San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

APR 30 2014

Mr. Craig Rous
Bear Creek Winery
11900 N. Furry Road
Lodi, CA 95240

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # N-96
Project # N-1133555

Dear Mr. Rous:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. You requested that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. Bear Creek Winery proposes installation of 29 new white wine fermentation/wine storage tanks.

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

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

Thank you for your cooperation in this matter.

Sincerely,

Arnaud Marjollet
Director of Permit Services

Enclosures

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

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San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Wine Storage and Fermentation Tanks

Facility Name:	Bear Creek Winery	Date:	January 17, 2014
Mailing Address:	11900 N. Furry Road	Engineer:	Dennis Roberts
	Lodi, CA 95240	Lead Engineer:	Martin Keast
Contact Person:	Craig Rous		
Telephone:	(209) 969-3404		
Application #(s):	N-96-360-0 through '388-0		
Project #:	N-1133555		
Deemed Complete:	December 9, 2013		

I. Proposal

Bear Creek Winery has requested Authority to Construct (ATC) permits for the installation of twenty-nine (29) white wine fermentation/storage tanks. Bear Creek proposes to permit these tanks under the facility's existing Specific Limiting Condition (SLC) which limits the combined annual VOC emissions from all wine fermentation and storage operations at their facility.

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

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4102	Nuisance (12/17/92)
Rule 4694	Wine Fermentation and Storage Tanks (12/15/05)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice

Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The facility is located at 11900 N. Furry Road in Lodi, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

Bear Creek Winery produces both red and white table wines, as well as other specialty wine products, from the fermentation of grapes. During the "crush season," typically from late August to late November, both red and white grapes are received by truck and delivered to a crusher-stemmer which serves to crush the grapes and remove the stems. In the case of red wines, the resultant juice (termed "must" and containing the grape skins, pulp and seeds) is pumped to red wine fermentation tanks for fermentation, a batch process. The red wine fermentation tanks are specifically designed to ferment the must in contact with the skins and to allow the separation of the skins and seeds from the wine after fermentation. In the case of white wines, the must is sent to screens and presses for separation of grape skins and seeds prior to fermentation. After separation of the skins and seeds, the white must is transferred to a fermentation tank. White wine fermentation can be carried out in a tank without design provisions for solids separation since the skins and seeds have already been separated.

After transfer of the must (for red or white wine) to the fermentation tank, the must is inoculated with yeast which initiates the fermentation reactions. During fermentation, the yeast metabolizes the sugar in the grape juice, converting it to ethanol and carbon dioxide (CO_2) while releasing heat. Temperature is typically controlled by refrigeration, and is maintained at 45–65 °F for white wine fermentation and 70–95 °F for red wine fermentation. The sugar content of the fermentation mass is measured in °Brix (weight %) and is typically 22–26° for unfermented grape juice, dropping to 4° or less at the end of fermentation. Finished ethanol concentration is approximately 10 to 14 percent by volume. Batch fermentation requires 3-5 days per batch for red wine and 1-2 weeks per batch for white wine. VOCs are emitted during the fermentation process along with the CO_2. The VOCs consist primarily of ethanol along with small quantities of other fermentation byproducts.

Following the completion of fermentation, white wine is transferred directly to storage tanks. Red wine is first directed to the presses for separation of solids and then routed to the storage tanks. All tanks in the winery typically operate as two separate emissions units: (1) a fermentation operation during which the tank is vented directly to the atmosphere to release the evolved CO_2 byproduct from the fermentation reaction; and (2) a storage operation during which the tank is closed to minimize contact with air and refrigerated to preserve the wine. Post-fermentation operations such as cold stabilization, racking, and filtration are conducted in the tanks, resulting in a number of inter-tank transfers during the period between the end of fermentation and bottling or bulk shipment. Storage operations are conducted year-round. VOC emissions occur primarily as a result of the inter-tank transfers which are necessitated by the post fermentation operations.

V. Equipment Listing

Permit #	Equipment Description
N-96-360-0	210,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #718) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-361-0	210,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #719) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-362-0	210,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #726) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-363-0	210,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #727) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-364-0	160,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #709) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-365-0	160,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #710) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-366-0	160,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #716) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-367-0	160,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #717) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-368-0	51,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #701) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-369-0	51,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #702) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-370-0	51,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #708) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-371-0	51,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #709) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-372-0	46,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #665) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-373-0	46,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #666) WITH PRESSURE/VACUUM VALVE AND INSULATION

N-96-374-0	13,400 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #735) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-375-0	13,400 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #736) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-376-0	13,400 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #737) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-377-0	13,400 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #738) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-378-0	13,400 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #739) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-379-0	13,400 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #740) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-380-0	13,400 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #741) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-381-0	6,500 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #728) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-382-0	6,500 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #729) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-383-0	6,500 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #730) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-384-0	6,500 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #731) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-385-0	6,500 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #732) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-386-0	6,500 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #733) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-387-0	6,500 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #734) WITH PRESSURE/VACUUM VALVE AND INSULATION
N-96-388-0	6,500 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #735) WITH PRESSURE/VACUUM VALVE AND INSULATION

As per District policy APR 1035 Flexibility in Equipment Descriptions in ATCs, some flexibility in the final specifications of the equipment is requested. The proposed tanks in this project will be built on-site and most likely will contain slight variations in the tank dimensions which lead to slightly different tank capacities than proposed. These slight tank variations should not have a significant effect on the tank emissions or tank operation. Therefore, the permit will specify the nominal tank dimensions and the source will submit to the District the measured tank capacity (known as the gauge volume) once the tank is constructed. The following sample condition will be listed on the permits to ensure compliance:

- *The nominal tank dimensions are 14.5 feet in diameter and 40 feet in height with a proposed volume of 51,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201]*

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 proposed pressure/vacuum valve limits these emissions 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.

The temperature of the fermentation is controlled to maintain an average fermentation temperature not exceeding 95 °F which avoids higher temperatures that might be damaging to the yeast cells and reduces the potential for an out-of-control fermentation reaction in the tank. Temperature control serves to minimize VOC emissions relative to a tank without temperature control since the potential emissions increase with fermentation temperature.

VII. General Calculations

A. Assumptions/Basis

- Maximum ethanol content of stored wine is limited to 16% per applicant.
- Daily throughput of each of the storage tanks is limited to 5 turns per day.
- Annual throughput of each storage tank is limited to 25 turns per year.
- All storage tanks are insulated and equipped with a pressure/vacuum valve.
- Daily Potential to Emit for each wine tank will be calculated on a tank-by-tank basis as outlined in District FYI-114, Estimating VOC Emissions from Wine Storage Tanks.
- Fermentation operations in each of the 29 new white wine fermentation emissions units will be limited to 6 fermentation turns in each tank per year.

B. Emission Factors

The required emission factors for fermentation operations are taken from District FYI-114, *Estimating VOC Emissions from Winery Tanks*:

White Wine Fermentation
Daily: 1.62 lb-VOC/1000 gallons tank capacity
Annual: 2.5 lb-VOC/1000 gallons annual production

Wine Storage:

For the maximum ethanol content of 16.0%, the emission factors are given by District FYI-114:

Ef_{DAILY} = 0.248 lb-VOC/1000 gallons

Ef_{ANNUAL} = 0.143 lb-VOC/1000 gallons

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Since these are new storage emissions units, PE1 = 0 (all pollutants) for storage operations in these tanks.

2. Post Project Potential to Emit (PE2)

a. Daily PE2 for each storage tank emission unit:

For new wine storage tank emission units, daily PE2 is listed in Appendix A

b. Annual PE2 for each storage tank emission unit:

For new wine storage tank emission units, annual PE2 is listed in Appendix B

c. Daily PE2 for each fermentation tank emission unit:

For new wine fermentation tank emission units, daily PE2 is listed in Appendix C

d. Annual PE2 for each fermentation tank emission unit:

For new wine fermentation tank emission units, annual PE2 is listed in Appendix D

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

Pursuant to District Rule 2201, the Pre-Project Stationary Source Potential to Emit (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 that have occurred at the source, and which have not been used on-site.

This project only concerns VOC emissions. This facility acknowledges that its VOC emissions are already above the Offset and Major Source Thresholds for VOC emissions; therefore, SSPE1 calculations are not necessary.

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

Pursuant to District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) 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 that have occurred at the source, and which have not been used on-site.

This project only concerns VOC emissions. This facility acknowledges that its VOC emissions are already above the Offset and Major Source Thresholds for VOC emissions; therefore, SSPE2 calculations are not necessary.

5. Major Source Determination

Rule 2201 Major Source Determination

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

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

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

Rule 2410 Major Source Determination

All emissions units at this facility are wine fermentation and/or wine storage tanks. These emissions units emit only VOC and CO2.

The annual emissions VOC emissions are limited to 242,165 lb-VOC per year (121 tons per year) by the facility's SLC.

CO2 Emissions from Fermentation

Basis

- Project total annual pre-project fermentation emissions = 242,165 lb-VOC/year
- Assume all wine produced is white wine (worst case)
- The VOC emission factor is 2.5 lb-VOC per 1,000 gallons of white wine fermented.
- Maximum practical ethanol content for wine fermentation is 15 volume percent (higher concentrations have a negative impact on yeast reproduction with death of the yeast occurring at around 18 vol %)
- Molecular weight of ethanol and CO2 are 46 and 44 lb/mole respectively.
- The fermentation reaction produces one mole of carbon dioxide for each mole of ethanol produced.
- Liquid density for ethanol is 6.61 lb/gal at 60 deg F.

Calculation

$$\text{Maximum Annual Wine Production Based on 100\% White Wine'} = 242{,}165 \ \frac{\text{lb-VOC}}{\text{year}} \div 2.5 \ \frac{\text{lb-VOC}}{1000 \text{ gallons}}$$

$$\text{Maximum Annual Wine Production Based on 100\% White Wine'} = 96{,}866{,}000 \text{ gallons per year}$$

$$\text{Maximum Annual Ethanol Production} = 96{,}866{,}000 \ \frac{\text{gal}}{\text{year}} \times 15\% \text{ ethanol} \times 6.61 \ \frac{\text{lb-ethanol}}{\text{gallon}}$$

$$\text{Maximum Annual Ethanol Production} = 96{,}041{,}449 \text{ lb-ethanol per year}$$

$$\text{Maximum Annual CO2 Production} = 96{,}041{,}449 \ \frac{\text{lb}}{\text{year}} \times \frac{1 \text{ mole}}{46 \text{ lb ethanol}} \times \frac{1 \text{ mole CO2}}{1 \text{ mole ethanol}} \times \frac{44 \text{ lb CO2}}{\text{mole CO2}}$$

$$\text{Maximum Annual CO2 Production} = 91{,}865{,}734 \text{ lb-CO2 per year}$$

Maximum Annual CO2 Production = 45,933 ton-CO2 per year

The facility evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21(b)(1)(i). Therefore, the following PSD Major Source threshold for VOC is applicable.

PSD Major Source Determination (tons/year)		
	VOC	CO2
Facility PE before Project Increase	121	45,933
PSD Major Source Thresholds	250	100,000
PSD Major Source?	**No**	**No**

Therefore, the facility is not an existing Major Source for PSD.

6. Baseline Emissions (BE)

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

Pursuant to District Rule 2201, BE = Pre-project Potential to Emit for:

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

otherwise,

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

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

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.*"

The *net emissions increase* is calculated as the increase in actual emissions resulting from the project. The post project actual emissions are conservatively assumed to be equal to the Post Project Potential to Emit. The calculated net emissions increase is significant if it exceeds the values in the following table:

SB 288 Major Modification Thresholds (Existing Major Source)	
Pollutant	Threshold (lb/year)
VOC	50,000
NO_x	50,000
PM_{10}	30,000
SO_x	80,000

This facility is a major stationary source for VOC which concedes that the Post Project Potential to Emit exceeds the pre-project baseline actual emissions by more than 50,000 lb/year for the emissions units in this project. Therefore, this project is an SB 288 Major Modification.

8. Federal Major Modification

District Rule 2201 states that Federal Major Modifications are the same as "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA. SB 288 Major Modifications are not federal major modifications if they meet the criteria of the "Less-Than-Significant Emissions Increase" exclusion.

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

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

Significant Threshold (lb/year)	
Pollutant	Threshold (lb/year)
VOC	0

The Net Emissions Increases (NEI) for purposes of determination of a "Less-Than-Significant Emissions Increase" exclusion will be calculated below to determine if this project qualifies for such an exclusion.

Net Emission Increase for New Units (NEI_N)

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

$NEI_N = PE2_N - BAE$

Since these are new units, BAE for these units is zero and,

$NEI_N = PE2_N$

where $PE2_N$ is the Post Project Potential to Emit for the new emissions units.

$PE2_N$ = 69,234 lb-VOC/year (see Appendix E)

The NEI for this project is thus calculated as follows:

NEI = NEI_N
NEI = 16,762 lb-VOC/year

The NEI for this project will be greater than the federal Major Modification threshold of 0 lb-VOC/year. Therefore, this project does not qualify for a "Less-Than-Significant Emissions Increase" exclusion and is thus determined to be a Federal Major Modification for VOC.

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

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

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

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

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

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

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

I. Project Location Relative to Class 1 Area

As demonstrated in the "PSD Major Source Determination" Section above, the facility was determined to be a existing major source for PSD. Because the project is not located within 10 km of a Class 1 area – modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

II. Significance of Project Emission Increase Determination

a. Potential to Emit of attainment/unclassified pollutant for New or Modified Emission Units vs PSD Significant Emission Increase Thresholds

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

This project resulted in no change in the Potential to Emit of any pollutant from the facility

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)						
	NO2	SO2	CO	PM	PM10	CO2e
Total PE from New and Modified Units	0	0	0	0	0	0
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000
PSD Significant Emission Increase?	N	N	N	N	N	N

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

10. Quarterly Net Emissions Change (QNEC)

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

QNEC = PE2 - 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.

For this project, PE2 = PE1 and therefore QNEC = 0

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following*:

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

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

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

The applicant is proposing to install 29 new wine fermentation and storage tanks with a PE greater than 2 lb/day for VOC. Thus BACT is triggered for VOC for these emissions units.

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

There are no emissions units being relocated from one stationary source to another, hence BACT is not triggered under this category.

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

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

d. SB 288/Federal Major Modification

As discussed in Section VII.C.8 above, this project does constitute a SB288 and Federal Major Modification for VOC. Therefore BACT is triggered for VOC.

2. BACT Guideline

BACT Guideline 5.4.13, applies to the wine storage tanks. [Wine Storage Tanks] (Appendix E)

BACT Guideline 5.4.14, applies to the wine fermentation tanks. [Wine Fermentation Tanks] (Appendix D)

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 Analyses (Appendix G and EF), BACT has been satisfied with the following:

Storage

VOC: Insulated tank, pressure/vacuum valve set within 10% of the maximum allowable working pressure of the tank, "gas tight" tank operation and achieve and maintain a continuous storage temperature not exceeding 75 ^{o}F within 60 days of completion of fermentation.

Fermentation

VOC: Temperature-Controlled Open Top Tank with Maximum Average Fermentation Temperature of 95 deg F.

B. Offsets

1. Offset Applicability

Offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the Post Project Stationary Source Potential to Emit (SSPE2) equals to or exceeds the offset threshold levels in Table 4-1 of Rule 2201.

Facility emissions are already above the Offset and Major Source Thresholds for VOC emissions; therefore, offsets are triggered.

2. Quantity of Offsets Required

As discussed above, the facility is an existing Major Source for VOC and the SSPE2 is greater than the offset thresholds; therefore offset calculations will be required for this project.

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

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

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

BE = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE)

As discussed in Appendix C, potential emissions from wine tanks must be determined with consideration of the total tank population at the facility. As established in District Project N-1100320, all tanks at this facility meet the District' determination of achieved-in-practice BACT (and are thus Clean Emission Units), therefore ΣBE is taken to be the pre-project Potential to Emit of all wine tanks at the facility which is given by the existing Specific Limiting Condition on the permits:

ΣBE = 242,165 lb-VOC/year

Post project, the new tanks will be covered by the SLC which is unchanged by this project and therefore:

ΣPE2 = 242,165 lb-VOC/year

There are no increases in cargo carrier emissions due to this project. Therefore

Offsets Required (lb/year) = Σ[PE2 – BE] x DOR = [ΣPE2 - ΣBE] x DOR
Per section VIII.C.6, Σ BE = 242,165 lb-VOC/year
Per section VIII.C.2, Σ PE2 = 242,165 lb-VOC/year
Offsets Required (lb/year) = [242,165 – 242,165] x DOR
= 0 lb-VOC/year x DOR
= 0 lb-VOC/year

C. Public Notification

1. Applicability

Public noticing is required for:

a. New Major Sources, Federal Major Modifications, and SB288 Major Modifications,
b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
c. Any project which results in the offset thresholds being surpassed, and/or
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.

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

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

As demonstrated in VII.C.7 and VII.C.8, this project does constitute a SB 288 and Federal Major Modification for VOC; therefore, public noticing for SB 288 and Federal Major Modification purposes is required.

b. PE > 100 lb/day

The PE2 for proposed new permit units -360-0 to -367-0 exceeds 100 lb-VOC per day as indicated in Appendices A and B. Therefore, public noticing for PE > 100 lb/day purposes is required.

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 Threshold				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
VOC	> 20,000	> 20,000	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 Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post

Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table:

Stationary Source Increase in Permitted Emissions [SSIPE] – Public Notice					
Pollutant	Σ Project PE2 (lb/year)	Σ Project PE1 (lb/year)	SSIPE (lb/year)	SSIPE Public Notice Threshold	Public Notice Required?
VOC	242,165	242,165	0	20,000 lb/year	No

As demonstrated above, the SSIPE is not greater than 20,000 lb/year for VOC; therefore public noticing for SSIPE purposes is not required.

2. Public Notice Action

As discussed above, public noticing is required for this project for PE greater than 100 lb/day for VOC, SB 288 and Federal Major Modification for VOC. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB), US Environmental Protection Agency (US EPA), and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC permits for this equipment.

D. Daily Emission Limits (DELs)

Daily Emissions Limitations (DELs) and other enforceable conditions are required 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

N-96-360-0 through '388-0

- *The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Y*
- *The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Y*
- *When used for wine storage, 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] Y*
- *When this tank is used for wine storage, 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] Y

- *The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Y*
- *The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Y*
- *When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Y*
- *Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Y*
- *Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Y*
- *Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Y*
- *Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Y*
- *The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Y*
- *Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Y*

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

No monitoring is required to demonstrate compliance with Rule 2201.

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offsets, public notification and daily emission limit requirements of Rule 2201. Recordkeeping is also required for winery tanks pursuant to District Rule 4694, *Wine Fermentation and Storage Tanks*. The following conditions will be listed on the permits to ensure compliance:

N-96-360-0 through '388-0

- *When this tank is used for wine storage, 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 1070 and 2201] Y*
- *The operator shall record, on a weekly basis, the total gallons of wine or heavy lees contained in the tank and the maximum temperature of the stored wine. [District Rule 4694]*
- *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, shall be maintained. [District Rules 1070 and 2201]*
- *The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201]*
- *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]*
- *Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201]*
- *If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Y*
- *For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average*

fermentation temperature and the uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rules 2201 and 4694]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. However, since this project involves only VOC and no ambient air quality standard exists for VOC, an AAQA is not required for this project.

G. Compliance Certification

Rule 2201 requires the owner of a new Major Source or a source undergoing a Title I 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 facility is a Federal Major Modification and this project does constitute a Title I modification, therefore this requirement is applicable. The facility's compliance certification is included in Appendix H.

H. Alternative Siting Analysis

Alternative siting analysis is required for any project, which constitutes a New Major Source or a Federal Major Modification.
In addition to winery tanks, the operation of a winery requires a large number support equipment, services and structures such as raw material receiving stations, crushers, piping, filtering and refrigeration units, warehouses, laboratories, bottling and shipping facilities, and administration buildings.

Since the current project involves only a minimal increase in the winery's total tank volume and no change to any other facets of the operation, 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 and facilities on a much greater scale, and would therefore result in a much greater impact.

Rule 2410 Prevention of Significant Deterioration

The prevention of significant deterioration (PSD) program is a construction permitting program for new major stationary sources and major modifications to existing major stationary sources located in areas classified as attainment or in areas that are unclassifiable for any criteria air pollutant.

As demonstrated above, this project is not subject to the requirements of Rule 2410 due to a significant emission increase and 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. Section 3.29 defines a significant permit modification as a "permit amendment that does not qualify as a minor permit modification or administrative amendment."

Section 3.20.5 states that a minor permit modification is a permit modification that does not meet the definition of modification as given in Section 111 or Section 112 of the Federal Clean Air Act. Since this project is a Title I modification (i.e. Federal Major Modification), the proposed project is considered to be a modification under the Federal Clean Air Act. As a result, the proposed project constitutes a Significant Modification to the Title V Permit pursuant to Section 3.29.

As discussed above, the facility has applied for a Certificate of Conformity (COC) (see Appendix I); therefore, the facility must apply to modify their Title V permit with an administrative amendment, prior to operating with the proposed modifications. Continued compliance with this rule is expected. The 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 fermentation and/or 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 fermentation and/or storage tank operations.

Rule 4102 Nuisance

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. Public nuisance conditions are not expected as a result of the proposed operations provided the equipment is well maintained. Therefore, the following condition will be listed on each permit to ensure compliance:

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

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 HAP as defined by Section 44321 of the California Health and Safety Code. Therefore, there are no increases in HAP emissions associated with any emission units in this project, therefore a health risk assessment is not necessary and no further risk analysis is required.

District 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.

Section 5.1 requires the winery operator achieve Required Annual Emissions Reductions (RAER) equal to at least 35% of the winery's Baseline Fermentation Emissions (BFE). Per the definition of RAER in Section 3.25 of the Rule, the RAER may be achieved by any combination of Fermentation Emission Reductions (FER), Certified Emission Reductions (CER) or District Obtained Emission Reductions (DOER) as established in the facility's District-approved Rule 4694 Compliance Plan, due every three years on December 1st beginning in 2006. The facility has submitted the required plan to the District and is currently satisfying the required emission reductions in the form of Certified Emission Reductions.

The following condition listed on the facility-wide permit ensures compliance:

- *A Three-Year Compliance Plan that demonstrates compliance with the requirements of Section 5.1 of District Rule 4694 (12/15/05) for each year of the applicable compliance period shall be submitted to the District by no later than December 1, 2006, and every three years thereafter on or before December 1. [District Rule 4694]*

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 conditions will be listed on the permits for stainless steel tanks ≥ 5,000 gallons in capacity and used for storage to ensure compliance with the requirements of Section 5.2.1:

- *When used for wine storage, 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]*

- *When used for wine storage, 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 following condition will be placed on the permits for stainless steel tanks ≥ 5,000 gallons in capacity and used for storage to ensure compliance with the requirements of Section 5.2.2:

- *When used for wine storage, the temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rule 4694]*

Every three years, Section 6.1 and 6.2 require the facility to submit a Three-Year Compliance Plan and a Three-Year Compliance Plan Verification respectively. Section 6.3 requires that an Annual Compliance Plan Demonstration be submitted to the District no later than February 1 of each year to show compliance with the applicable requirements of the Rule. Section 6.4.3 requires that all monitoring be performed for any Certified Emission Reductions as identified in the facility's Three-Year Compliance Plan and that the records of all monitoring be maintained.

The following conditions listed on the facility-wide permit ensure compliance:

- *A Three-Year Compliance Plan that demonstrates compliance with the requirements of Section 5.1 of District Rule 4694 (12/15/05) for each year of the applicable compliance period shall be submitted to the District by no later than December 1, 2006, and every three years thereafter on or before December 1. [District Rule 4694]*
- *A Three-Year Compliance Plan Verification that demonstrates that the Three-Year Compliance Plan elements are in effect shall be submitted to the District by no later than July 1, 2007, and every three years thereafter on or before July 1. [District Rule 4694, 6.2]*

- *An Annual Compliance Plan Demonstration that shows compliance with the applicable requirements of this rule shall be submitted to the District by no later than February 1, 2008, and every year thereafter on or before February 1. [District Rule 4694]*
- *Operators using CER to mitigate fermentation emissions shall perform all monitoring and recordkeeping, as established in their approved Three-Year Compliance Plan, and shall maintain all records necessary to demonstrate compliance. [District Rule 4694]*

Section 6.4.1 requires that records be kept for each fermentation batch. The following condition will be listed on the permits for each fermentation tank to ensure compliance:

- *For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and the uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rules 2201 and 4694]*

Section 6.4.2 requires that weekly records be kept of wine volume and temperature in each storage tank. The following conditions will be listed on the permit for each storage tank to ensure compliance with the requirements of Section 6.4.2:

- *When used for wine storage, the operator shall determine and record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694]*

Section 6.4.3 requires that all monitoring be performed for any Certified Emission Reductions as identified in the facility's Three-Year Compliance Plan and that the records of all monitoring be maintained. The following condition listed on the facility-wide permit ensures compliance:

- *Operators using CER to mitigate fermentation emissions shall perform all monitoring and recordkeeping, as established in their approved Three-Year Compliance Plan, and shall maintain all records necessary to demonstrate compliance. [District Rule 4694]*

Section 6.4 requires that records required by this rule be maintained, retained on-site for a minimum of five years, and made available to the APCO upon request. The following conditions will be listed on all permits to ensure compliance:

- *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]*

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.

The County of Merced (County) is the public agency having principal responsibility for approving the project. As such, the County served as the Lead Agency (CCR §15367). In approving the project, the Lead Agency prepared and adopted a Mitigated Negative Declaration. The Lead agency filed a Notice of Determination, stating that the environmental document was adopted pursuant to the provisions of CEQA and concluding that the project would not have a significant effect on the environment.

The District is a Responsible Agency for the project because of its discretionary approval power over the project via its Permits Rule (Rule 2010) and New Source Review Rule (Rule 2201), (CCR §15381). As a Responsible Agency the District complies with CEQA by considering the environmental document prepared by the Lead Agency, and by reaching its own conclusion on whether and how to approve the project (CCR §15096).

The District has considered the Lead Agency's environmental document. Furthermore, the District has conducted an engineering evaluation of the project, this document, which demonstrates that Stationary Source emissions from the project would be below the District's thresholds of significance for criteria pollutants. Thus, the District finds that through a combination of project design elements, compliance with applicable District rules and regulations, and compliance with District air permit conditions, project specific stationary source emissions will have a less than significant impact on air quality. The District does not have authority over any of the other project impacts and has, therefore, determined that no additional findings are required (CEQA Guidelines §15096(h)).

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue Authority to Construct permits N-96-360-0 through '388-0 subject to the permit conditions on the attached draft Authority to Construct permits in Appendix J.

X. Billing Information

Billing Information							
Permit.			Fee Description		Fee Rule		Fee
N-96-	360	-0	210,000	GALLONS	3020-05	E	$246
N-96-	361	-0	210,000	GALLONS	3020-05	E	$246
N-96-	362	-0	210,000	GALLONS	3020-05	E	$246
N-96-	363	-0	210,000	GALLONS	3020-05	E	$246
N-96-	364	-0	160,000	GALLONS	3020-05	E	$246
N-96-	365	-0	160,000	GALLONS	3020-05	E	$246
N-96-	366	-0	160,000	GALLONS	3020-05	E	$246
N-96-	367	-0	160,000	GALLONS	3020-05	E	$246
N-96-	368	-0	51,000	GALLONS	3020-05	D	$185
N-96-	369	-0	51,000	GALLONS	3020-05	D	$185
N-96-	370	-0	51,000	GALLONS	3020-05	D	$185
N-96-	371	-0	51,000	GALLONS	3020-05	D	$185
N-96-	372	-0	46,000	GALLONS	3020-05	C	$135
N-96-	373	-0	46,000	GALLONS	3020-05	C	$135
N-96-	374	-0	13,400	GALLONS	3020-05	B	$93
N-96-	375	-0	13,400	GALLONS	3020-05	B	$93
N-96-	376	-0	13,400	GALLONS	3020-05	B	$93
N-96-	377	-0	13,400	GALLONS	3020-05	B	$93
N-96-	378	-0	13,400	GALLONS	3020-05	B	$93
N-96-	379	-0	13,400	GALLONS	3020-05	B	$93
N-96-	380	-0	13,400	GALLONS	3020-05	B	$93
N-96-	381	-0	6,500	GALLONS	3020-05	B	$93
N-96-	382	-0	6,500	GALLONS	3020-05	B	$93
N-96-	383	-0	6,500	GALLONS	3020-05	B	$93
N-96-	384	-0	6,500	GALLONS	3020-05	B	$93
N-96-	385	-0	6,500	GALLONS	3020-05	B	$93
N-96-	386	-0	6,500	GALLONS	3020-05	B	$93
N-96-	387	-0	6,500	GALLONS	3020-05	B	$93
N-96-	388	-0	6,500	GALLONS	3020-05	B	$93

XI. Appendices

A: Daily PE2 for Storage Tanks
B: Annual PE2 for Storage Tanks
C: Daily PE2 for Fermentation Tanks
D: Annual PE2 for Fermentation Tanks
E: Federal Major Modification Calculations
F: BACT Guideline 5.4.14 and Top Down BACT Analysis – Wine Fermentation
G: BACT Guideline 5.4.13 and Top Down BACT Analysis – Wine Storage
H: Compliance Certification
I. COC Compliance Certification
J Draft ATC Permits

Appendix A

Daily PE2 for Storage Tanks

Daily PE2 for Storage Tanks

Bear

N-956, 1120314

Permit Unit	Tank Capacity gallons	Potential Throughput gal/day	Emission Factor lb-VOC/day per 1000 gallons tank capacity	Daily Potential to Emit lb-VOC/day
N-96- 360 -0	210,000	1,050,000	0.248	260.4
N-96- 361 -0	210,000	1,050,000	0.248	260.4
N-96- 362 -0	210,000	1,050,000	0.248	260.4
N-96- 363 -0	210,000	1,050,000	0.248	260.4
N-96- 364 -0	160,000	800,000	0.248	198.4
N-96- 365 -0	160,000	800,000	0.248	198.4
N-96- 366 -0	160,000	800,000	0.248	198.4
N-96- 367 -0	160,000	800,000	0.248	198.4
N-96- 368 -0	51,000	255,000	0.248	63.2
N-96- 369 -0	51,000	255,000	0.248	63.2
N-96- 370 -0	51,000	255,000	0.248	63.2
N-96- 371 -0	51,000	255,000	0.248	63.2
N-96- 372 -0	46,000	230,000	0.248	57.0
N-96- 373 -0	46,000	230,000	0.248	57.0
N-96- 374 -0	13,400	67,000	0.248	16.6
N-96- 375 -0	13,400	67,000	0.248	16.6
N-96- 376 -0	13,400	67,000	0.248	16.6
N-96- 377 -0	13,400	67,000	0.248	16.6
N-96- 378 -0	13,400	67,000	0.248	16.6
N-96- 379 -0	13,400	67,000	0.248	16.6
N-96- 380 -0	13,400	67,000	0.248	16.6
N-96- 381 -0	6,500	32,500	0.248	8.1
N-96- 382 -0	6,500	32,500	0.248	8.1
N-96- 383 -0	6,500	32,500	0.248	8.1
N-96- 384 -0	6,500	32,500	0.248	8.1
N-96- 385 -0	6,500	32,500	0.248	8.1
N-96- 386 -0	6,500	32,500	0.248	8.1
N-96- 387 -0	6,500	32,500	0.248	8.1
N-96- 388 -0	6,500	32,500	0.248	8.1

Appendix B

Annual PE2 for Storage Tanks

Post Project Potential to Emit, N-1133555

Wine Storage Operation

Maximum storage throughput is 25 tank volumes per year

Maximum ethanol content is 16 volume%

The wine storage emission factor is 0.143 lb-VOC/1000 gallons throughput

Bear Creek N-1133555								
Permit Unit	# tanks	Nominal volume Each Gallons	Total Nominal Volume Gallons	Number Fills per Year	% Tank Fill for White Wine	Annual Wine Throughput gallons	Emission Factor lb-VOC/1000 gal	Annual Emissions lb
360-0 to 363-0	4	210,000	840,000	25	100%	21,000,000	0.143	3,003
364-0 to 367-0	4	160,000	640,000	25	100%	16,000,000	0.143	2,288
368-0 to 371-0	4	51,000	204,000	25	100%	5,100,000	0.143	729
372-0 to 373-0	2	46,000	92,000	25	100%	2,300,000	0.143	329
374-0 to 380-0	7	13,400	93,800	25	100%	2,345,000	0.143	335
381-0 to 388-0	8	6,500	52,000	25	100%	1,300,000	0.143	186
Total	29		1,921,800			48,045,000		6,870

Appendix C

Daily PE2 for Fermentation Tanks

Daily PE2 for Fermentation Tanks

Bear Creek Winery

N-96, 1133555

Permit Unit	Tank Capacity	Emission Factor lb-VOC/day per 1000 gallons tank capacity	DailyPotential to Emit lb-VOC/day
N-96- 360 -0	210,000	1.62	340.2
N-96- 361 -0	210,000	1.62	340.2
N-96- 362 -0	210,000	1.62	340.2
N-96- 363 -0	210,000	1.62	340.2
N-96- 364 -0	160,000	1.62	259.2
N-96- 365 -0	160,000	1.62	259.2
N-96- 366 -0	160,000	1.62	259.2
N-96- 367 -0	160,000	1.62	259.2
N-96- 368 -0	51,000	1.62	82.6
N-96- 369 -0	51,000	1.62	82.6
N-96- 370 -0	51,000	1.62	82.6
N-96- 371 -0	51,000	1.62	82.6
N-96- 372 -0	46,000	1.62	74.5
N-96- 373 -0	46,000	1.62	74.5
N-96- 374 -0	13,400	1.62	21.7
N-96- 375 -0	13,400	1.62	21.7
N-96- 376 -0	13,400	1.62	21.7
N-96- 377 -0	13,400	1.62	21.7
N-96- 378 -0	13,400	1.62	21.7
N-96- 379 -0	13,400	1.62	21.7
N-96- 380 -0	13,400	1.62	21.7
N-96- 381 -0	6,500	1.62	10.5
N-96- 382 -0	6,500	1.62	10.5
N-96- 383 -0	6,500	1.62	10.5
N-96- 384 -0	6,500	1.62	10.5
N-96- 385 -0	6,500	1.62	10.5
N-96- 386 -0	6,500	1.62	10.5
N-96- 387 -0	6,500	1.62	10.5
N-96- 388 -0	6,500	1.62	10.5

Appendix D

Annual PE2 for Fermentation Tanks

Post Project Potential to Emit, N-1133555

Fermentation Operation

Basis:

All operation is white wine fermentation

Each tank is limited to 6 fermentation turns per season (year)

Tank fill is 95% of nominal volume rating for white wine

The white wine emission factor is 2.5 lb-VOC/1000 gallons wine production

Bear Creek N-1133555								
Permit Unit	# tanks	Nominal volume Each Gallons	Total Nominal Volume Gallons	Fermentation Cycles per Year	% Tank Fill for White Wine	Annual White Wine Production gallons	Emission Factor lb-VOC/1000 gal	Annual Emissions lb
360-0 to 363-0	4	210,000	840,000	6	95%	4,788,000	2.5	11,970
364-0 to 367-0	4	160,000	640,000	6	95%	3,648,000	2.5	9,120
368-0 to 371-0	4	51,000	204,000	6	95%	1,162,800	2.5	2,907
372-0 to 373-0	2	46,000	92,000	6	95%	524,400	2.5	1,311
374-0 to 380-0	7	13,400	93,800	6	95%	534,660	2.5	1,337
381-0 to 388-0	8	6,500	52,000	6	95%	296,400	2.5	741
Total	29		1,921,800			10,954,260		27,386

Appendix E

Federal Major Modification Calculations

Federal Major Modification Calculations

A. Basis

- Since winery tanks are not truly independent emissions units, the Net Emission Increase (NEI_{NEW}) for new tanks which are added to an existing winery with a Specific Limiting Condition (SLC) is considered to be the increase in the PE of all tanks in the facility resulting from adding the proposed new tanks to the SLC:

  $PE2_{NEW} = PE2_{ALL\ TANKS} - PE1_{ALL\ TANKS}$

- New winery tanks will be added to the existing Specific Limiting Conditions (SLC) which limits combined annual fermentation and storage emissions for all wine fermentation and storage tanks at the facility. A summary of the winery tanks at the facility is given in the following table:

Type of Wine Tank	Pre-Project		Proposed New Tanks		Post Project	
White wine fermentation and storage tanks	67	2,449,580	29	1,921,800	96	4,371,380
Red wine fermentation and storage tanks	37	2,556,972	0	0	37	2,556,972
Red wine fermentation tanks	10	310,000	0	0	10	310,000
Wine storage tanks (red wine or white wine)	242	7,531,931	0	0	242	7,531,931
Total:	356	12,848,483	29	1,921,800	385	14,770,283

- Annual Potential to Emit for VOC emissions from the fermentation and storage operation at the facility will be calculated generally using the method specified in the District's FYI-296, *Calculation of the Potential to Emit for VOC Emissions from Wine Fermentation and Storage Operations (attached in Appendix E)*. However, the calculation method of FYI-296 allows consideration of the facility's pressing or crushing capacity as a potential operating limitation. While this consideration is applicable to establishing a Specific Limiting Condition for the annual Potential to Emit for all tanks at a facility, it is not applicable to calculating PE2 for added tanks for purposes of determination of a Federal Major Modification since the pressing and/or the pressing capacity are not limited by permits and thus may be increased at any time without consideration of NSR impact. Therefore, the facility's pressing or crushing potential will be conservatively ignored and only the new tank capacity will be considered in the calculations.

- The proposed new tanks are combined storage and white wine fermentation tanks. An additional SLC has been proposed by the applicant which limits the new fermentation operation in each tank to 6 white wine fermentation turns per season. This limitation is included in the analysis since it effectively limits the potential production of wine for the facility.

- Maximum ethanol content of stored wine is 16.0 volume%.

- All storage tanks are insulated and equipped with pressure/vacuum relief valves. Therefore the emission factors given in District FYI-114 for wine storage operations are applicable.

B. Emission Factors

The required emission factors for fermentation and storage operations are taken from District FYI-114, *Estimating VOC Emissions from Winery Tanks (SEE Appendix D)*:

White Wine Fermentation
Annual: 2.5 lb-VOC/1000 gallons annual throughput

Wine Storage Working Losses from insulated tanks @ 16% Ethanol per District FYI-114:
Annual: 0.143 lb-VOC/1000 gallons annual throughput

C. Calculations

1. Pre-Project Potential to Emit (PE1)

The combined Pre-Project Potential to Emit for the proposed new fermentation capacity is determined in the following sequence of calculations:

a. Potential fermentation emissions from the white wine production scenario are considered first, assuming the facility produces 100% white wine:

White wine production capacity is determined based only on the production capacity of the wine fermentation tanks:

W_W = White wine production capacity (gallons per year as measured immediately after pressing) is the lesser of the following four calculations:

W1 = production capacity based on crusher capacity – **not applicable, see assumptions**

W2 = production capacity based on pressing capacity – **not applicable, see assumptions**

$W3 = (V_{FW} \times F_W \times D_w) / W_{FW}$ (limited by white fermenter volume)

$W4 = (V_T \times D_w) / R_{TW}$ (limited by overall tank processing volume)

where,

D_w = days in a white wine crush season = 120 days
W_{FW} = White fermentation period = 10 days
F_W = Fill factor for white wine fermentation = 95%
R_{TW} = Total winery retention time for white wine, 40 + 10 = 50 days
V_{FW} = Total volume of white wine fermenters = 2,449,580 gallons
V_T = Total Storage Cooperage = 9,981,511 gallons

Potential white wine fermentation emissions are then determined by applying the white fermentation emission factor stated in FYI-114:
$PE_{whitefermentation} = E_{fw} \times W_W$

E_{fw} = white wine emission factor = 2.5 lb-VOC/1000 gal

Performing the above calculations yields

W1 = Not applicable

W2 = Not applicable

W3 = 27.9 MG/year (million gals/year)

W4 = 24.0 MG/year

Selecting W_W = W4 = 24.0 MG/year and applying the emission factor for white wine fermentation yields:

$PE_{whitefermentation}$ = 60,000 lb-VOC/year

Storage emissions are then calculated for white wine operation per District FYI-114:

$PE_{storage} = E_s \times T \times W_W$

Where:

E_s = wine storage annual emission factor based on District FYI-114 = 0.143 lb-VOC/1000 gallons of wine transferred for 16% alcohol wine at a facility located in the Northern Region;

T = Total post fermentation inter-tank transfers per batch of wine = 8

W_W = maximum quantity of white wine the facility can produce = 24.0 million gallons per year

$PE_{storage}$ = (0.143/1000) x 8 x 24,000,000 = 27,456 lb-VOC/year

The PE for white wine production is then taken as the sum of the fermentation and storage potentials for white wine:

PE_{white} = 60,000 + 27,456 = 87,456 lb-VOC/year

b. Pursuant to District Policy FYI 296, potential emissions from red wine production are subsequently determined. Since this project authorizes white wine

production only, there will be no increase from red wine production; therefore, potential emissions from red wine production will not be required for this project.

Therefore,

$PE1_{tanks}$ = $PE1_{white}$ = 87,456 lb-VOC/year

2. Post-Project Potential to Emit (PE2)

The combined Post-Project Potential to Emit for the facility including the proposed new tanks is determined in the following sequence of calculations:

a. Potential fermentation emissions from the white wine production scenario are considered first, assuming the facility produces 100% white wine:

White wine production capacity is determined based only on the production capacity of the wine fermentation tanks:

W_W = White wine production capacity (gallons per year as measured immediately after pressing) is the lesser of the following four calculations:

W1 = production capacity based on crusher capacity – **not applicable, see assumptions**

W2 = production capacity based on pressing capacity – **not applicable, see assumptions**

W3 = Pre-project white fermentation production capacity + maximum capacity of proposed new tanks. Given a total new tank capacity of 1,921,800 gallons limited to 6 fermentation turns per year, maximum new production capacity = 6 x 1,921,800 = 11.5 million gallons.

W4 = $(V_T \times D_w) / R_{TW}$ (limited by overall tank processing volume)

where,

D_w = days in a white wine crush season = 120 days
W_{FW} = White fermentation period = 10 days
F_W = Fill factor for white wine fermentation = 95%
R_{TW} = Total winery retention time for white wine, 40 + 10 = 50 days
V_{FW} = Total volume of white wine fermenters = 4,371,380 gallons
V_T = Total Storage Cooperage = 11,903,311 gallons

Potential white wine fermentation emissions are then determined by applying the white fermentation emission factor stated in FYI-114:
$PE_{whitefermentation} = E_{fw} \times W_W$
E_{fw} = white wine emission factor = 2.5 lb-VOC/1000 gal

Performing the above calculations yields

W1 = Not applicable

W2 = Not applicable

W3 = 27.9 MG/year + 11.5 MG/year (million gals/year)

W3 = 39.4 MG/year

W4 = 28.6 MG/year

Selecting W_W = W4 = 28.6 MG/year and applying the emission factor for white wine fermentation yields:

$PE_{whitefermentation}$ = 71,500 lb-VOC/year

Storage emissions are then calculated for white wine operation per District FYI-114:

$PE_{storage} = E_s \times T \times W_W$

Where:

E_s = wine storage annual emission factor based on District FYI-114 = 0.143 lb-VOC/1000 gallons of wine transferred for 16% alcohol wine at a facility located in the Northern Region;

T = Total post fermentation inter-tank transfers per batch of wine = 8

W_W = maximum quantity of white wine the facility can produce = 28.6 million gallons per year

$PE_{storage}$ = (0.143/1000) x 8 x 28,600,000 = 32,718 lb-VOC/year

The PE for white wine production is then taken as the sum of the fermentation and storage potentials for white wine:

PE_{white} = 71,500 + 32,718 = 104,218 lb-VOC/year

b. As discussed above, since this project authorizes white wine production only, there will be no increase from red wine production; therefore, potential emissions from red wine production will not be required for this project.

Therefore,

$PE2_{tanks} = PE2_{white}$ = 104,218 lb-VOC/year

Federal Major Modification Increase:

$NEI_N = PE2_{tanks} - PE1_{tanks}$

NEI_N = 104,218 – 87,456 = 16,762 lb-VOC/year

Appendix F

BACT Guideline 5.4.14 and Top Down BACT Analysis

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 5.4.14*

Last Update 10/6/2009

Wine Fermentation Tank

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Temperature-Controlled Open Top Tank with Maximum Average Fermentation Temperature of 95 deg F	1. Capture of VOCs and Thermal Oxidation or Equivalent (88% control) 2. Capture of VOCs and Carbon Adsorption or Equivalent (86% control) 3. Capture of VOCs and Absorption or Equivalent (81% control) 4. Capture of VOCs and Condensation or Equivalent (81% control)	

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

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

Top Down BACT Analysis for Wine Fermentation VOC Emissions for Permit Units N-1237-670-0 through '693-0

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse guideline 5.4.14, 3rd quarter 2013, identifies achieved in practice BACT for wine fermentation tanks as follows:

1) Temperature-Controlled Open Top Tank with Maximum Average Fermentation Temperature of 95 deg F

The SJVUAPCD BACT Clearinghouse guideline 5.4.14, 3rd quarter 2013, identifies technologically feasible BACT for wine fermentation tanks as follows:

1) Capture of VOCs and thermal oxidation or equivalent (88% control)
2) Capture of VOCs and carbon adsorption or equivalent (86% control)
3) Capture of VOCs and absorption or equivalent (81% control)
4) Capture of VOCs and condensation or equivalent (81% control)

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 or catalytic oxidation or equivalent	88%(**)
2	Capture of VOCs and carbon adsorption or equivalent	86%
3	Capture of VOCs and absorption or equivalent	81%
4	Capture of VOCs and condensation or equivalent	81%
5	Temperature-Controlled Open Top Tank with Maximum Average Fermentation Temperature of 95 deg F	Baseline (Achieved-in-Practice)

(*) Capture efficiency (90%) x removal efficiency for control device.
(**) Following recent District practice, thermal and catalytic oxidation will be ranked together.

Step 4 - Cost Effectiveness Analysis

A cost-effective analysis is performed for each control technology which is more effective than meeting the requirements of option 5 (achieved-in-practice BACT), as proposed by the facility.

General Basis and Assumptions

- The proposed new tanks in this project consist of groups of tank sizes ranging from 6,500 gallon capacity each up to 210,000 gallons each. This BACT analysis will be first performed based on considering only the largest 210,000 gallon tanks (N-96-360-0 to '-363-0). If it is shown that a particular technology is not cost effective for the largest

tanks, it is then assumed that it will not be cost effective for the smaller tanks (since the potential emissions are linear with tank size and there will be a loss of economy of scale for smaller sizes).

- Annual uncontrolled fermentation PE for permit units N-96-360-0 to '-363-0 is 11,979 lb/year per Appendix C.

- Maximum CO2 flow rate from each tank is 483 cfm at 60 F per a proprietary model provided by E & J Gallo based on a white wine fermentation at 60 F and an initial sugar concentration of 20 °Brix.

- It is assumed all 4 fermentation tanks can reach maximum flow simultaneously. The design rate for the capture and control system is therefore 4 x 483 = 1,932 cfm.

Capture of VOCs and condensation (> 81% collection & control)

Basis and Assumptions: Evaluation of this option is based on the EcoPAS technology which is the only condensation technology known to the District which is both commercially available and which has been developed specifically for control of emissions from wine fermentation tanks. Pricing for the refrigerated condenser option was obtained from EcoPAS under District project N-1131615. In that project, EcoPAS submitted a budgetary estimate to control 24 red wine fermentation tanks using four proprietary PAS control units. Each PAS unit was dedicated to a bay of six fermentation tanks. The units operate based on a small backpressure on the tanks and do not require induced draft fans. Chilled glycol/water is supplied from the winery central facility for condensing the ethanol vapor. The four units proposed for that project did not have sufficient capacity to actually control all 24 tanks under a scenario where all tanks reached maximum fermentation rate at the same time. Instead, the design relied upon variability of operation in the tanks as well as planned staging of the fermentation operations to ensure that the capacity of control devices would not be exceeded during operation.

- For purposes of the analysis, it will be assumed that the EcoPAS design for project N-1131615, relying upon variability of operation in the tanks as well as planned staging of the fermentation operations to ensure that the capacity of control devices will not be exceeded during operation, is valid and workable. This is a conservative assumption since the applicant has stated that such a design basis would not be suitable and that the flow capacity of any connected control device must necessarily be capable of handling a simultaneous maximum flow from all connected tanks.
- The EcoPAS equipment pricing and capital investment requirements developed for District Project N-1131615 (Gallo Livingston) will be factored as required to develop a cost effectiveness analysis for this project
- To develop a Purchased Equipment Cost (PEC) for each project, the Base PEC from N-1131615 will be considered the Base Estimate and the PEC for this project ("New") will be developed by factoring the Base PEC by the ratio of project capacity with an exponent of 0.6 $[(Capacity_{new}/Capacity_{base})^{0.6}]$ where "Capacity" refers to the adjusted total nominal volume of all tanks included in the analysis (commonly referred to the "6-

tenths Rule", traditionally employed to extrapolate equipment costs from one capacity to a different capacity) .

- Since the tanks in this project are white fermenters versus the red fermenter considered in base project N-1131615, the capacity of white fermentation tanks must be adjusted to an equivalent red fermenter flow basis in order to recognize 1) that the peak flow from white fermentation is substantially less than that of red fermentation per gallon of fermenting must and 2) that the maximum percentage fill of the tank for white fermentation is greater than that for red fermentation (more gallons of must will be in the tank when conducting a white fermentation).
- Peak CO_2 flow for red fermentation is 43.5 lb-CO_2/hour per 1000 gallons of fermenting must as calculated by the Gallo kinetic model and based on an 80F fermentation with starting sugar = 20 °Brix
- Peak CO_2 flow for white fermentation is 15.9 lb-CO_2/hour per 1000 gallons of fermenting must as calculated by the Gallo kinetic model and based on an 60F fermentation with starting sugar = 20 °Brix
- Peak flow from a white fermenter is therefore 15.9/43.5 = 36.2% of that from a red fermenter per 1000 gallons of fermenting must.
- Maximum percentage fill of a red fermenter is 80% versus 95% for a white fermenter. Therefore, the maximum gallons of must fermenting in a white fermentation tank of a given size is 95%/80% = 119% of the maximum gallons of red must.
- The unadjusted capacity for this analysis is based on four 210,000 gallon white fermentation tanks = 4 x 210,000 = 840,000 gallons. Adjusting this value to an equivalent red fermenter yields:

  Adjusted Capacity = 840,000 gallons x 36.2% x 119% = 361,855 gallons

- The parameters of the current evaluation are compared with the Base Project in the following table:

Summary of Comparative Parameters		
Project Number	**N-1131615**	**N-1133555**
Facility	**Gallo (Base Project)**	**Bear Creek**
Fermentation Type	Red	White
No of Tanks	24	4
Individual Tank Capacity gallons	56,000	210,000
Project Capacity gallons	1,344,000	840,000
Adjusted project Capacity, gallons	1,344,000	361,855

- The quoted capture and control efficiency of the EcoPAS system has been stated to be 90% based on limited small-scale pilot testing. Given that the unit operation has not been fully demonstrated at this time, the District will consider the average control efficiency of the unit to be only 81% for purposes of this project, consistent with the District's BACT Guideline for this class and category source.
- Controlled emissions are calculated as:

  11,970 x 81%/2,000 = 4.8 tons

- The Base Project included $10,000 in direct cost for each EcoPAS unit as an allowance for PLC control and data logging which was a site specifc requirement for that facility. The applicant for this project has not indicated this to be a requirement at this time and therefore it will be conservatively assumed that the PLC cost is not applicable to this project.
- In the Base Project, EcoPAS provided site-specific installation costs for the proposed scope of supply. The installation costs from that analysis will be factored by the ratio of adjusted project capacity to establish installation costs for this project.
- Engineering costs will be assumed to be 5% of total direct cost exclusive of city/county plan check costs.
- An allowance of 10,000 is included to cover all permitting costs including County planning and building department costs.
- Due to the unsteady state operation of fermentation tanks, initial source testing is expected to be a significant technical operation with significant expense, conducted over the fermentation cycle rather than the typical three 30-minute steady state measurements. A cost of $15,000 will be assumed for initial source testing.
- Owner's costs are included at 6% of Total Direct Cost up to a maximum of $100,000.
- Project contingency is included at 20% of Total Capital Investment based on good engineering practice and accepted estimating norms of the engineering industry. .

- Operating labor is estimated based on 1 operator hour per shift and 3 shifts per day, operating unit over a 90 day crush season and an hourly cost of $18.50 per hour.
- An allowance for annual maintenance cost was included as 1% of Total Capital Investment.
- The cost of a chiller system has been annualized and the annualized cost is estimated at $270 per ton of recovered ethanol based on approximately $85 per ton energy charge at $0.13/kWh and $100 per ton capital charge for the central chilled water facility (based on a District analysis of annualized costs for a 100 ton mechanical chiller).
- Annual source testing will be required. It is assumed that only one representative unit will require testing each year. An annual charge of $15,000 has been included.
- Recovered ethanol is estimated at approximately 1,224 gallons per year based on 60 proof (3,003 lb/year (uncontrolled fermentation emissions) x 81% x gal/6.62 lb ÷ 0.30). The recovered 60 proof is conservatively assumed to have a value of $25 per gallon based on statements by EcoPAS.
- Annualized Capital Investment = Initial Capital Investment x Amortization Factor

$$\text{Amortization Factor} = \left[\frac{0.1(1.1)^{10}}{(1.1)^{10}-1}\right] = 0.1627, \text{ amortizing over 10 years at 10\%}$$

Annualized Capital Investment = Initial Capital Investment x 0.163

Total Capital Investment for Refrigerated Condenser:

Total Capital Investment is presented in the following table along with the estimate from the Base Project:

Total Capital Investment		
TCI - Direct Costs (DC)	**N-1131615**	**N-1133555**
Purchased equipment cost (inc frgt & sales tax)	$1,901,272	$865,218
PLC, Data, Software	$40,000	N/A
Foundations & supports (not required)	-	
Handling & erection	$140,775	$37,902
Electrical (not required)	-	
Piping (not included)		
Painting (not required)	-	
Insulation (not required)	-	
Subcontracts	$18,000	$4,846
Direct installation costs	**$198,775**	**$42,748**
Total Direct Costs	**$2,100,047**	**$907,966**
TCI - Indirect Costs (IC)		
Engineering	$105,002	$45,398
Plan check/Building Permits	$10,000	$10,000
Initial Source Testing	$60,000	$15,000
Owner's Cost	$100,000	$54,478
Total Indirect Costs	**$275,002**	**$124,876**
Subtotal Cap Inv	**$2,375,049**	**$1,032,842**
Owner's Contingency 20%	$475,010	$206,568
Total Capital Investment (TCI) (DC + IC)	**$2,850,059**	**$1,239,411**

Total Annual Cost and Cost Effectiveness

The Total Annual Cost, including the recovered ethanol credit is presented in the following table along with the cost effectiveness calculation. As indicated in the table, the evaluated cost effectiveness exceeds the District's Guideline of $17,500/ton-VOC. Therefore this option is not cost-effective and will not be considered for this project.

Total Annual Cost & Cost Effectiveness		
Direct Costs	**N-1131615**	**N-1133555**
Operator (2 hours/unit/day, 90 days, $18.50/hour)	$19,980	$3,330
Supervisor (15% of Operator)	$1,998	$500
Maintenance		
Labor (1% of TIC)	$28,501	$12,394
Utility		
Chiller (Glycol) - $270/ton recovered ethanol	$9,280	$328
Electricity (none required)	$0	$0
Total DC	**$59,759**	**$16,552**
Indirect Annual Cost (IC)		
Overhead (60% of labor and maintenance)	$30,287.16	$9,734
Annual Source test	$15,000	$15,000
Administrative Charge (2% TCI)	$57,001	$24,788
Property Taxes (1% TCI)	$28,501	$12,394
Insurance (1% TCI)	$28,501	$12,394
Total IC	$159,290	$74,311
Recovery Credits (RC)		
60 Proof Recovered	$70,349	$30,614
Annual Cost (DC + IC – RC)	**$148,699**	**$60,248**
Annualized TCI (0.163 x TCI)	$463,705	$201,652
Total Annual Costs	$612,404	$261,900
Tons Control	34.370	4.8
CE $ per ton	**$17,818**	**$54,562**
Cost Effective?	**NO**	**NO**

Collection of VOCs and control by absorption (> 81% collection & control)

Basis and Assumptions: Evaluation of this option is based on the NoMoVo technology (NohBell Corporation) which is the only absorption technology (refrigerated water scrubber) known to the District which is both commercially available and which has been developed specifically for control of emissions from wine fermentation tanks. Pricing for the refrigerated water scrubber was obtained from NohBell Corporation under District project N-1131615. In that project, NohBell submitted a budgetary estimate to control 24 red wine fermentation tanks using eighteen proprietary NoMoVo control units. Each NoMoVo unit was dedicated to a single tank although NohBell has stated that a single unit may control more than one unit at a time and that the 18 units would be capable of controlling all 24 tanks considering variability of operation in the tanks as well as planned staging of the fermentation operations to ensure that the capacity of control devices would not be exceeded during operation. The units operate based on a small backpressure on the tanks and do not require induced draft fans. Chilled glycol/water is supplied from a chiller/pump package supplied with each control unit.

- For purposes of the analysis, it will be assumed that the NohBell design for project N-1131615, relying upon variability of operation in the tanks as well as planned staging of the fermentation operations to ensure that the capacity of control devices will not be exceeded during operation, is valid and workable. This is a conservative assumption since the applicant has stated that such a design basis would not be suitable and that the flow capacity of any connected control device must necessarily be capable of handling a simultaneous maximum flow from all connected tanks.
- The NohBell equipment pricing and capital investment requirements developed for District Project N-1131615 (Gallo Livingston) will be factored as required to develop a cost effectiveness analysis for this project
- To develop a Purchased Equipment Cost (PEC) for each project, the Base PEC from N-1131615 will be considered the Base Estimate and the PEC for this project ("New") will be developed by factoring the Base PEC by the ratio of project capacity with an exponent of 0.6 $[(Capacity_{new}/Capacity_{base})^{0.6}]$ where "Capacity" refers to the adjusted total nominal volume of all tanks included in the analysis (commonly referred to the "6-tenths Rule", traditionally employed to extrapolate equipment costs from one capacity to a different capacity) .
- Since the tanks in this project are white fermenters versus the red fermenter considered in base project N-1131615, the capacity of white fermentation tanks must be adjusted to an equivalent red fermenter flow basis in order to recognize 1) that the peak flow from white fermentation is substantially less than that of red fermentation per gallon of fermenting must and 2) that the maximum percentage fill of the tank for white fermentation is greater than that for red fermentation (more gallons of must will be in the tank when conducting a white fermentation).
- Peak CO_2 flow for red fermentation is 43.5 lb-CO_2/hour per 1000 gallons of fermenting must as calculated by the Gallo kinetic model and based on an 80F fermentation with starting sugar = 20 °Brix
- Peak CO_2 flow for white fermentation is 15.9 lb-CO_2/hour per 1000 gallons of fermenting must as calculated by the Gallo kinetic model and based on an 60F fermentation with starting sugar = 20 °Brix

- Peak flow from a white fermenter is therefore 15.9/43.5 = 36.2% of that from a red fermenter per 1000 gallons of fermenting must.
- Maximum percentage fill of a red fermenter is 80% versus 95% for a white fermenter. Therefore, the maximum gallons of must fermenting in a white fermentation tank of a given size is 95%/80% = 119% of the maximum gallons of red must.
- The unadjusted capacity for this analysis is based on four 210,000 gallon white fermentation tanks = 4 x 210,000 = 840,000 gallons. Adjusting this value to an equivalent red fermenter yields:

  Adjusted Capacity = 840,000 gallons x 36.2% x 119% = 361,855 gallons

- The parameters of the current evaluation are compared with the Base Project in the following table:

Summary of Comparative Parameters		
Project Number	**N-1131615**	**N-1133555**
Facility	**Gallo (Base Project)**	**Bear Creek**
Fermentation Type	Red	White
No of Tanks	24	4
Individual Tank Capacity gallons	56,000	210,000
Project Capacity gallons	1,344,000	840,000
Adjusted project Capacity, gallons	1,344,000	361,855

- The quoted average capture and control efficiency of the NohBell system has been stated to be 81% which is consistent with the District's BACT Guideline for this class and category source.
- Controlled emissions are calculated as:

  11,970 x 81%/2,000 = 4.8 tons

- The Base Project included $10,000 in direct cost for each NohBell unit as an allowance for PLC control and data logging which was a site specifc requirement for that facility. The applicant for this project has not indicated this to be a requirement at this time and therefore it will be conservatively assumed that the PLC cost is not applicable to this project.
- In the Base Project, technology-specific installation cost factors were established and formed the basis of that estimate. The installation costs from that analysis will be factored by the ratio of adjusted project capacity to establish installation costs for this project:

- Instrumentation allowance of $2,000 per NoMoVo unit has been included for a pressure transmitter and a temperature transmitter for monitoring pressure of the collection header and vent stream and temperature from the NoMoVo unit.
- Sales tax = 8.225% based on California location
- Foundations and supports: not required – unit is supported from either a tank or the pipe rack structure. Equipment price includes required attachments and clips.
- Since the units are mobile which are ready for operation upon delivery, Handling and Erection is taken to be 2% of Purchased Equipment Cost as an allowance for pre-commissioning.
- Piping is taken to be 1% of Purchased Equipment Cost based on the only requirements being Tee fittings for the tank discharge.
- Insulation and painting are not required.

- Installed cost for a 20,000 gallon waste ethanol solution storage tank is included in the estimate. Total direct cost for installation of a 22,000 gallon tank is estimated based on 2003 costs published by the State of Michigan, UIP 11[1] for welded steel water tanks. UIP 11 indicates an installed cost 0f $30,000 (2003 dollars). The total direct cost of the tank includes typical tank ancillaries such as roof, ladders, painting, fittings on tank, etc., plus the tank foundation. Escalating this cost to 2014 at 2.75% per year, the current direct cost of the tank is determined to be $40,400.
- Engineering costs will be assumed to be 5% of total direct cost exclusive of city/county plan check costs.
- An allowance of 10,000 is included to cover all permitting costs including County planning and building department costs.
- Due to the unsteady state operation of fermentation tanks, initial source testing is expected to be a significant technical operation with significant expense, conducted over the fermentation cycle rather than the typical three 30-minute steady state measurements. A cost of $15,000 will be assumed for initial source testing.
- Owner's costs are included at 6% of Total Direct Cost up to a maximum of $100,000.
- Project contingency is included at 20% of Total Capital Investment based on good engineering practice and accepted estimating norms of the engineering industry. .
- Operating labor is estimated based on 2 operator hours per unit per day, operating units over a 90 day crush season and an hourly cost of $18.50 per hour. For purposes of the estimate, a total of 5 NoMoVo units are assumed to be required.
- An allowance for annual maintenance cost was included as 1% of Total Capital Investment.
- Connected electrical load for each NoMoVo unit is 2.5 horsepower which is assumed to operate continuously for 90 days.
- Electric power cost = $0.102/kWh (see regenerative thermal oxidizer Top Down BACT Analysis section below)
- Captured ethanol is recovered as a 10% solution suitable for disposal to an ethanol distillery at a cost of $0.08 per gallon.
- Annual source testing will be required. It is assumed that only one representative unit will require testing each year. An annual charge of $15,000 has been included.
- Annualized Capital Investment = Total Capital Investment x Amortization Factor

[1] State of Michigan, UIP 11, Tanks, www.michigan.gov/documents/Vol2-35UIP11Tanks_121080_7.pdf, . 2003. S4

Amortization Factor = $\left[\frac{0.1(1.1)^{10}}{(1.1)^{10}-1}\right]$ = 0.1627, amortizing over 10 years at 10%

Annualized Capital Investment = Initial Capital Investment x 0.163

Total Capital Investment for Refrigerated Water Scrubber:

Total Capital Investment is presented in the following table along with the estimate from the Base Project:

Total Capital Investment		
Purchased equipment cost (inc frgt & sales tax) - **PEC**	**$1,354,934**	$616,594
PLC, Data, Software	$180,000	N/A
Foundations & supports (not required)	-	
Handling & erection - 2% PEC	$27,099	$12,332
Electrical 1% PEC	$13,549.34	$6,166
Piping 1% PEC	$13,549	$6,166
Painting (not required)	-	
Insulation (not required)	-	
Recovered Ethanol Tank - Allowance	$40,000	$40,400
Direct installation costs	**$274,197**	**$65,064**
Total Direct Costs	**$1,629,131**	**$681,658**
TCI - Indirect Costs (IC)		
Engineering 5% DC	$81,457	$34,083
Construction and field expenses 2% DC	$32,583	$13,633
Contractor fees 2% DC	$32,583	$13,633
Start-up 1%	$16,291	$6,817
Plan check/Building Permits	$10,000	$10,000
Initial Source Testing	$20,000	$15,000
Owner's Cost (6% DC to Max. of $100,000)	$100,000	$40,899
Total Indirect Costs	**$292,913**	**$134,065**
Subtotal Cap Inv	**$1,922,044**	**$815,723**
Owner's Contingency 20%	$384,409	$163,145
Total Capital Investment (TCI) (DC + IC)	**$2,306,453**	**$978,868**

Total Annual Cost and Cost Effectiveness

The Total Annual Cost, including the recovered ethanol credit is presented in the following table along with the cost effectiveness calculation. As indicated in the table, the evaluated cost effectiveness exceeds the District's Guideline of $17,500/ton-VOC. Therefore this option is not cost-effective and will not be considered for this project.

Total Annual Cost & Cost Effectiveness		
Direct Costs		
Operator ($18.50/hr, 2 hours/unit/day, 90 days)	$66,600	$16,650
Supervisor (15% of Operator)	$10,490	$2,498
Maintenance		
Labor (1% of TIC)	$23,065	$9,789
Wastrewater Disposal		
10% solution, $0.08 per gallon	$8,307	$1,172
Utility		
Chiller (Glycol) - none required		
Electricity 2.5 hp/unit, 2160 hr/yr, 0.102/kWh	$7,393	$2,054
Total DC	**$115,855**	**$32,163**
Indirect Annual Cost (IC)		
Overhead (60% of labor and maintenance)	$60,092.72	$17,362
Annual Source test	$15,000	15000
Administrative Charge (2% TCI)	$46,129	$19,577
Property Taxes (1% TCI)	$23,065	$9,789
Insurance (1% TCI)	$23,065	$9,789
Total IC	$167,351	$71,517
Recovery Credits (RC)		
60 Proof Recovered	$0	$0
Annual Cost (DC + IC – RC)	**$283,205**	**$103,680**
Annualized TCI TCI x 0.163	$375,260	$159,556
Total Annual Costs	$658,465	$263,236
Tons Control	34.370	4.800
CE $ per ton	**$19,158**	**$54,840**
Cost Effective?	**NO**	**NO**

Collection of VOCs and control by carbon adsorption (> 86% collection and control)

The proposed new tanks consist of groups of tank sizes ranging from 6,500 gallon capacity each up to 210,000 gallons each. This BACT analysis will be first performed based on considering only the 210,000 gallon tanks. If it is shown that carbon adsorption is not cost effective for these tanks, it will be assumed that it will not be cost effective for the smaller tanks (since the potential emissions are linear with tank size and there will be a loss of economy of scale for smaller sizes).

Basis and Assumptions

- Annual uncontrolled fermentation PE for permit units N-96-360-0 to '-363-0 is 11,970 lb/year per Appendix C.

- Since this facility is not equipped with a boiler for regeneration of activated carbon, the analysis will be based on using 2000 lb non-regenerable fixed-bed absorbers (canisters).

- The carbon adsorption system (CAS) is assumed to consist of a 2-row array of non-regenerable absorbers with each row of absorbers containing sufficient carbon to adsorb the maximum daily PE of the four fermentation tanks.

- Maximum CO2 flow rate from each tank is 483 cfm at 60 F per a proprietary model provided by E & J Gallo based on a white wine fermentation at 60 F and an initial sugar concentration of 20 °Brix.

- It is assumed all 4 fermentation tanks can reach maximum flow simultaneously. The design rate for the CAS and its supply duct is therefore 4 x 483 = 1,932 cfm.

- The CAS is assumed to be located at grade, approximately 25 feet from the nearest tank. The 4 fermentation tanks are 30' diameter and 40' tall each and are arranged in a square array per the applicant's plot plan. Based on this, duct branch connections to each tank are estimated at 25 feet long and the main header is determined to be a minimum of 100 feet long.

- Maximum duct velocity is limited to 40 feet per second to minimize pressure on the tanks. Based on this criterion, the duct connection to each tank is determined to be 6" diameter and the main header is determined to be 12" diameter.

- The collection system consists of stainless steel plate ductwork (stainless steel is required due to food grade product status) with isolation valving connecting the four proposed 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.

- Direct cost of ductwork is taken from the Eichleay Study.[2] The following pricing is applicable to ductwork and includes labor and materials (pricing is estimated to be approximately 50% labor, 50% materials):

- 6" ductwork: $61.50 per linear foot
- 12" ductwork: $144 per linear foot
- Allowance for duct supports: $4,000 per tank
- Isolation valves $2,125 each

- Pricing of the CAS is based on the EPA Air Pollution Control Cost Manual (APCCM).[3]

- Carbon utilization is assumed to be 20%.

- Maximum daily emissions from each fermentation tank are 1.62 lb-VOC per 1000 gallons of tank capacity per District's FYI-114. Total daily emissions to the CAS are therefore 4 x 210,000 x 1.62/1000 = 1,361 lb-VOC/day.

- At a carbon utilization of 20%, the minimum amount of carbon in each absorber row is 1,361/20% = 6,804 lb. Therefore each row will consist of four non-regenerable absorbers, or a total of eight absorbers in the array.

- Purchase cost of a 2000 lb carbon absorber vessel is $7,800 (1999 dollars) per the APCCM.

- Delivery and installation of a 2000 lb carbon absorber vessel is $4,600 (1999 dollars) per the APCCM.

- Escalation is assumed on all costs at 2.75% per year. Carbon absorber costs in 2014 (15 year escalation) are therefore:

- Purchase: $7,800 x 1.0275^{15} = $11,700 each
- Delivery and Installation: $4,600 x 1.0275^{15} = $6,900 each

- Capital investment will be evaluated based only on ductwork. Other costs which are recognized but not included in this evaluation are 1) knock out drum, fan and vent stack

[2] Eichleay Engineers, Fermenter VOC Emissions Control Cost Estimate, 2005.

[3] U.S.EPA Air Pollution Control Cost Manual, Section 3, Chapter 1, Carbon Absorbers.

for the CAS, 2) piping, instrumentation, electrical and all other direct and indirect costs associated with the CAS and 3) Clean-in-Place (CIP) system for sanitizing the ductwork

- Evaluation of annual operating costs will be based only on the supply and installation of non-regenerable carbon beds. Other costs which are recognized but not included in this evaluation are 1) operating labor and maintenance, 2) disposal costs for the spent carbon and 3) all other direct and indirect costs associated with operation of the CAS.

Capital Investment Required Based on Ductwork Only

Direct Costs			
	Qty	Unit Direct Cost	Direct Cost Extension
6" ductwork	100	$61.50	$6,150
12" ductwork	100	$144.00	$14,400
Tank Isolation Valves	4	$2,125.00	$8,500
Duct Supports	4	$4,000.00	$16,000
Subtotal Direct Cost (2005 dollars)			$45,050
Escalation at 2.75%			$12,458
Total Direct Cost (DC)			$57,508
-			
Indirect Costs			
Engineering 10% of DC			$5,751
Construction and field expenses 5% DC			$2,875
Contractor fees 10% DC			$5,751
Start-up 2% DC			$901
Contingency 10% DC			$5,751
Total Indirect Costs (IC)			$21,029
Total Capital Investment for Ductwork (DC+IC)			**$78,537**

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,

Annualized Capital Investment = $78,537 x 0.163 = $12,800 per year

Annual Operating Cost Based on Carbon Absorber Purchase Only

VOC adsorbed annually = 86% x 11,970 = 10,294 lb-VOC/year

Annual carbon requirement at 20% carbon utilization = 10,294/20% = 51,470 lb-Carbon/year

Number of carbon beds per year = 51,470/2,000 = 26 carbon absorbers/year

Annual purchase cost for absorbers = 26 x $11,700 = $304,200
Delivery and installation cost for absorbers = 26 x $6,900 = $179,400

Annual absorber cost ($/year):

Absorber Purchase:	$304,200
Sales Tax on Absorbers (8.5%):	$25,900
Delivery and Installation:	$179,400
Total:	$509,500

Total Annual Cost = Annualized Capital Investment + Annual Operating Cost

Total Annual Cost =_$12,800 + $509,500 = $522,300

Uncontrolled fermentation PE for proposed ATCs N-96-360-0 to '-363-0 is 11,970 lb-VOC/year.

Annual Emission Reduction = Uncontrolled Emissions x 0.70
= 11,970 lb-VOC/year x 0.86
= 10,294 lb-VOC/year
= 5.1 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

Cost Effectiveness = $522,300/year ÷ 5.1 tons-VOC/year
= $102,400/ton-VOC

The analysis demonstrates that the annualized cost based only on the capital investment for ductwork plus the annual carbon absorber replacement cost alone results in a cost effectiveness which exceeds the District's Guideline of $17,500/ton-VOC. Therefore this option is not cost-effective and will not be considered for this project.

Collection of VOCs and control by thermal or catalytic oxidation (> 88% collection & control)

The proposed new tanks consist of groups of tank sizes ranging from 6,500 gallon capacity each up to 210,000 gallons each. This BACT analysis will be first performed based on considering only the 210,000 gallon tanks. If it is shown that thermal oxidation is not cost

effective for these tanks, it will be assumed that it will not be cost effective for the smaller tanks (since the potential emissions are linear with tank size and there will be a loss of economy of scale for smaller sizes).

Basis and Assumptions

- Annual uncontrolled fermentation PE for permit units N-96-360-0 to '-363-0 is 11,970 lb/year per Appendix C.

- The thermal oxidizer is assumed to be a regenerative thermal oxidizer (RTO) with 95% fuel efficiency.

- Maximum CO2 flow rate from each tank is 483 cfm at 60 F per a proprietary model provided by E & J Gallo based on a white wine fermentation at 60 F and an initial sugar concentration of 20 °Brix.

- It is assumed all 4 fermentation tanks can reach maximum flow simultaneously. The design rate for the RTO and its supply duct is therefore 4 x 483 = 1,932 cfm.

- The RTO is assumed to be located at grade, approximately 25 feet from the nearest tank. The 4 fermentation tanks are 30' diameter and 40' tall each and are arranged in a square array per the applicant's plot plan. Based on this, duct branch connections to each tank are estimated at 25 feet long and the main header is determined to be a minimum of 100 feet long.

- Maximum duct velocity is limited to 40 feet per second to minimize pressure on the tanks. Based on this criterion, the duct connection to each tank is determined to be 6" diameter and the main header is determined to be 12" diameter.

- The collection system consists of stainless steel plate ductwork (stainless steel is required due to food grade product status) with isolation valving connecting the four proposed 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.

- Direct unit costs of ductwork are taken from the Eichleay Study.[4] The following pricing is applicable to ductwork and includes labor and materials (pricing is estimated to be approximately 50% labor, 50% materials):

[4] Eichleay Engineers, Fermenter VOC Emissions Control Cost Estimate, 2005.

6" ductwork:	$61.50 per linear foot
12" ductwork:	$144 per linear foot
Allowance for duct supports:	$4,000 per tank
Isolation valves	$2,125 each

- Total installed cost of the ductwork is $78,537 as presented in the analysis for carbon adsorption.

- Pricing of the RTO is based pricing obtained in the Sonoma Technologies study.[5] The data of that study has been fit with a power curve for purposes of interpolation [$Cost_{2003} = 22,860 \times (Flow)^{0.23525}$]. Based on this curve, price of a 1930 cfm RTO is estimated at $135,600 (2003 dollars).

- Escalation is assumed on all costs at 2.75% per year. RTO cost in 2014 (11 year escalation) is therefore:
  $\$135,600 \times 1.0275^{11} = \$182,700$

- Capital investment will be evaluated based only on the RTO and ductwork. Other costs which are recognized but not included in this evaluation are 1) knock out drum to prevent wine reaching the RTO, 2) Clean-in-Place (CIP) system for sanitizing the ductwork and 3) site specific costs for utilities (natural gas and electric power).

- Total Capital Investment and Annual Operating Costs are presented per the cost model given by the EPA Air Pollution Control Cost Manual (APCCM).[6] Some of the cost factors have been modified to reflect good engineering practice and/or local conditions.

- Natural gas consumption will be based on a 95% efficient RTO operating for 90 days. No credit for the fuel value of ethanol is considered since the ethanol rate will tend to be highly variable, occurring primarily in spikes during fermentation peak operating points.

- Unit price of natural gas is $7.71/MMBtu[7].

- Electric power consumption is computed for the RTO fan based on the maximum CO2 vent rate from the tanks plus a 50% allowance for combustion air. Assumed parameters for the fan are 10" water column differential pressure, 60% static efficiency, 90% electric motor efficiency, 90 days full time operation.

- Electricity cost is $.102/kWh.[8]

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[5] Sonoma Technology, Inc., Control Technology Evaluation: Wineries – Fermentation Processes, Control Measures Assessment STI-903340-2429a-CMA, October 21, 2003..
[6] U.S.EPA Air Pollution Control Cost Manual, Section 3.2, Chapter 2, Incinerators.
[7] Energy Information Administration/Natural Gas; Average Price of Natural Gas Sold to Commercial Consumers by State, 2011 - 2012
[8] Energy Information Administration/Electric Power; Average Retail Price of Electricity to Ultimate Customers by End-Use Sector, by State, 2011 - 2012

Capital Investment for the RTO

Total Capital Investment for Thermal Oxidizer		
Direct Costs		
Purchased Equipment Costs		
Oxidizer (A)		$182,700
Instrumentation 10% A		$18,269
Sales Tax 8.5% A		$15,528
Freight 5% A		$9,134
Purchased Equipment Cost (PEC)		$225,619
Direct Installation Costs		
Foundations & Supports 8% PEC		$18,050
Handling & Erection 14% PEC		$31,587
Electrical 4% PEC		$9,025
Piping 2% PEC		$4,512
Insulation 1% PEC		$2,256
Painting 1% PEC		$2,256
Direct Installation Cost		$67,686
Total Direct Cost DC		$293,305
Indirect Costs		
Engineering 10% DC		$29,331
Construction and Field Expense 5% DC		$14,665
Contractor Fees 10% DC		$29,331
Startup 2% DC		$5,866
Performance Test 1% DC		$2,933
Contingency 10% DC		$29,331
Total Indirect Cost IC		$111,456
Total Capital Investment DC + IC		**$404,800**

Total Capital Investment Including Ductwork

The Total Capital Investment (TCI) for this option is the sum of that for the RTO plus that for the ductwork:

TCI = $78,800 + 78,537 = ≈483,300

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,

Annualized Capital Investment = $483,300 x 0.163 = $78,800 per year

Annual Costs

Annual Costs for Themal Oxidizer		
Direct Annual Costs		
Operating Labor		
Operator (.5 hr/shift)		$2,498
Supervisor (15% of operator)		$375
Maintenance (1% TCI)		$4,833
Utilities		
Natural Gas		$1,548
Electricity		$2,655
Total Direct Cost DC		$11,908
Indirect Annual Costs		
Overhead (60% of labor and maintenance)		
Administrative charges (2% TCI)		$8,096
Property Taxes (1% TCI)		$4,833
Insurance (1% TCI)		$4,833
Capital Recovery (CRF x TCI)		$78,784
Total Indirect Cost IC		$96,547
Total Annual Cost (DC + IC)		**$108,455**

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

Uncontrolled fermentation PE for proposed ATCs N-96-360-0 to '-363-0 is 11,970 lb-VOC/year per Appendix C.

Annual Emission Reduction = Uncontrolled Emissions x 0.70
= 11,970 lb-VOC/year x 0.95
= 11,370 lb-VOC/year
= 5.7 tons-VOC/year

Cost Effectiveness = $108,455/year ÷ 5.7 tons-VOC/year
= $19,027/ton-VOC

The analysis demonstrates that the annualized cost (without consideration of requirements for a knock out drum, CIP system or site-specific cost) results in a cost effectiveness which exceeds the District's Guideline of $17,500/ton-VOC. Therefore this option is not cost-effective and will not be considered for this project.

Appendix G

BACT Guideline 5.4.13 and Top Down BACT Analysis

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 5.4.13*

Last Update 10/6/2009

Wine Storage Tank

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)	

**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 ot diurnal temperature variations. Tanks made entirely of non-conducting materials such as concrete and wood (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 s a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

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

Top Down BACT Analysis for Wine Storage VOC Emissions for Permit Units N-1237-662-0 through '669-0

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse guideline 5.4.13, 3rd quarter 2013, 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.
   ***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.*

The SJVUAPCD BACT Clearinghouse guideline 5.4.13, 3rd quarter 2013, 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)

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 or catalytic oxidation or equivalent	98%
2	Capture of VOCs and carbon adsorption or equivalent	95%
3	Capture of VOCs and absorption 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)

Step 4 - Cost Effectiveness Analysis

A cost-effective analysis is performed for each control technology which is more effective than meeting the requirements of District Rule 4694 plus tank insulation (achieved-in-practice BACT), as proposed by the facility.

Basis and Assumptions

- The proposed new tanks consist of groups of tank sizes ranging from 6,500 gallon capacity each up to 210,000 gallons each. This BACT analysis will be first performed based on considering only the 210,000 gallon tanks. If it is shown that a control device is not cost effective for these tanks, it will be assumed that it will not be cost effective for the smaller tanks (since the potential emissions are linear with tank size and there will be a loss of economy of scale for smaller sizes).

- All control options share an identical requirement for a collection system.

- The common collection system consists of stainless steel plate ductwork (stainless steel is required due to food grade product status) with isolation valving, connecting four 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. The main header is twelve inches diameter to handle the potential for simultaneous venting.

- The Total Capital Investment for the system described above has been determined to be $78,537 (see Appendix D, "Collection of VOCs and control by carbon adsorption (> 86% collection and control)"

- For a storage operation, the maximum vent rate from a tank is equal to the maximum liquid fill rate. A typical winery general purpose pump is assumed to be equipped with a 20 hp electric motor. Based on an electric motor efficiency of 90%, a centrifugal pump efficiency of 65% and a differential head of 22 psi (40' hydrostatic head plus 5 psi dynamic loss), maximum vent rate from each tank is determined to be 122 cfm. Total simultaneous rate from all four tanks is 4 x 122 = 488 scfm.

- Rated design capacity of all control devices is established at 110% of the maximum flow rate or 488 x 110% = 537 cfm (typical overdesign margin for process equipment)

- Escalation of cost data to 2014 is included in all cost estimates at an average annual rate of 2.75%.

Capture of VOCs and thermal or catalytic oxidation or equivalent (98%)

Capital Investment for Control Device

The control device is assumed to be a thermal oxidizer (TO) with a 50% recuperative heat recovery. Purchase price for the TO is calculated from correlated cost data presented in the U.S. EPA Air Pollution Control Cost Manual[9]. Per the EPA correlation, RTO costs (1999 dollars) are given by:

$Cost_{1999} = 17{,}056 \times Q^{0.2502}$,

where Q is the rated flow capacity in cfm.

The TO purchase price is determined in 2014 dollars as follows:

$Cost_{2014} = (1.0275)^{15} \times 17{,}056 \times 537^{0.2502}$

$Cost_{2014} = \$123{,}500$

Total Capital Investment (TCI)

Total Capital Investment is calculated based only on the capital investment for ductwork and the purchase price of the TO, ignoring all other costs.

TCI = capital investment for ductwork + purchase price of control device

TCI = \$78,537 + \$123,500 = \$202,037

Annualized Capital Costs

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,

Annualized Capital Investment = \$202,037 x 0.163 = \$ 32,932

Total Annual Cost

Total Annual Cost is evaluated based only on the Annualized Capital Investment:

Total Annual Cost = Annualized capital investment = \$32,932

[9] U.S. EPA Air Pollution Control Cost Manual, Section 3.2, Chapter 2 (Incinerators)

Emission Reductions

Annual Emission Reduction = Uncontrolled Emissions x 0.98
= 3,003 lb-VOC/year x 0.98
= 2,943 lb-VOC/year
= 1.5 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

Cost Effectiveness = $32,932/year ÷ 1.5 tons-VOC/year

= $21,954/ton-VOC

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

Capture of VOCs and carbon adsorption or equivalent (95%)

The control device is assumed to consist of 2000 lb non-regenerable fixed-bed absorbers (canisters) which represent a reoccurring annual cost rather than a capital investment cost.

Total Capital Investment (TCI)

Total Capital Investment is calculated based only on the capital investment for ductwork, ignoring all other costs.

TCI = capital investment for ductwork

TCI = $78,537

Annualized Capital Costs

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,

Annualized Capital Investment = $78,537 x 0.163 = $ 12,800

Total Annual Cost

Since this facility is not equipped with a boiler for regeneration of activated carbon, the Total Annual Cost will be based on the annual cost of using 2000 lb non-regenerable fixed-bed absorbers (canisters).plus the Annualized Capital Investment.

Fixed-bed absorbers cost:

VOC adsorbed annually = 90% x 3,003 = 2,853 lb-VOC/year

Annual carbon requirement at 20% carbon utilization = 2,853/20% = 14,264 lb-Carbon/year

Number of carbon beds per year = 14,264/2,000 = 7.13 carbon absorbers/year

Annual purchase cost for absorbers = 7.13 x $11,700 = $83,421
Delivery and installation cost for absorbers = 7.13 x $6,900 = $48,197

Annual absorber cost ($/year):

Absorber Purchase:	$83,421
Sales Tax on Absorbers (8.5%):	$7,090
Delivery and Installation:	$48,197
Total:	$138,708

Total Annual Cost = Fixed bed absorber cost + Annualized capital investment

Total Annual Cost = $138,708 + $12,800 = $151,508

Emission Reductions

Annual Emission Reduction = Uncontrolled Emissions x 0.95
= 3,003 lb-VOC/year x 0.95
= 2,853 lb-VOC/year
= 1.4 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

Cost Effectiveness = $151,508/year ÷ 1.4 tons-VOC/year
= $108,220/ton-VOC

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

Capture of VOCs and absorption or equivalent (90%)

Total Capital Investment (TCI)

Evaluation of the absorption option is based on a conventional water scrubber system. It is assumed that the ethanol is absorbed into a water solution with a concentration of 2% ethanol which must be collected in an on-site storage tank and then trucked off-site for disposal. Total Capital Investment is calculated based only on the capital investment for the ductwork (collection system) and the ethanol solution storage tank plus the purchase price of the control device (water scrubber) ignoring all other costs.

Direct Cost for Ethanol Solution Storage Tank:

It is assumed that the tank is of sufficient size to hold the annual production of waste ethanol solution. Based on a 90% capture and control of the potential 3,003 lb-VOC/year, annual ethanol absorption is determined to be 2,703 lb/year or 408 gallons per year (6.62 lb/gal). Assuming a 2% by volume ethanol solution, the total annual waste ethanol solution production is 20,415 gal per year. Adding 10% overdesign capacity, the rated tank capacity is 22,500 gallons. Total direct cost for installation of a 22,500 gallon tank is estimated based on 2003 costs published by the State of Michigan, UIP 11[10] for welded steel water tanks. UIP 11 provides the following costs:

Tank Capacity, gallons	20,000	$30,000
Total Direct Cost	$35,000	$46,000

The total direct cost of the tank includes typical tank ancillaries such as roof, ladders, painting, fittings on tank, etc., plus the tank foundation. Interpolating the above cost based on a power law (Cost = A x Capacity^B, where A and B are constants), the direct cost for a 22,500 gallon tank is determined to be $37,900 (2003 dollars). Escalating this cost to 2014 at 2.75% per year, the current direct cost of the tank is determined to be $51,100.

Purchase Price for Control Device:

The control device is assumed to be a conventional water scrubber. Per 2003 budgetary pricing obtained by Sonoma Technologies[11] for water scrubbers:

500 cfm: $20,600
5000 cfm: $45,900

Fitting a power curve to these two points,

Interpolating the above cost based on a power law (Cost = A x Capacity^B, where A and B are constants), the direct cost for a 537 cfm control device is determined to be $21,100 (2003 dollars). Escalating this cost to 2014 at 2.75% per year, the current direct cost of the scrubber is determined to be $28,400.

TCI = capital investment for ductwork & ethanol storage + control device purchase price

TCI = $78,537 + $51,100 + $28,400 = $158,037

Annualized Capital Costs

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

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[10] State of Michigan, UIP 11, Tanks, www.michigan.gov/documents/Vol2-35UIP11Tanks_121080_7.pdf, . 2003.
[11] Sonoma Technology, Inc., Control Technology Evaluation: Wineries – Fermentation Processes, Control Measures Assessment STI-903340-2429a-CMA, October 21, 2003.

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,

Annualized Capital Investment = $158,037 x 0.163 = $ 25,800

Total Annual Cost

Total Annual cost will consider only the estimated cost of disposal of the waste ethanol solution plus the Annualized Capital Investment.

Waste Disposal Cost:

Disposal costs for waste ethanol solution are assumed at $0.25 per gallon consistent with the assumptions of the Sonoma Technologies Study10:

Waste Disposal Cost = 20,415 gal/year x $0.25/gal = $5,100 per year

Total Annual Cost = Waste Disposal Cost + Annualized Capital Investment

Total Annual Cost = $5,100+ $25,800 = $30,900

Emission Reductions

Annual Emission Reduction = Uncontrolled Emissions x 0.90
= 3,003 lb-VOC/year x 0.90
= 2,703 lb-VOC/year
= 1.4 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

Cost Effectiveness = $30,900/year ÷ 1.4 tons-VOC/year
= $22,070/ton-VOC

The analysis demonstrates that the annualized purchase costs of the required collection system ductwork and the ethanol waste storage tank plus the annual cost of ethanol waste disposal results in a cost effectiveness which exceeds the District's Guideline of $17,500/ton-VOC. Therefore this option is not cost-effective and will not be considered for this project.

Capture of VOCs and condensation or equivalent (70%)

Capital Investment for Control Device

Evaluation of the condensation option is based on a packaged refrigerated solvent recovery system (SRS). The SRS is assumed to be single stage unit with a -20F condensing temperature. .

The SRS rated capacity in tons of refrigeration is calculated based on cooling the vent stream from the maximum ambient temperature to the lowest temperature in the unit. The determined cooling duty is thus determined:

Maximum ambient temperature: 100 F
Minimum vent stream temperature: -12 F:
Molecular weight of vent stream: 29 (air)
Heat Capacity of Vent Stream: 0.25 Btu/lb

Duty in tons =(Flow x 60 x 28.8 x 0.25 x (100- (-12)))/(379.5 x 12,000)
Duty in tons =Flow x 0.0106
Duty in tons =537 cfm x 0.0106 = 5.69 tons

15% overdesign capacity is added to account for condensation of moisture and ethanol.

Rated duty (R): 5.69 x 115% = 6.5 tons

Per EPA Cost Manual[12]

For R <10 tons,

$Cost_{1990}$ = Exp(10.11 + 0.34 x ln(R))

$Cost_{1990}$ = $46,500

Escalating this cost to 2014 at 2.75% per year, the current direct cost of the package unit is determined to be $89,400.

Total Capital Investment for the packaged unit is based on the cost model presented in the APCCM[11], modified to reflect site specific conditions and good engineering practice:

[12] U.S. EPA Air Pollution Control Cost Manual, Section 3.1, Chapter 2 (Refrigerated Condensers)

Total Capital Investment for Package Solvent Recovery Unit		
Direct Costs		
Purchased Equipment Costs		
Oxidizer (A)		$89,400
Instrumentation 10% A		$8,940
Sales Tax 8.5% A		$7,599
Freight 5% A		$4,470
Purchased Equipment Cost (PEC)		$110,409
Direct Installation Costs		
Foundations & Supports 8% PEC		$8,833
Handling & Erection 14% PEC		$15,457
Electrical 8% PEC		$8,833
Piping 2% PEC		$2,208
Insulation 10% PEC		$11,041
Painting 1% PEC		$1,104
Direct Installation Cost		$47,476
Total Direct Cost DC		$157,885
Indirect Costs		
Engineering 10% DC		$15,788
Construction and Field Expense 5% DC		$7,894
Contractor Fees 10% DC		$15,788
Startup 2% DC		$3,158
Performance Test 1% DC		$1,579
Contingency 10% DC		$15,788
Total Indirect Cost IC		$59,996
Total Capital Investment DC + IC		**$217,900**

Total Capital Investment (TCI) = capital investment for ductwork + capital investment for solvent recovery package

TCI = $78,537 + $217,900 = $296,400

Annualized Capital Costs

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,

Annualized Capital Investment = $296,400 x 0.163 = $ 48,300

Total Annual Cost

Total Annual Cost is evaluated based only on the Annualized Capital Investment: and the Recovery Credit (RC) for ethanol condensed.

Credit for Recovered Ethanol

Ethanol recovered from the condensation has byproduct value as ethanol still feed. Assuming recovery as 60-proof spirit and assuming a conservatively high valuation at $5.00 per gallon:

Gallons pure ethanol recovered = 318 gallons (2,102 lb at 6.62 lb/gal)

Gallons 60 proof recovered = 1,058 gallons

Recovery credit (RC) at $5.00/gallon = $5,290

Total Annual Cost = Annualized capital investment – RC = $32,932 - $5,290 = $27,642

Emission Reductions

Annual Emission Reduction = Uncontrolled Emissions x 0.70
= 3,003 lb-VOC/year x 0.98
= 2,102 lb-VOC/year
= 1.1 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Total Annual Cost ÷ Annual Emission Reductions

Cost Effectiveness = $27,642/year ÷ 1.1 tons-VOC/year
= $25,129/ton-VOC

The analysis demonstrates that the annualized purchase cost of the required collection system ductwork and the control device purchase price alone less credit for recovered ethanol results in a cost effectiveness which exceeds the District's Guideline of $17,500/ton-VOC. Therefore this option is not cost-effective and will not be considered for this project.

Step 5 - Select BACT

All identified feasible options with control efficiencies higher than the option proposed by the facility have been shown to not be cost effective. The facility has proposed Option 1, insulated tank, pressure/vacuum valve set within 10% of the maximum allowable working pressure of the tank, "gas tight" tank operation and achieve and maintain a continuous storage temperature not exceeding 75 ^{0}F within 60 days of completion of fermentation. These BACT requirements will be listed on the permits as enforceable conditions.

Appendix H

Compliance Certification

N-96
Bear Creek Winery
Compliance Certification Statement
For Federal Major Permit Modifications
Compliance with District Rule 2201, Section 4.15.2

I certify under penalty of law that all major stationary sources (Title V facilities) operated under my control in California are compliant with all applicable air emissions limitations and standards.

Craig Rous
(Signature)

Date: 2/14/14

Craig Rous
(Name)

Director of Operations
(Title)

Appendix I

COC Compliance Certification

San Joaquin Valley
Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

[X] SIGNIFICANT PERMIT MODIFICATION
[ ] MINOR PERMIT MODIFICATION
[ ] ADMINISTRATIVE AMENDMENT

COMPANY NAME: Goldstone Land LLC dba Bear Creek Winery	FACILITY ID: N-96
1. Type of Organization: [X] Corporation [ ] Sole Ownership [ ] Government [ ] Partnership [ ] Utility	
2. Owner's Name: Kurt Kautz Managing Partner	
3. Agent to the Owner: Craig Rous	

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

(CR) 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).

(CR) 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.

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

(CR) 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:

Craig Rous
Signature of Responsible Official

11/1/13
Date

Craig Rous
Name of Responsible Official (please print)

Director of Operations
Title of Responsible Official (please print)

Appendix J

Draft ATC Permits

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-96-360-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
210,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #718) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 30 feet in diameter and 40 feet in height with a proposed volume of 210,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

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

DAVID WARNER, Director of Permit Services
N-96-360-0 : Mar 24 2014 8:44AM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit

9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit

11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]

12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit

13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit

14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit

16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit

18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit

19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-96-361-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
210,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #719) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 30 feet in diameter and 40 feet in height with a proposed volume of 210,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

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

DRAFT

DAVID WARNER, Director of Permit Services
N-96-361-0 : Mar 20 2014 4:05PM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit
11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]
12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit
14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit
19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-96-362-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
210,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #726) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 30 feet in diameter and 40 feet in height with a proposed volume of 210,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

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

DRAFT

DAVID WARNER, Director of Permit Services
N-96-362-0 : Mar 20 2014 4:05PM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit
11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]
12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit
14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit
19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-96-363-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
210,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #727) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 30 feet in diameter and 40 feet in height with a proposed volume of 210,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

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

DRAFT

DAVID WARNER, Director of Permit Services
N-96-363-0 : Mar 20 2014 4:06PM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit
11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]
12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit
14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit
19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-96-364-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
160,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #709) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 25.5 feet in diameter and 40 feet in height with a proposed volume of 160,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

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

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DAVID WARNER, Director of Permit Services
N-96-364-0 : Mar 20 2014 4:06PM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit
11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]
12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit
14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit
19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-96-365-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
160,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #710) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 25.5 feet in diameter and 40 feet in height with a proposed volume of 160,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N-96-365-0 : Mar 20 2014 4:06PM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit
11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]
12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit
14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit
19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-96-369-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
51,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #702) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 14.5 feet in diameter and 40 feet in height with a proposed volume of 51,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

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

DAVID WARNER, Director of Permit Services
N-96-369-0 : Mar 20 2014 4:06PM – ROBERTSD : Joint Inspection NDT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit
11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]
12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit
14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit
19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-96-370-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
51,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #708) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 14.5 feet in diameter and 40 feet in height with a proposed volume of 51,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

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

DAVID WARNER, Director of Permit Services
N-96-370-0 : Mar 20 2014 4:06PM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit
11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]
12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit
14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit
19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-96-371-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
51,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #709) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 14.5 feet in diameter and 40 feet in height with a proposed volume of 51,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

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

DAVID WARNER, Director of Permit Services
N-96-371-0 : Mar 20 2014 4:06PM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit
11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]
12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit
14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit
19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-96-372-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
46,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #665) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 14.5 feet in diameter and 38 feet in height with a proposed volume of 46,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N-96-372-0 : Mar 20 2014 4:06PM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit
11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]
12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit
14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit
19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-96-373-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
46,000 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #666) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 14.5 feet in diameter and 38 feet in height with a proposed volume of 46,000 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

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

DAVID WARNER, Director of Permit Services
N-96-373-0 : Mar 20 2014 4:06PM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit
11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]
12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit
14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit
19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-96-374-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
13,400 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #735) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 10 feet in diameter and 24 feet in height with a proposed volume of 13,400 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

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

DAVID WARNER, Director of Permit Services
N-96-374-0 : Mar 20 2014 4:06PM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit

9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit

11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]

12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit

13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit

14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit

16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit

18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit

19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-96-375-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
13,400 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #736) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 10 feet in diameter and 24 feet in height with a proposed volume of 13,400 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

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

DRAFT

DAVID WARNER, Director of Permit Services
N-96-375-0 : Mar 20 2014 4:06PM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit

9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit

11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]

12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit

13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit

14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit

16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit

18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit

19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-96-376-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
13,400 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #737) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 10 feet in diameter and 24 feet in height with a proposed volume of 13,400 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

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

DAVID WARNER, Director of Permit Services
N-96-376-0 : Mar 20 2014 4:06PM -- ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit
11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]
12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit
14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit
19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-96-377-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
13,400 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #738) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 10 feet in diameter and 24 feet in height with a proposed volume of 13,400 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

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

DAVID WARNER, Director of Permit Services
N-96-377-0 : Mar 20 2014 4:06PM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit

9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit

11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]

12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit

13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit

14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit

16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit

18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit

19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-96-378-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
13,400 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #739) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 10 feet in diameter and 24 feet in height with a proposed volume of 13,400 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

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

DRAFT

DAVID WARNER, Director of Permit Services
N-96-378-0 : Mar 20 2014 4:06PM -- ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit

9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit

11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]

12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit

13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit

14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit

16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit

18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit

19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-96-379-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
13,400 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #740) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 10 feet in diameter and 24 feet in height with a proposed volume of 13,400 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

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

DAVID WARNER, Director of Permit Services
N-96-379-0 : Mar 20 2014 4:06PM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit
11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]
12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit
14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit
19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-96-380-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
13,400 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #741) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 10 feet in diameter and 24 feet in height with a proposed volume of 13,400 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DRAFT

DAVID WARNER, Director of Permit Services
N-96-380-0 : Mar 20 2014 4:06PM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit
11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]
12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit
14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit
19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-96-381-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
6,500 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #728) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 6 feet in diameter and 24 feet in height with a proposed volume of 6,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

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

DRAFT

DAVID WARNER, Director of Permit Services
N-96-381-0 : Mar 20 2014 4:06PM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit

9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit

11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]

12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit

13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit

14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit

16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit

18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit

19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-96-382-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
6,500 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #729) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 6 feet in diameter and 24 feet in height with a proposed volume of 6,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

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

DAVID WARNER, Director of Permit Services
N-96-382-0 : Mar 20 2014 4:06PM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit

9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit

11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]

12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit

13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit

14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit

16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit

18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit

19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-96-383-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
6,500 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #730) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 6 feet in diameter and 24 feet in height with a proposed volume of 6,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

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

DAVID WARNER, Director of Permit Services
N-96-383-0 : Mar 20 2014 4:06PM -- ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit

9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit

11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]

12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit

13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit

14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit

16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit

18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit

19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-96-384-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
6,500 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #731) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 6 feet in diameter and 24 feet in height with a proposed volume of 6,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
N-96-384-0 : Mar 20 2014 4:06PM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit

9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit

11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]

12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit

13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit

14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit

16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit

18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit

19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-96-385-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
6,500 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #732) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 6 feet in diameter and 24 feet in height with a proposed volume of 6,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

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

DAVID WARNER, Director of Permit Services
N-96-385-0 : Mar 20 2014 4:06PM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit
8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit
11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]
12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit
13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit
14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit
19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-96-386-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
6,500 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #733) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 6 feet in diameter and 24 feet in height with a proposed volume of 6,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

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

DRAFT

DAVID WARNER, Director of Permit Services
N-96-386-0 : Mar 20 2014 4:06PM -- ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit

9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit

11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]

12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit

13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit

14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit

16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit

18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit

19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-96-387-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
6,500 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #734) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 6 feet in diameter and 24 feet in height with a proposed volume of 6,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
N-96-387-0 : Mar 20 2014 4:06PM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit

9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit

11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]

12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit

13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit

14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit

16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit

18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit

19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-96-388-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: BEAR CREEK WINERY
MAILING ADDRESS: 11900 N FURRY RD
LODI, CA 95240

LOCATION: 11900 N FURRY RD
LODI, CA 95240

EQUIPMENT DESCRIPTION:
6,500 GALLON STAINLESS STEEL WHITE WINE FERMENTATION AND STORAGE TANK (TANK #735) WITH PRESSURE/VACUUM VALVE AND INSULATION

CONDITIONS

1. The nominal tank dimensions are 6 feet in diameter and 24 feet in height with a proposed volume of 6,500 gallons. The permittee shall submit to the District the gauge volume of the tank within 30 days of the actual tank capacity measurement. [District Rule 2201] Federally Enforceable Through Title V Permit
2. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
3. The daily VOC emission rate for fermentation shall not exceed 1.62 lb/1,000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201] Federally Enforceable Through Title V Permit
5. When used for wine storage, 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
6. When this tank is used for wine storage, 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

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services
N-96-388-0 : Mar 20 2014 4:06PM – ROBERTSD : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

8. The ethanol content of wine stored in this tank shall not exceed 16.0 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit

9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twenty-five (25) times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit

10. Fermentation operations in this tank shall not exceed 6 turns per year. [District Rule 2201] Federally Enforceable Through Title V Permit

11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either white wine or red wine. [District Rule 4694]

12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694] Federally Enforceable Through Title V Permit

13. When this tank is used for wine storage, 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 1070 and 2201] Federally Enforceable Through Title V Permit

14. Annual emissions from all wine fermentation and storage tanks, calculated on a twelve month rolling basis, shall not exceed the following limit: VOC - 242,165 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit

15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1,000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1,000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit

16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

17. Total annual VOC emissions from wine storage operations shall be determined as the sum of the product of the volume of wine transferred in each wine movement and the batch-specific wine storage VOC emission factor calculated using the equation specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit

18. The batch-specific wine storage VOC emission factor (EF), in pounds of VOC per 1,000 gallons of wine throughput, shall be calculated using the following equation: EF = 1.705259 * P^1.090407, where P is the volume percent ethanol of the wine being transferred. [District Rule 2201] Federally Enforceable Through Title V Permit

19. The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

20. If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

21. Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit

22. 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