



MAR 10 2017

Todd Seely
E & J Gallo Winery
600 Yosemite Blvd
Modesto, CA 95354

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: N-3386
Project Number: N-1162751

Dear Mr. Seely:

Enclosed for your review and comment is the District's analysis of E & J Gallo Winery's application for an Authority to Construct for the modification to increase ethanol content and temperature of the wine stored in the tanks under permits N-3386-470 to '-473, at 600 Yosemite Blvd, Modesto, California.

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

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Jag Kahlon of Permit Services at (209) 557-6452.

Sincerely,



Arnaud Marjollet
Director of Permit Services

AM: jk

Enclosures

cc: Tung Le, CARB (w/ enclosure) via email
cc: Gerardo C. Rios, EPA (w/ enclosure) via email
cc: Christine Ryan, E & J Gallo Winery (w/enclosure) via email

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

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

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

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 facility is located at 600 Yosemite Blvd, Modesto, California. The wine storage tanks under this project are not located within 1,000 feet of any K-12 school. Therefore, public notice under the California Health & Safety Code 42301.6 is not required.

IV. Process Description

The wine tanks are being used to store and supply wine to the wine bottling operation.

V. Equipment Listing

Pre-Project Equipment Description:

N-3386-470-2 through '-473-2: 53,000 GALLON STEEL WINE STORAGE TANK WITH PRESSURE/VACUUM VALVE AND INSULATION

Proposed Modification:

Increase ethanol content of the wine from 14% to 21% and increase wine storage temperature from 40°F to 75°F.

N-3386-470-3 through '-473-3: MODIFICATION OF 53,000 GALLON STEEL WINE STORAGE TANK WITH PRESSURE/VACUUM VALVE AND INSULATION; TO INCREASE ETHANOL CONTENT AND STORAGE TEMPERATURE OF WINE

Post Project Equipment Description:

N-3386-470-3 through '-473-3: 53,000 GALLON STEEL WINE STORAGE TANK WITH PRESSURE/VACUUM VALVE AND INSULATION

VI. Emission Control Technology Evaluation

VOCs (ethanol) are emitted from wine storage tanks as a result of both working losses (which occur when the liquid level in the tank changes) and breathing losses (expansion and contraction effects due to temperature variations). The tanks are equipped with pressure/vacuum valves to reduce release of VOCs by requiring the maximum amount of variation in tank pressure before allowing the tank to vent to the atmosphere or allowing air

admission to the tank. Further, these tanks are insulated that help to minimize VOCs from the breathing losses.

VII. General Calculations

A. Assumptions

- Wine stored in each tank will be maintained at or below 75°F.
- Maximum ethanol content in the wine stored in each tank will be 21% by volume.
- Each tank's maximum throughput would be 5,000,000 gallons per year.
- Other assumptions will be stated as they are made for this project.

B. Emission Factors

1. Pre-Project Emission Factors (EF1)

N-3386-470-2 to'-473-2:

These permits do not list emission factor. The potential daily and annual emissions are available from the previous permitting action.

2. Post-Project Emission Factors (EF2)

N-3386-470-3 to'-473-3:

EPA's Tanks 4.0.d program will be used to determine the potential ethanol and water vapor emissions. These emissions will be adjusted to determine VOC (ethanol) emissions.

C. Calculations

1. Pre-Project Potential to Emit (PE1)

N-3386-470-2 to'-473-2:

Per project N-1111823,

PE1 = 2.9 lb-VOC/day for each tank
= 133 lb-VOC/yr for each tank

2. Post Project Potential to Emit (PE2)

N-3386-470-3 to'-473-3:

EPA's Tanks 4.0.d program is used to determine vapor (ethanol and water mixture) emissions using a custom chemical database for wine 21% vol. alcohol and the maximum wine storage temperature of 75°F. The summary results are as follows (EPA's Tanks 4.0.d reports are included in **Appendix G** of this document).

PE2 = 1,113.47 lb/yr (ethanol and water)

The average vapor molecular weight for wine 21% vol. alcohol is 29.25 lb/lb-mole, and the molecular weight of ethanol and water are 46.02 lb/lb-mole and 18.02 lb/lb-mole respectively. VOCs (ethanol) are determined as follows:

$$AMW = y_a \times 46.02 + (1 - y_a) \times 18.02,$$

Where,

AMW = average molecular weight

y_a = fraction of ethanol

Rearranging the above equation,

$$\begin{aligned} y_a &= (AMW - 18.02)/(46.02 - 18.02) \\ &= (29.25 - 18.02)/(46.02 - 18.02) \\ &= 0.40107 \end{aligned}$$

$$\begin{aligned} PE_2 &= (PE_2 \text{ (ethanol and water)}/AMW) \times y_a \times 46.02 \\ &= (1,113.47/29.25) \times 0.40107 \times 46.02 \\ &= 703 \text{ lb/yr-tank (ethanol)} \end{aligned}$$

There are 4 identical tanks under this project. So, the total VOCs (ethanol) emissions would be:

$$\begin{aligned} PE_2 &= 703 \text{ lb-VOC/yr-tank} \times 4 \text{ tanks} \\ &= 2,812 \text{ lb-VOC/yr} \end{aligned}$$

Month of July information is used to determine the maximum daily emissions. The results from EPA's Tanks 4.0 program for July month are as follows:

$$PE_2 = 747.71 \text{ lb/month (ethanol and water)}$$

$$\begin{aligned} PE_2 &= (PE_2/AMW) \times y_a \times 46.02 \\ &= (747.71/29.25) \times 0.40107 \times 46.02 \\ &= 471.8 \text{ lb/month-tank (ethanol)} \end{aligned}$$

There are 31 days in July; so the daily emissions would be:

$$\begin{aligned} PE_2 &= 471.8/31 \\ &= 15.2 \text{ lb-VOC/day-tank} \end{aligned}$$

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

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

This facility is contiguous with facility N-7478 (E&J Gallo Brandy), is under common ownership, and shares the same two-digit SIC code. Therefore, pursuant to District Rule 2201, facilities N-3386 and N-7478, are a single stationary source.

SSPE1 values are summarized in the following table. SSPE1 values are determined by obtaining information from projects N-1153170, N-1153167, and N-1153671.

SSPE1 (lb/year)					
Category	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE1 N-3386	9,767	804	72,533	51,038	78,096
SSPE1 N-7478	6,603	176	473	5,221	277,085
SSPE1 w/o ERC	16,370	980	73,006	56,259	355,181
ERC N-260-3	0	0	0	783	0
ERC N-849-2	125	0	0	0	0
Total _{ERC}	125	0	0	783	0
SSPE1	16,495	980	73,006	57,042	355,181

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)					
Category	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE1 N-3386	9,767	804	72,533	51,038	80,376*
SSPE1 N-7478	6,603	176	473	5,221	277,085
SSPE1 w/o ERC	16,370	980	73,006	56,259	357,461
ERC N-260-3	0	0	0	783	0
ERC N-849-2	125	0	0	0	0
Total _{ERC}	125	0	0	783	0
SSPE2	16,495	980	73,006	57,042	357,461

*78,096 lb/yr (SSPE1) – 532 lb/yr (PE1 for 4 tanks in this project) + 2,812 lb/yr (PE2 for 4 tanks in this project)

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)						
Category	NO _x	SO _x	PM ₁₀	*PM _{2.5}	CO	VOC
SSPE1	16,370	980	73,006	73,006	56,259	355,181
SSPE2	16,370	980	73,006	73,006	56,259	357,461
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No	Yes

*Note: PM2.5 assumed to be equal to PM10

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

Rule 2410 Major Source Determination:

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

PSD Major Source Determination (tons/year)						
Category	NO ₂	VOC	SO ₂	CO	PM	PM ₁₀
Estimated Facility PE before Project Increase	8.2	177.6	0.5	28.5	36.5	36.5
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source?	No	No	No	No	No	No

As shown above, the facility is not an existing PSD major source for any regulated NSR pollutant expected to be emitted at this facility.

6. Baseline Emissions (BE)

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

Pursuant to District Rule 2201, BE = PE1 for:

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

otherwise,

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

This facility is a Major Source for VOC. Each tank is a clean emission unit as each tank meets the requirements for achieved-in-practice BACT; therefore, BE is equal to PE1 for each tank.

BE = PE1 = 133 lb-VOC/yr-tank

7. SB 288 Major Modification

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

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

SB 288 Major Modification Thresholds			
Pollutant	Project PE2 (lb/year)	Threshold (lb/year)	SB 288 Major Modification Calculation Required?
NO _x	0	50,000	No
SO _x	0	80,000	No
PM ₁₀	0	30,000	No
VOC	2,812	50,000	No

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

8. Federal Major Modification

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

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

Step 1

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

$$\text{Emission Increase} = \text{PAE} - \text{BAE} - \text{UBC}$$

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

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

Federal Major Modification Thresholds for Emission Increases			
Pollutant	Total Emissions Increases (lb/yr)	Thresholds (lb/yr)	Federal Major Modification?
NO _x *	0	0	No
VOC*	2,610	0	Yes
PM ₁₀	0	30,000	No
PM _{2.5}	0	20,000	No
SO _x	0	80,000	No

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

Since there is an increase in VOC emissions, this project constitutes a Federal Major Modification. Federal Offset quantities are calculated below.

Federal Offset Quantities:

The Federal offset quantity is only calculated only for the pollutants for which the project is a Federal Major Modification. The Federal offset quantity is the sum of the annual emission changes for all new and modified emission units in a project calculated as the potential to emit after the modification (PE2) minus the actual emissions (AE) during the

baseline period for each emission unit times the applicable federal offset ratio. There are no special calculations performed for units covered by an SLC.

Pollutant: VOC		Federal Offset Ratio:	1.5
Permit No.	Actual Emissions (lb/year)	Potential Emissions (lb/year)	Emissions Change (lb/yr)
N-3386-470-3	49	703	654
N-3386-471-3	55	703	648
N-3386-472-3	53	703	650
N-3386-473-3	45	703	658
Net Emission Change (NEC) (lb/year):			2,610
Federal Offset Quantity: (NEC * 1.5):			3,915

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

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

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

I. Project Emissions Increase - New Major Source Determination

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

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

PSD Major Source Determination: Potential to Emit (tons/year)						
Category	NO ₂	VOC	SO ₂	CO	PM	PM ₁₀
Total PE from New and Modified Units	0.0	1.4	0.0	0.0	0.0	0.0
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	No	No	No	No	No	No

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

10. Quarterly Net Emissions Change (QNEC)

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

VIII. Compliance Determination

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 AIFE exceeding two pounds per day, and/or
- d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

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

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

The proposed project does not involve any new emissions units. Therefore, BACT for new units with PE > 2 lb/day purposes is not triggered.

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

There are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered.

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

$$\text{AIPE} = \text{PE2} - \text{HAPE}$$

Where,

AIPE = Adjusted Increase in Permitted Emissions, (lb/day)

PE2 = Post-Project Potential to Emit, (lb/day)

HAPE = Historically Adjusted Potential to Emit, (lb/day)

$$\text{HAPE} = \text{PE1} \times (\text{EF2}/\text{EF1})$$

Where,

PE1 = The emissions unit's PE prior to modification or relocation, (lb/day)

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

EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

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

N-3386-470-3 to'-473-3:

For each tank,

PE2 = 15.2 lb-VOC/day, PE1 = 2.9 lb-VOC/day

EF2 = 0.2868 lb-VOC/1,000 gallon¹, EF1 = 0.055 lb-VOC/1,000 gallon²

Since EF2>EF1, EF2/EF1 is set equal to 1.

$$\begin{aligned} \text{AIPE} &= 15.2 \text{ lb-VOC/day} - 2.9 \text{ lb-VOC/day} \\ &= 12.3 \text{ lb-VOC/day} \end{aligned}$$

Since AIPE is greater than 2.0 lb/day for VOC, BACT is triggered for each tank for VOC emissions.

¹15.2 lb-VOC/day ÷ 53,000 gallons/day = 0.2868 lb-VOC/1,000 gallons

²2.9 lb-VOC/day ÷ 53,000 gallons/day = 0.055 lb-VOC/1,000 gallons

d. SB 288/Federal Major Modification

As discussed in Sections VII.C. 8 above, this project does constitute a Federal Major Modification for VOC emissions. Therefore, BACT is triggered for VOC for all emissions units in the project for which there is an emission increase.

2. BACT Guideline

BACT guideline 5.4.13, Wine Storage Tank – Non-Wood Material, is referenced to address the BACT requirements. (See **Appendix C**)

3. Top-Down BACT Analysis

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

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

VOC: Insulation, pressure-vacuum relief valve set within 10% of the maximum allowable working pressure of the tank; gas tight tank operation; and continuous storage temperature not exceeding 75°F, achieved within 60 days of completion of fermentation

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)					
Category	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE2	16,495	980	73,006	57,042	357,461
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	Yes	No	Yes

2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for PM10 and VOC emissions; however, the proposed project will not release any PM10 emissions. Therefore, only VOC offset calculations will be performed in the following section.

Section 4.7.1 of Rule 2201 states that for pollutants with SSPE1 greater than the emission offset threshold levels, emission offsets shall be provided for all increases in Stationary Source emissions, calculated as the differences of post-project Potential to Emit (PE2) and the Baseline Emissions (BE) of all new and modified emissions units, plus all increases in Cargo Carrier emissions. Thus,

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

Where,

PE2 = Post Project Potential to Emit, (lb/year)

BE = Baseline Emissions, (lb/year)

ICCE = Increase in Cargo Carrier Emissions, (lb/year)

DOR = Distance Offset Ratio, determined pursuant to Section 4.8

There is no increase in cargo carrier emissions from this project. Further, per section VII.C.6, BE is equal to PE1 for each emission unit. Thus,

Offsets Required (lb/year) = $(\Sigma[PE2 - PE1]) \times DOR$

Permit #	PE2 (lb-VOC/yr)	PE1 (lb/VOC/yr)	PE2 - PE1 (lb-VOC/yr)
N-3386-470	703	133	570
N-3386-471	703	133	570
N-3386-472	703	133	570
N-3386-473	703	133	570
$\Sigma(PE2 - PE1):$			2,280

Per section 4.8.1 of Rule 2201, for NO_x and VOC offsets for new Major Sources and Federal Major Modifications, the DOR shall be 1.5.

Per section VII.C.8, this project is a Federal Major Modification. Therefore,

Offsets Required (lb/year) = $(2,280 \text{ lb-VOC/yr}) \times 1.5$
 = 3,420 lb-VOC/yr or 855 lb-VOC/qtr

Quarterly offsets required (lb/qtr) = $(3,420 \text{ lb-VOC/year}) \div (4 \text{ quarters/year})$
 = 855 lb-VOC/qtr

E&J Gallo Winery has proposed to use ERC S-4727-1 to offset the VOC increase from this project. This certificate has 48,335 lb-VOC/qtr, significantly more than the required amount of 855 lb-VOC/qtr. Therefore, this certificate is determined to be sufficient to offset the VOC increase from this project.

Proposed Rule 2201 (offset) Conditions:

There are four identical units involved in this project. It is likely the ATCs are going to be implemented simultaneously. However, to allow flexibility to implement them individually, offset amount for each tank is determined ($570 \times 1.5/4 = 213.75$ lb/qtr), and included in the form of the following conditions:

- Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 213 lb, 2nd quarter - 214 lb, 3rd quarter - 214 lb, and 4th quarter - 214 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified in the following condition. [District Rule 2201]
- ERC Certificate Number S-4727-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201]

C. Public Notification

1. Applicability

Public noticing is required for:

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

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

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

As demonstrated in Sections VII.C.8, this project does not constitute a Federal Major Modification; therefore, public noticing for Federal Major Modification purposes is required.

b. PE > 100 lb/day

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

c. Offset Threshold

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

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	16,495	16,495	20,000 lb/year	No
SO _x	980	980	54,750 lb/year	No
PM ₁₀	73,006	73,006	29,200 lb/year	No
CO	57,042	57,042	200,000 lb/year	No
VOC	355,181	357,461	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	16,495	16,495	0	20,000 lb/year	No
SO _x	980	980	0	20,000 lb/year	No
PM ₁₀	73,006	73,006	0	20,000 lb/year	No
CO	57,042	57,042	0	20,000 lb/year	No
VOC	355,181	357,461	2,280	20,000 lb/year	No

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

e. Title V Significant Permit Modification

As shown in the Discussion of Rule 2520 below, this project constitutes a Title V significant modification. Therefore, public noticing for Title V significant modifications is required for this project.

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 ATCs.

D. Daily Emission Limits (DELs)

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

Proposed Rule 2201 (DEL) Conditions:

The following conditions will be included in each permit:

- The ethanol content of wine stored in this tank shall not exceed 21.0 percent by volume. [District Rule 2201]
- The maximum wine storage throughput in this tank shall not exceed 53,000 gallons per day. [District Rule 2201]

E. Compliance Assurance

1. Source Testing

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

2. Monitoring

The applicant is required to monitor the temperature of the wine stored in each tank on daily basis.

3. Recordkeeping

The facility will be required to keep daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred,

along with the records of total gallons of wine contained in a tank and temperature of the stored wine.

These records are required to be retained on-site for a period of at least five years and made available for District inspection upon request.

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

Per Section 4.14 of Rule 2201, ambient air quality analysis (AAQA) shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse the violation of an Ambient Air Quality Standard (AAQS).

This project involves only VOCs (ethanol) for which AAQS does not exist; therefore, AAQA is not performed for this project.

G. Compliance Certification

Section 4.15.2 of this Rule requires the owner of a new Major Source or a source undergoing a Federal Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards.

As discussed in Section VIII above, this project does constitute a Federal Major Modification, therefore this requirement is applicable. The compliance certification from the facility is included in **Appendix F** of this document.

H. Alternate Siting Analysis

The current project occurs at an existing facility. The applicant proposes to modify the permits to increase alcohol content and storage temperature of the wine.

Since the project will not result in any physical changes to existing site, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures on a much greater scale, and would therefore result in a much greater impact.

Rule 2410 Prevention of Significant Deterioration

As shown in Section VII.C.9 above, this project does not result in a new PSD major source or PSD major modification. No further discussion is required.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. A significant permit modification is defined as a "permit amendment that does not qualify as a minor permit modification or administrative amendment." The proposed project is a Significant Modification to the Title V permit since this project triggers a Federal Major Modification under Rule 2201.

As discussed above, the facility has applied for a Certificate of Conformity (COC); therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Therefore, compliance is expected with this rule. The facility shall not implement the changes requested until the final permit is issued.

Rule 4001 New Source Performance Standards (NSPS)

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60. However, no subparts of 40 CFR Part 60 apply to wine storage tank operations.

Rule 4002 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

This rule incorporates NESHAPs from Part 61, Chapter I, Subchapter C, Title 40, CFR and the NESHAPs from Part 63, Chapter I, Subchapter C, Title 40, CFR; and applies to all sources of hazardous air pollution listed in 40 CFR Part 61 or 40 CFR Part 63. However, no subparts of 40 CFR Part 61 or 40 CFR Part 63 apply to wine storage tank operations.

Rule 4101 Visible Emissions

Rule 4101 states that no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). Visible emissions are not expected from the wine handling operations; continued compliance is expected.

Rule 4102 Nuisance

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

Ethanol is not a hazardous air pollutant (HAP) as defined by Section 44321 of the California Health and Safety Code. Therefore, health risk assessment is not necessary.

Compliance is expected.

Rule 4694 Wine Fermentation and Storage Tanks

The purpose of this rule is to reduce emissions of volatile organic compounds (VOC) from the fermentation and bulk storage of wine, or achieve equivalent reductions from alternative emission sources.

This rule is applicable to all facilities with fermentation emissions in excess of 10 tons-VOC/year. The storage tank provisions of this rule apply to all tanks with capacity in excess of 5,000 gallons.

The wine tanks at this facility are used for wine storage and bottling operations. No fermentation takes place at this site, even though some tanks (N-3386-93, and '-425 to '-430), are allowed as storage/fermentation tanks. This facility claims an exemption under Section 4.1 (Section 4.1 states, except for recordkeeping requirements specified in Section 6.4.4, this rule shall not apply to any winery which has a Baseline Fermentation Emissions of less than 10 tons per year) of Rule 4694 (12/15/2005). Therefore, requirements for fermentation tanks are not discussed in the following section.

Section 5.2 places specific restrictions on wine storage tanks with 5,000 gallons or more in capacity when such tanks are not constructed of wood or concrete. Section 5.2.1 requires these tanks to be equipped and operated with a pressure-vacuum relief valve meeting all of the following requirements:

- The pressure-vacuum relief valve shall operate within 10% of the maximum allowable working pressure of the tank,
- The pressure-vacuum relief valve shall operate in accordance with the manufacturer's instructions, and
- The pressure-vacuum relief valve shall be permanently labeled with the operating pressure settings.
- The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21.

The following condition will be included in the permits to ensure compliance with the requirements of Section 5.2.1:

- This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694]

- The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694]

Section 5.2.2 requires that the temperature of the stored wine be maintained at or below 75°F.

The applicant has proposed to maintain the temperature of the stored wine at or below 75°F in the proposed tanks. The following condition will be included in the permits to ensure compliance with the requirements of Section 5.2.2:

- The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. [District Rules 2201 and 4694]

Section 6.4.2 requires that weekly records be kept of wine volume and temperature of wine contained in each storage tank. The following conditions will enforce on-going compliance with this section. The recording frequency is consistent with similar permits issued to this facility.

- Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 2201 and 4694]
- The operator shall record, on a daily basis, the total gallons of wine contained in the tank and temperature of the stored wine. [District Rules 2201 and 4694]

Section 6.4.4 states that the operators claiming exemption pursuant to Section 4.0 shall maintain annual records of the total gallons of red wine and the total gallons of white wine fermented at the winery, and total gallons of wine in storage tanks. Records submitted to the United States Department of Treasury - Alcohol and Tobacco Tax and Trade Bureau for the purpose of tax determination shall be adequate, provided the operator indicates the volumes of red and white wines fermented.

Facility-wide permit N-3386-0-4 (Condition 44) requires the facility to keep the records mentioned in the above section. Therefore, continued compliance is expected.

California Health & Safety Code 42301.6 (School Notice)

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

California Environmental Quality Act (CEQA)

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental

documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

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

Greenhouse Gas (GHG) Significance Determination

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

The project would not result in an increase in project specific greenhouse gas emissions. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

District CEQA Findings

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 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)).

Indemnification Agreement/Letter of Credit Determination

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

The criteria pollutant emissions and toxic air contaminant emissions associated with the proposed project are not significant, and there is minimal potential for public concern for

this particular type of facility/operation. Therefore, an Indemnification Agreement and/or a Letter of Credit will not be required for this project in the absence of expressed public concern.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue ATCs N-3386-470-3 through N-3386-473-3 subject to the permit conditions on the attached draft ATC in **Appendix A**.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
N-3386-470-3 through '473-3 (each)	3020-05D	53,000 gallons	\$203.00

Appendixes

- A: Draft ATCs
- B: Current PTOs
- C: BACT Guideline
- D: BACT Analysis
- E: Quarterly Net Emissions Change
- F: Compliance Certification
- G: Potential to Emit – TANKS 4.0 Reports
- H: Baseline Actual Emissions Calculations – TANKS 4.0 Reports

Appendix A
Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT
ISSUANCE DATE: DRAFT

PERMIT NO: N-3386-470-3

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
MODIFICATION OF 53,000 GALLON STEEL WINE STORAGE TANK WITH PRESSURE/VACUUM VALVE AND INSULATION; TO INCREASE ETHANOL CONTENT AND STORAGE TEMPERATURE OF WINE

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
4. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
5. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of Issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

Arnaud Marjolle, Director of Permit Services

N-3386-470-3 Mod 6 2014 11:35AM - KAH,LOJ Joint Inspection NOT Required

6. The ethanol content of wine stored in this tank shall not exceed 21.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
7. The maximum wine storage throughput in this tank shall not exceed 53,000 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The maximum wine storage throughput in this tank shall not exceed 5,000,000 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
10. The operator shall record, on a daily basis, total gallons of wine contained in the tank and temperature of the stored wine. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
11. The operator shall maintain records of annual throughput of wine. [District Rule 2201] Federally Enforceable Through Title V Permit
12. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit
13. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 213 lb, 2nd quarter - 214 lb, 3rd quarter - 214 lb, and 4th quarter - 214 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified in the following condition. [District Rule 2201] Federally Enforceable Through Title V Permit
14. ERC Certificate Number S-4727-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT
ISSUANCE DATE: DRAFT

PERMIT NO: N-3386-471-3

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
MODIFICATION OF 53,000 GALLON STEEL WINE STORAGE TANK WITH PRESSURE/VACUUM VALVE AND INSULATION: TO INCREASE ETHANOL CONTENT AND STORAGE TEMPERATURE OF WINE

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
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3. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
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5. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

Arnaud Marjolle, Director of Permit Services

N-3386-471-3 : Mar 8 2017 11:30AM - KAILORU : Joint Inspection NOT Required

6. The ethanol content of wine stored in this tank shall not exceed 21.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
7. The maximum wine storage throughput in this tank shall not exceed 53,000 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The maximum wine storage throughput in this tank shall not exceed 5,000,000 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit
9. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
10. The operator shall record, on a daily basis, total gallons of wine contained in the tank and temperature of the stored wine. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
11. The operator shall maintain records of annual throughput of wine. [District Rule 2201] Federally Enforceable Through Title V Permit
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DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-3386-472-3

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:

MODIFICATION OF 53,000 GALLON STEEL WINE STORAGE TANK WITH PRESSURE/VACUUM VALVE AND INSULATION: TO INCREASE ETHANOL CONTENT AND STORAGE TEMPERATURE OF WINE

CONDITIONS

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3. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
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CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director, APCO

Arnaud Marjolle, Director of Permit Services

N-3386-472-3 Met: 8/20/17 11:30AM - KARLONJ - Joint Inspection NOT Required

6. The ethanol content of wine stored in this tank shall not exceed 21.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
7. The maximum wine storage throughput in this tank shall not exceed 53,000 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The maximum wine storage throughput in this tank shall not exceed 5,000,000 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit
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14. ERC Certificate Number S-4727-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT
ISSUANCE DATE: DRAFT

PERMIT NO: N-3386-473-3

LEGAL OWNER OR OPERATOR: E & J GALLO WINERY
MAILING ADDRESS: ATTN: MATT HART
600 YOSEMITE BLVD
MODESTO, CA 95354

LOCATION: 600 YOSEMITE BLVD
MODESTO, CA 95354

EQUIPMENT DESCRIPTION:
MODIFICATION OF 53,000 GALLON STEEL WINE STORAGE TANK WITH PRESSURE/VACUUM VALVE AND INSULATION: TO INCREASE ETHANOL CONTENT AND STORAGE TEMPERATURE OF WINE

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
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4. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
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CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

Arnaud Marjolle, Director of Permit Services

N-3386-473-3 Mar 6 2017 11:36AM - KAW/LOM Joint Inspection NOT Required

6. The ethanol content of wine stored in this tank shall not exceed 21.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
7. The maximum wine storage throughput in this tank shall not exceed 53,000 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
8. The maximum wine storage throughput in this tank shall not exceed 5,000,000 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit
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11. The operator shall maintain records of annual throughput of wine. [District Rule 2201] Federally Enforceable Through Title V Permit
12. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit
13. Prior to operating equipment under this Authority to Construct, permittee shall surrender VOC emission reduction credits for the following quantity of emissions: 1st quarter - 213 lb, 2nd quarter - 214 lb, 3rd quarter - 214 lb, and 4th quarter - 214 lb. These amounts include the applicable offset ratio specified in Rule 2201 Section 4.8 (as amended 2/18/16) for the ERC specified in the following condition. [District Rule 2201] Federally Enforceable Through Title V Permit
14. ERC Certificate Number S-4727-1 (or a certificate split from this certificate) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District, upon which this Authority to Construct shall be reissued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to reissuance of this Authority to Construct. [District Rule 2201] Federally Enforceable Through Title V Permit

DRAFT

Appendix B
Current PTOs

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-3386-470-2

EXPIRATION DATE: 10/31/2019

EQUIPMENT DESCRIPTION:

53,000 GALLON STEEL WINE STORAGE TANK WITH PRESSURE/VACUUM VALVE AND INSULATION

PERMIT UNIT REQUIREMENTS

1. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
2. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
3. The temperature of the wine stored in this tank shall be maintained at or below 40 degrees Fahrenheit. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
4. The ethanol content of wine stored in this tank shall not exceed 14.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
5. The maximum wine storage throughput in this tank shall not exceed 53,000 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The maximum wine storage throughput in this tank shall not exceed 5,000,000 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The operator shall record, on a daily basis, total gallons of wine contained in the tank and temperature of the stored wine. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. The operator shall maintain records of annual throughput of wine. [District Rule 2201] Federally Enforceable Through Title V Permit
10. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-3386-471-2

EXPIRATION DATE: 10/31/2019

EQUIPMENT DESCRIPTION:

53,000 GALLON STEEL WINE STORAGE TANK WITH PRESSURE/VACUUM VALVE AND INSULATION

PERMIT UNIT REQUIREMENTS

1. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
2. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
3. The temperature of the wine stored in this tank shall be maintained at or below 40 degrees Fahrenheit. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
4. The ethanol content of wine stored in this tank shall not exceed 14.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
5. The maximum wine storage throughput in this tank shall not exceed 53,000 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The maximum wine storage throughput in this tank shall not exceed 5,000,000 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The operator shall record, on a daily basis, total gallons of wine contained in the tank and temperature of the stored wine. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. The operator shall maintain records of annual throughput of wine. [District Rule 2201] Federally Enforceable Through Title V Permit
10. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-3386-472-2

EXPIRATION DATE: 10/31/2019

EQUIPMENT DESCRIPTION:

53,000 GALLON STEEL WINE STORAGE TANK WITH PRESSURE/VACUUM VALVE AND INSULATION

PERMIT UNIT REQUIREMENTS

1. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
2. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
3. The temperature of the wine stored in this tank shall be maintained at or below 40 degrees Fahrenheit. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
4. The ethanol content of wine stored in this tank shall not exceed 14.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
5. The maximum wine storage throughput in this tank shall not exceed 53,000 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The maximum wine storage throughput in this tank shall not exceed 5,000,000 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The operator shall record, on a daily basis, total gallons of wine contained in the tank and temperature of the stored wine. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. The operator shall maintain records of annual throughput of wine. [District Rule 2201] Federally Enforceable Through Title V Permit
10. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

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

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: N-3386-473-2

EXPIRATION DATE: 10/31/2019

EQUIPMENT DESCRIPTION:

53,000 GALLON STEEL WINE STORAGE TANK WITH PRESSURE/VACUUM VALVE AND INSULATION

PERMIT UNIT REQUIREMENTS

1. This tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
2. The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
3. The temperature of the wine stored in this tank shall be maintained at or below 40 degrees Fahrenheit. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
4. The ethanol content of wine stored in this tank shall not exceed 14.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
5. The maximum wine storage throughput in this tank shall not exceed 53,000 gallons per day. [District Rule 2201] Federally Enforceable Through Title V Permit
6. The maximum wine storage throughput in this tank shall not exceed 5,000,000 gallons per year. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The operator shall record, on a daily basis, total gallons of wine contained in the tank and temperature of the stored wine. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
9. The operator shall maintain records of annual throughput of wine. [District Rule 2201] Federally Enforceable Through Title V Permit
10. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694] Federally Enforceable Through Title V Permit

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

Appendix C
BACT Guideline

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 5.4.13*

Last Update: 09/26/2011

Wine Storage Tank - Non-Wood Material**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	1. Insulation or Equivalent***, Pressure Vacuum Relief Valve (PVRV) set within 10% of the maximum allowable working pressure of the tank; "gas-tight" tank operation; and continuous storage temperature not exceeding 75 degrees F, achieved within 60 days of completion of fermentation.	1. Capture of VOCs and thermal or catalytic oxidation or equivalent (98% control) 2. Capture of VOCs and carbon adsorption or equivalent (95% control) 3. Capture of VOCs and absorption or equivalent (90% control) 4. Capture of VOCs and condensation or equivalent (70% control)	

**This guideline is applicable to a wine storage tank that is not constructed out of wooden materials.
 ***Tanks made of heat-conducting materials such as stainless steel may be insulated or stored indoors (in a completely enclosed building, except for vents, doors and other essential openings) to limit exposure of diurnal temperature variations. Tanks made entirely of non-conducting materials such as concrete (except for fittings) are considered self-insulating.

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**

Appendix D
BACT Analysis

Top Down BACT Analysis for VOCs from Wine Storage Operations

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse guideline 5.4.13 identifies achieved in practice BACT for wine storage tanks as follows:

1. Insulation or Equivalent**, Pressure Vacuum Relief Valve (PVRV) set within 10% of the maximum allowable working pressure of the tank; "gas-tight" tank operation; and continuous storage temperature not exceeding 75 degrees F, achieved within 60 days of completion of fermentation.

The SJVUAPCD BACT Clearinghouse guideline 5.4.13 identifies technologically feasible BACT for wine storage tanks as follows:

2. Capture of VOCs and thermal or catalytic oxidation or equivalent (98% control)
3. Capture of VOCs and carbon adsorption or equivalent (95% control)
4. Capture of VOCs and absorption or equivalent (90% control)
5. Capture of VOCs and condensation or equivalent (70% control)

***Tanks made of heat-conducting materials such as stainless steel may be insulated or stored indoors (in a completely enclosed building, except for vents, doors and other essential openings) to limit exposure to diurnal temperature variations. Tanks made entirely of non-conducting materials such as concrete and wood (except for fittings) are considered self-insulating.*

SJVUAPCD BACT Clearinghouse guideline 5.4.13 does not identify any alternate basic equipment control alternatives.

Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

Rank by Control Effectiveness		
Rank	Control	Overall Capture and Control Efficiency
1	Capture of VOCs and thermal oxidation or equivalent	98%*
2	Capture of VOCs and carbon adsorption or equivalent	95%
3	Capture of VOCs and absorption (scrubber) or equivalent	90%
4	Capture of VOCs and condensation or equivalent	70%
5	Insulation or Equivalent, Pressure Vacuum Relief Valve (PVRV) set within 10% of the maximum allowable working pressure of the tank; "gas-tight" tank operation; and continuous storage temperature not exceeding 75 degrees F, achieved within 60 days of completion of fermentation	Baseline (Achieved-in-Practice)

* Following recent District practice, thermal and catalytic oxidation will be ranked together.

Step 4 - Cost Effectiveness Analysis

A cost effective analysis must be performed for all control options that have not been determined to be achieved in practice in the list from Step 3 above, in the order of their ranking, to determine the cost effective option with the lowest emissions.

District BACT Policy APR 1305 establishes annual cost thresholds for imposed control based upon the amount of pollutants reduced by the controls. If the cost of control is at or below the threshold, it is considered a cost effective control. If the cost exceeds the threshold, it is not cost effective and the control is not required. Per District BACT Policy, the maximum cost limit for VOC reduction is \$17,500 per ton of VOC emissions reduced.

Uncontrolled Storage Emissions

This project involves four wine storage tanks. Therefore, for the purposes of this cost effectiveness analysis, uncontrolled storage VOC emissions will be set equal to the total VOC emissions allowed from these tanks.

Uncontrolled Storage PE= 2,812 lb-VOC/year

Total Annual Cost

Total Annual Cost = Cost of Control System + Annual Operating Cost + Ducting/Piping/CIP

The Total Annual Cost is the cumulative total of capital cost of control device, annual operating cost, plus the cost of ducting/piping/CIP. The applicant has provided capital cost estimate for control device for the each option listed below as well as the ducting/piping/CIP. As a first step, if just using the partial cost of the ductwork plus CIP system is sufficient to show that the control option is not cost effective, additional cost may not be needed for the calculation purposes for this project.

Collection System Capital Investment (based on ductwork and clean-in-place system)

A common feature of all thermal oxidation/carbon adsorption/absorption or condensation options is that they require installation of a collection system for delivering the VOCs from the tanks to the common control device(s).

Basis of Cost Information:

- The costs for the ductwork and the required clean-in-place (CIP) system are based on information from the 2005 Eichleay Study. The 2005 Eichleay study was used in development of District Rule 4694 Wine Fermentation and Storage Tanks and includes substantial information on the costs and details of the potential application of VOC controls to wineries and addresses many of the technical issues of the general site specific factors for wineries.
- The District performed a cost survey of stainless steel ducting/piping and found that the values stated in the Eichleay report including the cost of inflation (applied as stated below) were less expensive; therefore, as a conservative estimate, the District will use the cost of ducting/piping from the Eichleay report which will include ducting, fittings,

bolt up, handle, and install. A summary of the ducting/piping cost survey is included in Appendix D2.

- Eichleay's cost estimate for ducting included the duct, fittings, bolt up, handle and install; therefore, the District did not allow the additional costs for foundations & supports, handling & erection, electrical, piping or painting, as allowed by the EPA Cost Manual.
- The collection system consists of stainless steel place ductwork (stainless steel is required due to food grade product status) with isolation valving, connecting the tanks to a common manifold system which ducts the combined vent to the common control device. The cost of dampers and isolation valving, installed in the ductwork, will be included in the cost estimate.
- A minimum duct size is established at six inches diameter at each tank to provide adequate strength for spanning between supports.
- One of the major concerns of a manifold duct system is microorganisms spoiling the product, and transferring from one tank to another. It is necessary to design into the system a positive disconnect of the ducting system when the tanks are not being filled. There are a number of ways this can be done. In this case, an automatic butterfly valve with a physical spool to disconnect the tank from the duct will be utilized.
- The ducting/piping costs quoted in the Eichleay study are from 2005 and must be adjusted to reflect 2016 prices. An overall inflation amount of 22.89% which was taken from the United States Department of Labor, Bureau of Labor Statistics, Consumer Price Index (CPI) Inflation Calculator and applied to the ducting/piping costs to determine the current 2016 prices: http://www.bls.gov/data/inflation_calculator.htm.
- See Attachment D1 for ducting layout diagrams and ducting cost estimates.

Capital Cost of Ductwork

As detailed in the tank layout sketches and the ductwork cost calculations included in Attachment D1, the cost for the tank group(s) proposed in this project is summarized below:

Connection length from 4 tanks to main duct = 4 tanks x 41.75 feet x \$31.09/foot = \$5,192

Piping length from node 1 to 2 = 22 feet x \$31.09/foot = \$684

Piping length from node 2 to emissions control = 32.5 feet x \$31.09/foot = \$1,010

6 inch butterfly valves = \$2,125/tank x 4 tanks = \$8,500

Removable spool = \$500/tank x 4 tanks = \$2,000

1 Knockout drum = \$15,000

Structural support allowance = \$15,000

Total cost = \$5,192 + \$684 + \$1,010 + \$8,500 + \$2,000 + \$15,000
= **\$47,386**

Total Capital Cost for the Tank Group(s):

The total capital cost of the ductwork is summarized in the table below:

Tank Group(s)	Total Ducting Cost Including Support Allowance
Total	\$47,386

Capital Cost of Ductwork for Wine Storage Tanks	
Cost Description	Cost (\$)
Combined Duct Estimate for all Tank Groups (See Duct Sizing in Attachment C1)	\$47,386
Adjusting factor for inflation from 2005 dollars to 2016 dollars (22.89% total increase)	1.2289
Inflation adjusted duct cost	\$58,233
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001).	
Direct Costs	
Base Equipment Costs (Ductwork) See Above	\$58,233
Instrumentation (not required)	-
Sales Tax - 3.31% of base equipment	\$1,928
Freight - 5% of base equipment	\$2,912
Purchased equipment cost (PEC)	\$63,073
Foundations & supports 8% (allowance already included in cost estimate)	-
Handling & erection 14% (already included in Eichleay cost estimate)	-
Electrical 4% (not required)	-
Piping 2% (not required)	-
Painting 1% (not required)	-
Insulation 1% of PEC	\$631
Direct Installation Costs (DIC)	\$631
Total Direct Costs (DC) (PEC + DIC)	\$63,704
Indirect Costs	
Engineering - 10% of PEC	\$6,307
Construction and field expenses - 5% of PEC	\$3,154
Contractor Fees - 10% of PEC	\$6,307
Start-up - 2% of PEC	\$1,262
Performance Test - 1% of PEC	\$631
Total Indirect Costs (IC)	\$17,661
Subtotal Capital Investment (SCI) (DC + IC)	\$81,365
Contingencies – 15% of SCI	\$12,205
Total Capital Investment (TCI) (SCI + Contingency)	\$93,570

Capital Cost Clean-In-Place (CIP) System

A ducting system on a tank farm must have this system to maintain sanitation and quality of the product. The cost of operation of the CIP system has not been estimated. Operation of a CIP system, using typical cleaning agents, will raise disposal and wastewater treatment costs. Most likely, these costs will be significant.

Capital Cost of Clean-In-Place (CIP) System of Ductwork for Wine Storage Tanks	
Cost Description	Cost (\$)
Current cost of CIP system	\$50,000
The following cost data is taken from EPA Control Cost Manual, Sixth Edition (EPA/452/B-02-001).	
Direct Costs	
Base Equipment Costs (CIP System) See Above	\$50,000
Instrumentation - 10% of base equipment	\$5,000
Sales Tax - 3.31% of base equipment	\$1,655
Freight - 5% of base equipment	\$2,500
Purchased equipment cost (PEC)	\$59,155
Foundations & supports - 8% of PEC	\$4,732
Handling & erection - 14% of PEC	\$8,282
Electrical - 4% of PEC	\$2,366
Piping – accounted for in ductwork cost	-
Painting - 1% of PEC	\$592
Insulation - 1% of PEC	\$592
Direct Installation Costs (DIC)	\$16,564
Total Direct Costs (DC) (PEC + DIC)	\$75,719
Indirect Costs	
Engineering - 10% of PEC	\$5,916
Construction and field expenses - 5% of PEC	\$2,958
Contractor fees - 10% of PEC	\$5,916
Start-up - 2% of PEC	\$1,183
Performance test - 1% of PEC	\$592
Total Indirect Costs (IC)	\$16,565
Subtotal Capital Investment (SCI) (DC + IC)	\$92,284
Contingencies - 15% of SCI	\$13,843
Total Capital Investment (TCI) (SCI + Contingency)	\$106,127

Annualized Capital Cost

Total capital costs = Ductwork + CIP System
 = \$93,570 + \$106,127
 = \$199,697

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

Amortization Factor = $\left[\frac{0.1(1.1)^{10}}{(1.1)^{10} - 1} \right] = 0.163$ per District policy, amortizing over 10 years at 10%

Therefore,

Total Collection System Annualized Capital Investment = \$199,697 x 0.163

Total Collection System Annualized Capital Investment = \$32,551

Option 1 - Collection of VOCs and Control by Thermal or Catalytic Oxidation (98% collection & control):

Total Annual Cost

Total Annual Cost = Ductwork + CIP System
= \$32,551

Emission Reductions

Annual Emission Reduction = Uncontrolled Emissions x 0.98
= 2,812 lb-VOC/year x 0.98
= 2,756 lb-VOC/year
= 1.38 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

Cost Effectiveness = \$32,551/year ÷ 1.38 tons-VOC/year
= \$23,588/ton-VOC

The analysis demonstrates that the annualized purchase cost of the required collection system ductwork equipment alone results in a cost effectiveness which exceeds the District's BACT cost effectiveness threshold of \$17,500/ton for VOC. Therefore, this option is not cost-effective and will not be considered for this project.

Option 2 - Collection of VOCs and control by carbon adsorption (95% collection and control):

Total Annual Cost

Total Annual Cost = Ductwork + CIP System
= \$32,551

Emission Reductions

Annual Emission Reduction = Uncontrolled Emissions x 0.95
= 2,812 lb-VOC/year x 0.95
= 2,671 lb-VOC/year
= 1.34 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

$$\begin{aligned} \text{Cost Effectiveness} &= \$32,551/\text{year} \div 1.34 \text{ tons-VOC/year} \\ &= \$24,292/\text{ton-VOC} \end{aligned}$$

The analysis demonstrates that the annualized purchase cost of the required collection system ductwork equipment alone results in a cost effectiveness which exceeds the District's BACT cost effectiveness threshold of \$17,500/ton for VOC. Therefore, this option is not cost-effective and will not be considered for this project.

Option 3 - Collection of VOCs and Control by Absorption/Scrubber (90% collection & control):

Total Annual Cost

$$\begin{aligned} \text{Total Annual Cost} &= \text{Ductwork} + \text{CIP System} \\ &= \$32,551 \end{aligned}$$

Emission Reductions

$$\begin{aligned} \text{Annual Emission Reduction} &= \text{Uncontrolled Emissions} \times 0.90 \\ &= 2,812 \text{ lb-VOC/year} \times 0.90 \\ &= 2,531 \text{ lb-VOC/year} \\ &= 1.27 \text{ tons-VOC/year} \end{aligned}$$

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

$$\begin{aligned} \text{Cost Effectiveness} &= \$32,551/\text{year} \div 1.27 \text{ tons-VOC/year} \\ &= \$25,631/\text{ton-VOC} \end{aligned}$$

The analysis demonstrates that the annualized purchase cost of the required collection system ductwork equipment alone results in a cost effectiveness which exceeds the District's BACT cost effectiveness threshold of \$17,500/ton for VOC. Therefore, this option is not cost-effective and will not be considered for this project.

Option 4 - Capture of VOCs and Condensation (70% collection & control):

Total Annual Cost

$$\begin{aligned} \text{Total Annual Cost} &= \text{Ductwork} + \text{CIP System} \\ &= \$32,551 \end{aligned}$$

Emission Reductions

$$\begin{aligned} \text{Annual Emission Reduction} &= \text{Uncontrolled Emissions} \times 0.70 \\ &= 2,812 \text{ lb-VOC/year} \times 0.70 \\ &= 1,968 \text{ lb-VOC/year} \\ &= 0.98 \text{ tons-VOC/year} \end{aligned}$$

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

$$\begin{aligned}\text{Cost Effectiveness} &= \$32,551/\text{year} \div 0.98 \text{ tons-VOC/year} \\ &= \$33,215/\text{ton-VOC}\end{aligned}$$

The analysis demonstrates that the annualized purchase cost of the required collection system ductwork equipment alone results in a cost effectiveness which exceeds the District's BACT cost effectiveness threshold of \$17,500/ton for VOC. Therefore, this option is not cost-effective and will not be considered for this project.

Option 5 - Insulation, PVRV, "Gas-Tight" Tank Operation, and Storage Temperature not Exceeding 75 deg F, Achieved within 60 days of Completion of Fermentation):

The only remaining control option in step 3 above has been deemed AIP for this class and category of source and per the District BACT policy is required regardless of the cost. Therefore, a cost effectiveness analysis is not required.

Step 5 – Select BACT

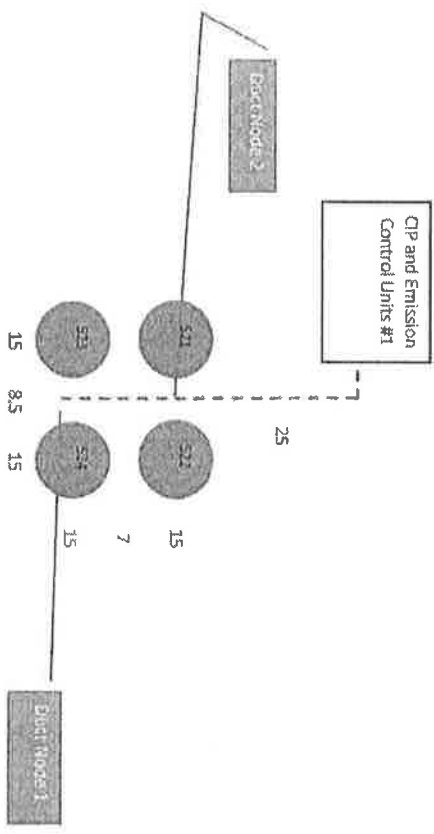
All identified feasible options with control efficiencies higher than the option proposed by the facility are not cost effective. Each of these wine storage tanks is insulated and is equipped with pressure/vacuum valve set within 10% of the maximum allowable working pressure of the tank and is being operated "gas tight" tank operation. The applicant has proposed to maintain a continuous storage temperature at or below 75°F within 60 days of completion of fermentation. Therefore, this proposal complies with the BACT requirements.

Appendix D1
Tank Layout and Ductwork Cost

Tanks are for storage only.

The tanks in this diagram are graphically shown as the same size for convenience of the spread sheet layout. The numbers in the cells around the tank layout reflect spacing and tank dimensions from the data base and layout Auto Cad files. Only the main duct between the tanks are shown. The connections from the tank to the main duct are priced out in the duct cost tabs. Total tanks in this sketch is 4.

Red dashed line is the most probable duct routing. Blue call out boxes show where a duct intersects with another duct or where a duct begins.



Nominal duct size is the smallest duct size for which we have pricing. The adjusted duct size is the size that was selected for the calculated flow. This size was not set smaller than 3 inches to maintain some structural rigidity in the duct piping system. The adjust price is based on a ratio of the duct sized based on flow to the closest nominal size for which we have pricing. (Circumference Size 1/Circumference Size 2)

Comments	Connection Length from Tanks to Main Ducts (Main is about 10 feet from floor)	Number of Tanks	Total Length of Connection Piping in Feet	Design Duct Velocity from Eickelhey Feet/Second	Gas Flow Rate Storage Fill in CFM for One Tank	Gas Flow Rate Storage Fill in CFM for One Tank	Duct size from tank to main diameter (See comments)	Design Duct Velocity from Eickelhey Feet/Second	Duct size main diameter (See comments)	Nominal Duct Size diameter in inches (See comments)	Number of Tanks to connect	Allocation at Each Tank from Previous Work	Adjusted Duct Size inches	Cost Per Foot from Eickelhey (See Comments)	Cost of Ducting for Main Duct
50,000 Gallon Nominal Tank Size	41.75	4,00	167.00	40.00	10.56	10.56	0.90	40.00	1.80	6.00	4.00	\$10,500	3.00	\$31.09	\$15,691

Number of Tanks	Tanks feeding node	Tanks pumping. This is set at 100%	Gas Flows CFM	Design Duct Velocity from Eickelhey Feet/Second	Duct size main diameter (See comments)	Nominal Duct Size diameter in inches (See comments)	Total Length of Piping in Feet Connecting Nodes	Adjusted duct Size Diameter inches	Cost Per Foot from Eickelhey (See Comments)	Cost of Ducting for Main Duct
2	1	2	21.13	40.00	1.27	6	22	3.00	\$31.09	\$684
2	2	4	42.26	40.00	1.80	6	33	3.00	\$31.09	\$1,019
										\$15,000
										\$15,000
										\$47,385

Eickelhey used \$46,000. Due to the low flow and the small valve tank size, this has been cut to \$15,000.

Total \$47,385

Knock Out Drum Eickelhey Structural Support Allowance

Appendix D2
Ducting/Piping Cost Survey

Supplier: Del Paso Pipe & Steel Inc. (<http://www.delpasopipeandsteel.com/>) Location: Sacramento, CA

Schedule 60 Pipe	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Duct Size Diameter (in.)	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Price Quote: \$9/lb													
Estimated Price/Foot	--	--	--	--	--	--	\$217.00	\$250.00	\$286.00	\$322.00	\$432.00	--	--

Supplier: Hayward Pipe & Supply Co. Inc (<http://www.haywardpipe.com/>) Location: Hayward, CA

Schedule 10 Pipe	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Duct Size Diameter (in.)	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Price (\$)	--	--	--	--	--	--	\$1,540.00	\$2,268.00	\$2,940.00	\$3,276.00	\$3,696.00	--	--
Length (feet)	--	--	--	--	--	--	20	20	20	20	20	--	--
Price/Foot (\$)	--	--	--	--	--	--	\$77.00	\$113.40	\$147.00	\$163.80	\$184.80	--	--

Supplier: OnlineMetals.com (<http://www.onlinemetals.com/>) Location: Nearest Warehouse - Los Angeles, CA

Schedule 10 Pipe	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Duct Size Diameter (in.)	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Price (\$)	\$75.28	\$108.97	\$160.34	\$288.00	\$520.00	--	--	--	--	--	--	--	--
Length (feet)	8	8	8	8	8	--	--	--	--	--	--	--	--
Price/Foot (\$)	\$9.79	\$13.62	\$20.04	\$36.00	\$65.00	--	--	--	--	--	--	--	--
Welds: Stainless Tube 304/304L 1/2" OD, 0.12" Wall: 3" OD, 0.12" Wall: 6", 0.12"													
Duct Size Diameter (in.)	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Price (\$)	\$109.86	\$321.34	--	\$626.16	--	--	--	--	--	--	--	--	--
Length (feet)	8	8	--	8	--	--	--	--	--	--	--	--	--
Price/Foot (\$)	\$13.73	\$40.17	--	\$78.52	--	--	--	--	--	--	--	--	--

Supplier: Lone Star Supply Co Location: Dickinson, TX

Schedule 10 Welded Pipe	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Duct Size Diameter (in.)	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"
Price/Foot (\$)	--	--	\$16.45	\$19.60	\$21.50	\$30.50	\$39.00	--	--	\$81.25	--	--	\$230.00

Supplier: Global Technology and Engineering Location: Excelsior Springs, MO

Note: Additional shipping Costs													
11 Gauge Tubing													
Duct Size Diameter (in.)	2"	3"	4"	6"	8"	10"	12"	14"	15"	18"	20"	22"	24"
Price (\$)	--	--	\$226.58	\$487.40	--	--	--	--	--	--	--	--	--
Length (feet)	--	--	7	7	--	--	--	--	--	--	--	--	--
Price/Foot (\$)	--	--	\$32.37	\$69.63	--	--	--	--	--	--	--	--	--

All suppliers 30.85 70%
 \$30.85 54% 33.50034

Appendix E
Quarterly Net Emissions Change

Quarterly Net Emissions Change (QNEC)

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

QNEC = PE2 - PE1, where:

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

N-3386-470-3 through -473-3:

Using the values in Sections VII.C.2 and VII.C.1 in the evaluation above, quarterly PE2 and quarterly PE1 for each wine storage tank can be calculated as follows:

$$\begin{aligned} \text{PE2}_{\text{quarterly}} &= \text{PE2}_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 703 \text{ lb/year} \div 4 \text{ qtr/year} \\ &= 175.75 \text{ lb-VOC/qtr-tank} \end{aligned}$$

$$\begin{aligned} \text{PE1}_{\text{quarterly}} &= \text{PE1}_{\text{annual}} \div 4 \text{ quarters/year} \\ &= 133 \text{ lb-VOC/year} \div 4 \text{ qtr/year} \\ &= 33.25 \text{ lb-VOC/qtr-tank} \end{aligned}$$

Quarterly NEC [QNEC]			
Pollutant	PE2 (lb/qtr)	PE1 (lb/qtr)	QNEC (lb/qtr)
NO _x	0	0	0
SO _x	0	0	0
PM ₁₀	0	0	0
CO	0	0	0
VOC	175.75	33.25	142.5

Appendix F
Compliance Certification

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

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

- SIGNIFICANT PERMIT MODIFICATION ADMINISTRATIVE AMENDMENT
 MINOR PERMIT MODIFICATION

COMPANY NAME: E&J Gallo Winery	FACILITY ID: N- 3386
1. Type of Organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: E&J Gallo Winery	
3. Agent to the Owner: Matthew Hart	

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

- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).
- Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.
- Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.
- Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

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

William Stewart
Signature of Responsible Official

9/19/2016
Date

William Stewart
Name of Responsible Official (please print)

Vice President of Operations
Title of Responsible Official (please print)

Appendix G
Potential to Emit – TANKS 4.0 Reports

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification: N-3386-470 to -473
 City: Modesto
 State: California
 Company: E&J Gallo Winery
 Type of Tank: Vertical Fixed Roof Tank
 Description: 53,000 gallon wine storage tank (each)

Tank Dimensions

Shell Height (ft): 40.00
 Diameter (ft): 15.00
 Liquid Height (ft): 40.00
 Avg. Liquid Height (ft): 40.00
 Volume (gallons): 51,554.93
 Turnovers: 96.98
 Net Throughput(gal/yr): 5,000,000.00
 Is Tank Heated (y/n): Y

Paint Characteristics

Shell Color/Shade: White/White
 Shell Condition: Good
 Roof Color/Shade: White/White
 Roof Condition: Good

Roof Characteristics

Type: Cone
 Height (ft) 2.00
 Slope (ft/ft) (Cone Roof) 0.27

Breather Vent Settings
 Vacuum Settings (psig): 0.00
 Pressure Settings (psig) 0.00

Meteorological Data used in Emissions Calculations: Stockton, California (Avg Atmospheric Pressure = 14.72 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

N-3386-470 to -473 - Vertical Fixed Roof Tank
Modesto, California

Mixture/Component	Month	Daily Liquid Surf Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg	Min	Max		Avg	Min	Max					
Water 21.0 % Vol Alcohol	AM	75.00	75.00	75.00	75.00	0.6718	0.5718	0.5718	29.2474			20.11	Option 1: VP70 = 55917 VP80 = 79451

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

N-3386-470 to -473 - Vertical Fixed Roof Tank
Modesto, California

Components	Losses(lbs)			Total Emissions
	Working Loss	Breathing Loss		
Wine 21.0 % Vol Alcohol	1.113.47	0.00		1.113.47

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification: N-3386-470 to -473
 City: Modesto
 State: California
 Company: E&J Gallo Winery
 Type of Tank: Vertical Fixed Roof Tank
 Description: 53,000 gallon wine storage tank (each)

Tank Dimensions

Shell Height (ft): 40.00
 Diameter (ft): 15.00
 Liquid Height (ft): 40.00
 Avg. Liquid Height (ft): 40.00
 Volume (gallons): 51,554.93
 Turnovers: 31.00
 Net Throughput(gal/yr): 1,598,202.83
 Is Tank Heated (Y/N): Y

Paint Characteristics

Shell Color/Shade: White/White
 Shell Condition: Good
 Roof Color/Shade: White/White
 Roof Condition: Good

Roof Characteristics

Type: Cone
 Height (ft): 2.00
 Slope (ft/ft) (Cone Roof): 0.27

Breather Vent Settings

Vacuum Settings (psig): 0.00
 Pressure Settings (psig): 0.00

Metereological Data used in Emissions Calculations: Stockton, California (Avg Atmospheric Pressure = 14.72 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

N-3386-470 to -473 - Vertical Fixed Roof Tank
Modesto, California

Measure/Component	Month	Daily Liquid Surf Temperature (deg F)			Liquid Bulk Temp (deg F)			Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol Weight	Basis for Vapor Calculations
		Avg	Min	Max	Avg	Min	Max	Avg	Min	Max					
Wt% 21.0 % Vol Alcohol	Jul	75.00	75.00	75.00	75.00	75.00	75.00	0.6718	0.6718	0.6718	29.2474			20.11	Option 1: VP70 = .55917 VP90 = .78451

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

N-3386-470 to -473 - Vertical Fixed Roof Tank
Modesto, California

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb):							0.0000					
Vapor Space Volume (cu ft):							117.8097					
Vapor Density (lb/cu ft):							0.0034					
Vapor Space Expansion Factor:							0.0000					
Vented Vapor Saturation Factor:							0.9768					
Tank Vapor Space Volume:							117.8097					
Vapor Space Volume (cu ft):							15.8000					
Tank Diameter (ft):							0.6667					
Vapor Space Outage (ft):							40.0000					
Tank Shell Height (ft):							40.0000					
Average Liquid Height (ft):							0.6667					
Roof Outage (ft):							0.6667					
Roof Outage (ft):							2.0000					
Roof Height (ft):							0.2700					
Roof Slope (ft):							7.5000					
Shell Radius (ft):												
Vapor Density:							0.0034					
Vapor Molecular Weight (lb/lb-mole):							29.2474					
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):							0.6718					
Daily Avg. Liquid Surface Temp. (deg. R):							534.6700					
Daily Average Ambient Temp. (deg. F):							77.8500					
Ideal Gas Constant R (psia-cu-ft / (lb-mol-deg R)):							10.731					
Liquid Bulk Temperature (deg. R):							534.6700					
Tank Paint Solar Absorbance (Shell):							0.1700					
Tank Total Solar Absorbance (Roof):							0.1700					
Daily Total Solar Insolation Factor (hrusq/ day):							2.6880-0900					
Vapor Space Expansion Factor:							0.0000					
Vapor Space Expansion Factor:							0.0000					
Daily Vapor Temperature Range (deg. R):							0.0000					
Daily Vapor Pressure Range (psia):							0.0000					
Breather Vent. Press. Setting Range(psia):							0.0000					
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):							0.6718					
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):							0.6718					
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):							0.6718					
Daily Avg. Liquid Surface Temp. (deg. R):							534.6700					
Daily Min. Liquid Surface Temp. (deg. R):							534.6700					
Daily Max. Liquid Surface Temp. (deg. R):							534.6700					
Daily Ambient Temp. Range (deg. R):							33.5000					
Vented Vapor Saturation Factor:							0.9768					
Vented Vapor Saturation Factor:							0.9768					
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):							0.6718					
Vapor Space Outage (ft):							0.6667					

Working Losses (lb):	747.7148
Vapor Molecular Weight (lb/lb-mole):	29.2474
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.6718
Net Throughput (gal/hr):	1,598,202.8940
Annual Turnovers:	31.0000
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	51,554.9902
Maximum Liquid Height (ft):	40.0000
Tank Diameter (ft):	15.0000
Working Loss Product Factor:	1.0000

Total Losses (lb): 747.7148

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: July

N-3386-470 to -473 - Vertical Fixed Roof Tank
Modesto, California

Components	Losses (lbs)		
	Working Loss	Breathing Loss	Total Emissions
Wine 21.0 % Vol Alcohol	747.71	0.00	747.71

file:///C:/Program%20Files%20(x86)/Tanks409d/summarydisplay.htm

09/08/2016

Appendix H
Baseline Actual Emissions Calculations – TANKS 4.0 Reports

Total emissions increase and Baseline Actual Emissions

Permit#	Throughput (gal)		Average Throughput (gal)	¹ BAE (ethanol and water) lb/year		² BAE (ethanol) lb/year
	9/1/14-8/31/15	9/1/15-8/31/16				
N-3386-470	727,742	1,046,980	887,361	92		49
N-3386-471	763,262	1,214,207	988,735	103		55
N-3386-472	935,095	958,740	946,918	98		53
N-3386-473	750,578	874,717	812,648	84		45
					Total:	202

³ Total emissions increase:	2410
--	-------------

Notes:

- 1 BAE (ethanol and water) values are taken from the attached TANKS 4.0 reports
- 2 BAE (ethanol) = ya x BAE (ethanol and water); ya = (26.7874 - 18.02)/(46.02 - 18.02) = 0.3132.
- 3 Total emissions increase = PE2 (ethanol) - BAE (ethanol) = 2,612 lb-VOC/yr - 202 lb-VOC/yr

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification
 User Identification: N-3386-470-2
 City: Modesto
 State: California
 Company: E&J Gallo Winery
 Type of Tank: Vertical Fixed Roof Tank
 Description: 53,000 gallon wine storage tank (Historical Emissions based on the average throughput for the period from 9/1/14 - 8/31/15, 9/1/15 - 8/31/16)

Tank Dimensions
 Shell Height (ft): 40.00
 Diameter (ft): 15.00
 Liquid Height (ft): 40.00
 Avg. Liquid Height (ft): 40.00
 Volume (gallons): 51,554.93
 Turnovers: 17.21
 Net Throughput(gal/yr): 837,361.00
 Is Tank Heated (y/n): Y

Paint Characteristics
 Shell Color/Shade: White/White
 Shell Condition: Good
 Roof Color/Shade: White/White
 Roof Condition: Good

Roof Characteristics
 Type: Cone
 Height (ft): 2.00
 Slope (ft/ft) (Cone Roof): 0.27

Breather Vent Settings
 Vacuum Settings (psig): 0.00
 Pressure Settings (psig): 0.00

Meteorological Data used in Emissions Calculations: Stockton, California (Avg Atmospheric Pressure = 14.72 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

N-3386-470-2 - Vertical Fixed Roof Tank
Modesto, California

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol Weight	Liquid Mass Fract	Vapor Mass Fract	Mol Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Wine 14.0 % Vol Alcohol	All	40.00	40.00	40.00	40.00	0.1628	0.1628	0.1628	26.7874			19.35	Option 1: VP40 = 15276 VP30 = 24015

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

N-3386-470-2 - Vertical Fixed Roof Tank
Modesto, California

Components	Losses(lbs)		
	Working Loss	Breathing Loss	Total Emissions
Wine 14.0 % Vol Alcohol	92.11	0.00	92.11

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification
 User Identification: N-3386-471-2
 City: Modesto
 State: California
 Company: E&J Gallo Winery
 Type of Tank: Vertical Fixed Roof Tank
 Description: 53,000 gallon wine storage tank (Historical Emissions based on the average throughput for the period from 9/1/14 - 8/31/15, 9/1/15 - 8/31/16)

Tank Dimensions
 Shell Height (ft): 40.00
 Diameter (ft): 15.00
 Liquid Height (ft): 40.00
 Avg. Liquid Height (ft): 40.00
 Volume (gallons): 51,554.93
 Turnovers: 19.18
 Net Throughput(gal/yr): 988,735.00
 Is Tank Heated (y/n): Y

Paint Characteristics
 Shell Color/Shade: White/White
 Shell Condition: Good
 Roof Color/Shade: White/White
 Roof Condition: Good

Roof Characteristics
 Type: Cone
 Height (ft): 2.00
 Slope (ft/ft) (Cone Roof): 0.27

Breather Vent Settings
 Vacuum Settings (psig): 0.00
 Pressure Settings (psig): 0.00

Meteorological Data used in Emissions Calculations: Stockton, California (Avg Atmospheric Pressure = 14.72 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

N-3386-471-2 - Vertical Fixed Roof Tank
Modesto, California

Mixture/Component	Month	Daily/Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)			Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass		Vapor Mass		Mol. Weight	Basis for Vapor Pressure Calculations
		Avg	Min	Max	Avg	Min	Max	Avg	Min	Max		Frac.	Frac.	Frac.	Frac.		
Wine 14.0 % Vol Alcohol	All	40.00	40.00	40.00	40.00	40.00	40.00	0.1828	0.1828	0.1828	28.7874					19.35	Option 1: VP40 = 18275 VP50 = 24015

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

N-3386-471-2 - Vertical Fixed Roof Tank
Modesto, California

Components	Working Loss	Losses(lbs)		Total Emissions
		Breathing Loss		
Wine 14.0 % Vol Alcohol	102.64	0.00		102.64

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification: N-3386-472-2
 City: Modesto
 State: California
 Company: E&J Gallo Winery
 Type of Tank: Vertical Fixed Roof Tank
 Description: 53,000 gallon wine storage tank (Historical Emissions based on the average throughput for the period from 9/1/14 - 8/31/15, 9/1/15 - 8/31/16)

Tank Dimensions

Shell Height (ft): 40.00
 Diameter (ft): 15.00
 Liquid Height (ft) : 40.00
 Avg. Liquid Height (ft): 40.00
 Volume (gallons): 51,554.93
 Turnovers: 19.18
 Net Throughput(gal/yr): 946,918.00
 Is Tank Heated (Y/N): Y

Paint Characteristics

Shell Color/Shade: White/White
 Shell Condition: Good
 Roof Color/Shade: White/White
 Roof Condition: Good

Roof Characteristics

Type: Cone
 Height (ft) 2.00
 Slope (ft/ft) (Cone Roof) 0.27

Breather Vent Settings

Vacuum Settings (psig): 0.00
 Pressure Settings (psig) 0.00

Meteorological Data used in Emissions Calculations: Stockton, California (Avg Atmospheric Pressure = 14.72 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

N-3386-472-2 - Vertical Fixed Roof Tank
Modesto, California

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)			Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract	Vapor Mass Fract	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.	Avg.	Min.	Max.	Avg.	Min.	Max.					
Went 14 0 % Vol Alcohol	All	40.00	40.00	40.00	40.00	40.00	0.1528	0.1528	0.1528	26.7874			19.35	Option 1: VP40 = 1.5276 VP50 = 2401.5	

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

N-3386-472-2 - Vertical Fixed Roof Tank
Modesto, California

Losses(lbs)			
Components	Working Loss	Breathing Loss	Total Emissions
Wine 14.0 % Vol Alcohol	98.30	0.00	98.30

TANKS 4.0.9d
Emissions Report - Summary Format
Tank Identification and Physical Characteristics

Identification

User Identification: N-3386-473-2
City: Modesto
State: California
Company: E&J Gallo Winery
Type of Tank: Vertical Fixed Roof Tank
Description: 53,000 gallon wine storage tank (Historical Emissions based on the average throughput for the period from 9/1/14 - 8/31/15, 9/1/15 - 8/31/16)

Tank Dimensions

Shell Height (ft): 40.00
Diameter (ft): 15.00
Liquid Height (ft): 40.00
Avg. Liquid Height (ft): 40.00
Volume (gallons): 51,554.93
Turnovers: 15.76
Net Throughput(gal/yr): 812,648.00
Is Tank Heated (Y/N): Y

Paint Characteristics

Shell Color/Shade: White/White
Shell Condition: Good
Roof Color/Shade: White/White
Roof Condition: Good

Roof Characteristics

Type: Cone
Height (ft): 2.00
Slope (ft/ft) (Cone Roof): 0.27

Breather Vent Settings

Vacuum Settings (psig): 0.00
Pressure Settings (psig): 0.00

Metereological Data used in Emissions Calculations: Stockton, California (Avg Atmospheric Pressure = 14.72 psia)

TANKS 4.0.9d
Emissions Report - Summary Format
Liquid Contents of Storage Tank

N-3386-473-2 - Vertical Fixed Roof Tank
Modesto, California

Mixture/Component	All	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg	Min	Max		Avg	Min	Max					
Water 14.0 % Vol Alcohol	All	40.00	40.00	40.00	40.00	0.1628	0.1628	0.1628	26.7874			19.35	Option 1: VP40 = 16276 VP50 = 24075

TANKS 4.0.9d
Emissions Report - Summary Format
Individual Tank Emission Totals

Emissions Report for: Annual

N-3386-473-2 - Vertical Fixed Roof Tank
Modesto, California

Components	Losses(lbs)		
	Working Loss	Breathing Loss	Total Emissions
Wine 14.0 % Vol Alcohol	84.36	0.00	84.36

