request. [District Rules 2201 and 4623]
29. ATC shall be implemented concurrently with or subsequent to ATC S-8422-1-0. [District Rule 2201]

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-8422-11-0

LEGAL OWNER OR OPERATOR: AERA ENERGY LLC
MAILING ADDRESS: PO BOX 11184
BAKERSFIELD, CA 93389-1164

LOCATION: LIGHT OIL CENTRAL STATIONARY SOURCE
KERN COUNTY, CA

SECTION: NW 4 **TOWNSHIP:** 27S **RANGE:** 22E

EQUIPMENT DESCRIPTION:
125 MMBTU/HR (MAXIMUM) VAPOR RECOVERY AND PRODUCED GAS COANDA FLARE WITH CONTINUOUS
PROPANE PILOT SERVING TANK VAPOR CONTROL SYSTEM LISTED ON S-8422-1

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. The permittee shall obtain written District approval for the use of any equivalent equipment not specifically approved by this Authority to Construct. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201]
3. The permittee's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2201]
4. Alternate equipment shall be of the same class and category of source as the equipment authorized by the Authority to Construct. [District Rule 2201]
5. No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201]
6. The unit must not be located and operated at an existing facility or operation such that it becomes part of an existing stationary source as defined by District Rule 2201. [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.

Sayed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services
S-8422-11-0: Jan 29 2014 3:26PM - EDD:ELR : Joint inspection NOT Required

7. Flare shall operate in a smokeless manner with visible emissions below Ringelmann 1/4 and 5% opacity. [District Rule 2201]
8. Flare shall be equipped with operational automatic re-ignition provisions. [District Rule 2201]
9. Gas line to flare shall be equipped with operational, volumetric flow rate indicator. [District Rule 2201]
10. Daily and annual amounts of gas flared shall not exceed 3.0 MMscf/day nor 250 MMscf/yr. [District Rule 2201]
11. Visible emissions shall not exhibit Ringelmann 1/4 or greater or equivalent 5% opacity or greater for more than three minutes in any one hour. [District Rule 2201]
12. Sulfur compound concentration of gas flared shall not exceed 100 ppmv. [District Rule 2201]
13. Emission rates shall not exceed any of the following: 0.008 lb-PM10/MMBtu, 0.068 lb-NOx/MMBtu (as NO2), 0.063 lb-VOC/MMBtu, or 0.37 lb-CO/MMBtu. [District Rule 2201]
14. The flare shall be operated according to the manufacturer's specifications, a copy of which shall be maintained on site. [District Rule 2201]
15. Permittee shall document compliance with well gas sulfur compound concentration limit by performing sulfur content analysis of well gas upon startup. [District Rule 2201]
16. The following test methods shall be used for well gas sulfur content: ASTM D3246 or double GC for H2S and mercaptan. [District Rule 1081]
17. Permittee shall maintain daily and annual records of volume of gas flared and annual records of the fuel sulfur content and such records shall be made readily available for District inspection upon request for a minimum of 5 years. [District Rule 2201]

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