



APR 19 2012

Mr. Paul Bement
The Wine Group
17000 E Highway 120
Ripon, CA 95366

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # N-956
Project # N-1113928**

Dear Mr. Bement:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. The applicant is requesting that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. This project is to install four 3,500 gallon (each) stainless steel wine fermentation and storage tanks.

After addressing any EPA comments made during the 45-day comment period, the Authorities to Construct will be issued to the facility with Certificates of Conformity. 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. Rupj Gill, Permit Services Manager, at (209) 557-6400.

Thank you for your cooperation in this matter.

Sincerely,



David Warner
Director of Permit Services

DW:JK/st

Enclosures

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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

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

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



APR 19 2012

Mike Tollstrup, Chief
Project Assessment Branch
Air Resources Board
P O Box 2815
Sacramento, CA 95812-2815

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # N-956
Project # N-1113928**

Dear Mr. Tollstrup:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. The applicant is requesting that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. This project is to install four 3,500 gallon (each) stainless steel wine fermentation and storage tanks.

Enclosed is the engineering evaluation of this application with a copy of the proposed Authorities to Construct # N-956-275-0 to '-278-0 with Certificates of Conformity. After demonstrating compliance with the Authorities to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 30-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Rupi Gill, Permit Services Manager, at (209) 557-6400.

Thank you for your cooperation in this matter.

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APR 19 2012

Gerardo C. Rios, Chief
Permits Office
Air Division
U.S. EPA - Region IX
75 Hawthorne St.
San Francisco, CA 94105

**Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # N-956
Project # N-1113928**

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authorities to Construct for The Wine Group located at 17000 E Highway 120, Ripon, which has been issued a Title V permit. The Wine Group is requesting that Certificates of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. This project is to install four 3,500 gallon (each) stainless steel wine fermentation and storage tanks.

Enclosed is the engineering evaluation of this application with a copy of the proposed Authorities to Construct # N-956-275-0 to '-278-0 with Certificates of Conformity. After demonstrating compliance with the Authorities to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Rupi Gill, Permit Services Manager, at (209) 557-6400.

Thank you for your cooperation in this matter.

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David Warner
Director of Permit Services

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**NOTICE OF PRELIMINARY DECISION
FOR THE ISSUANCE OF AUTHORITY TO CONSTRUCT AND
THE PROPOSED SIGNIFICANT MODIFICATION OF FEDERALLY
MANDATED OPERATING PERMIT**

NOTICE IS HEREBY GIVEN that the San Joaquin Valley Air Pollution Control District solicits public comment on the proposed significant modification of The Wine Group for its winery located at 17000 E Highway 120, Ripon, California. This project is to install four 3,500 gallon (each) stainless steel wine fermentation and storage tanks.

The District's analysis of the legal and factual basis for this proposed action, project #N-1113928, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and the District office at the address below. This will be the public's only opportunity to comment on the specific conditions of the modification. If requested by the public, the District will hold a public hearing regarding issuance of this modification. For additional information, please contact Mr. Rupi Gill, Permit Services Manager, at (209) 557-6400. Written comments on the proposed initial permit must be submitted within 30 days of the publication date of this notice to DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 4800 ENTERPRISE WAY, MODESTO, CA 95356-8718.

California Health & Safety Code 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 17000 E Highway 120, Ripon, California. This location is not within 1,000 feet of any K-12 school. Therefore, public notice under the California Health & Safety Code 42301.6 is not required.

IV. PROCESS DESCRIPTION

The Wine Group 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 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 CO₂. 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 CO₂ 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-956-275-0	3,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #9000 WITH INSULATION (OR PLACED INDOORS IN A CLIMATE CONTROLLED BUILDING OR EQUIVALENT) AND PRESSURE/VACUUM VALVE
N-956-276-0	3,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #9001 WITH INSULATION (OR PLACED INDOORS IN A CLIMATE CONTROLLED BUILDING OR EQUIVALENT) AND PRESSURE/VACUUM VALVE
N-956-277-0	3,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #9002 WITH INSULATION (OR PLACED INDOORS IN A CLIMATE CONTROLLED BUILDING OR EQUIVALENT) AND PRESSURE/VACUUM VALVE
N-956-278-0	3,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #9003 WITH INSULATION (OR PLACED INDOORS IN A CLIMATE CONTROLLED BUILDING OR EQUIVALENT) AND PRESSURE/VACUUM VALVE

The following table summarizes the number of tanks and wine processing capacity at this winery after this project.

Category		Category	Tanks	Capacity (gallons)
Pre-Project	PTO	White/red wine fermentation and storage tanks	224	51,235,000
	ATC		21	5,846,725
Addition of 4 tanks			4	14,000
Post-Project		Total:	249	57,095,725

VI. EMISSION CONTROL TECHNOLOGY EVALUATION

VOCs (ethanol) are emitted while a tank is being used to store wine. Working losses (occur when the liquid level in the tank changes) and breathing losses (due to the expansion and contraction effects due to temperature variations) would contribute to

the VOCs. The new tanks will be equipped with pressure/vacuum valves to reduce release of VOCs by requiring the maximum amount of variation in tank pressure before allowing the tank to vent to the atmosphere or allowing air admission to the tank. Furthermore, the tanks will either be insulated or located in a climate controlled building; thus, the breathing losses would be negligible.

VOCs (ethanol) are also emitted while a tank is being used as a fermenter. These emissions are practically reduced by maintaining an average fermentation temperature of 95°F.

VII. CALCULATIONS

A. Assumptions

- VOC is the only pollutant of concern related to this project.
- Wine processed in the proposed tanks contains a maximum of 23.9% alcohol by volume (per applicant).
- During wine storage, daily throughput will not exceed 4 times the maximum nominal tank capacity for each tank (per applicant's e-mail 3-21-12).
- Other assumptions will be stated as they are made for this project.

B. Emission Factors (EF)

1. Pre-Project Emission Factors (EF1)

The proposed winery tanks are new tanks; therefore, EF1 does not exist at this point.

2. Post-Project Emission Factors (EF2)

N-956-275-0 to '-278-0:

Type	Operation	EF1 (lb-VOC/1,000 gal of wine)		Source
		Daily	Annual	
White	Fermentation	1.62	2.5	District FYI -114 (Appendix V of this document)
	Storage	0.364	0.234	
Red	Fermentation	3.46	6.2	
	Storage	0.364	0.234	

C. Potential to Emit

1. Pre-Project Potential to Emit (PE1)

PE1 = 0 for all new tanks

2. Post-Project Potential to Emit (PE2)

Fermentation:

$$\begin{aligned} \text{PE2 (lb/day)} &= (3.46 \text{ lb-VOC}/1,000 \text{ gal})(3,500 \text{ gal/tank}) \\ &= 12.1 \text{ lb-VOC/day-tank} \end{aligned}$$

Storage:

$$\begin{aligned} \text{PE2 (lb/day)} &= (0.364 \text{ lb-VOC}/1,000 \text{ gal})(3,500 \text{ gal})(4 \text{ turnovers/day-tank}) \\ &= 5.1 \text{ lb-VOC/day-tank} \end{aligned}$$

The annual emissions from fermentation and storage operation are going to be a part of the pre-established SLC of 581,212 pounds of VOC per year for fermentation and storage operations.

3. Quarterly Emissions Changes (QEC)

This calculation is required for application's emission profile, which is used for the District's internal tracking purposes. Typically QEC are calculated as follows: $QEC = (PE2 - PE1) \text{ lb/year} \div 4 \text{ quarters/yr}$. The facility-wide VOC SLC remains unchanged. Therefore, QEC would be zero for each quarter.

4. Adjusted Increase in Permitted Emissions (AIPE)

AIPE is used to determine if BACT is required for emission units that are being modified. AIPE is calculated using the equations mentioned in Section 4.3 and 4.4 of Rule 2201.

$$AIPE = PE2 - \left(\frac{EF2}{EF1} \right) (PE1)$$

These tanks are new emission units. Therefore, AIPE calculations are not necessary.

D. Facility Emissions

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

Pursuant to Section 4.9 of District Rule 2201, SSPE1 is the Potential to Emit 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 (ERCs) which have been banked since September 19, 1991 for Actual Emissions Reductions (AERs) that have occurred at the source, and which have not been used on-site.

The potential VOC emissions from the permits covering fermentation and storage operations alone are above the Major Source thresholds of 20,000 pounds per year for VOC. Thus, this facility is a Major Source for VOC emissions.

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

Pursuant to Section 4.10 of 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.

The potential VOC emissions from the permits covering fermentation and storage operations alone will remain above the Major Source thresholds of 20,000 pounds per year for VOC after the proposed project. Thus, this facility is still a Major Source for VOC emissions.

3. Stationary Source Increase in Permitted Emissions (SSIPE)

There is no change in the facility's SLC. Therefore, SSIPE is equated to zero.

4. SB 288 Major Modification

The purpose of Major Modification calculations is to determine the following:

- A. If Best Available Control Technology (BACT) is triggered for a new or modified emission unit that results in a Major Modification (District Rule 2201, §4.1.3); and
- B. If a public notification is triggered (District Rule 2201, §5.4.1).

This facility is a Major Source for VOC emissions. In order to determine whether a Major Modification can be triggered, the Net Emissions Increase (NEI) is calculated and is compared with the Major Modification threshold limit of 50,000 lb-VOC/year.

Tanks operating in a winery are not truly independent emissions units. Therefore, the potential annual emissions must be established with consideration of all the other associated tanks in the facility. The potential to emit from the new tanks (PE_{2N}) is therefore determined as the difference between the post project and the pre project potential emissions from the wine production operation based on the collective physical capacity of the processing equipment at the facility.

$$NEI = PE2_N - HE$$

Since the tanks are new, historical emissions (HE) are equal to zero.

$$NEI = PE2_N$$

Per Appendix IV of this document, PE2_N based on the collective physical capacity of the processing equipment is equal to 323 pounds per year.

Thus,

$$NEI = 323 \text{ lb-VOC/yr}$$

NEI is not greater than 50,000 lb-VOC/yr. Therefore, the proposed project is not an SB 288 Major Modification for VOCs.

5. Federal Major Modification

The purpose of Federal Major Modification calculations is to determine the following:

- A. If a Rule-compliance project qualifies for District Rule 2201's Best Available Control Technology (BACT) and offset exemptions (District Rule 2201, §4.2.3.5); and
- B. If an Alternate Siting analysis must be performed (District Rule 2201, §4.15.1);
- C. If the applicant must provide certification that all California stationary sources owned, operated, or controlled by the applicant that are subject to emission limits are in compliance with those limits or are on a schedule for compliance with all applicable emission limits and standards; and
- D. If a public notification is triggered. (District Rule 2201, §5.4.1).

This facility is a Major Source for VOC emissions. In order to determine whether a Major Modification can be triggered, the Net Emissions Increase (NEI) is calculated and is compared with the Major Modification threshold limit of 0 lb-VOC/year.

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

$$NEI = PE2_N - BAE$$

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

$$NEI = PE2_N$$

Per Appendix IV of this document, PE_{2N} based on the collective physical capacity of the processing equipment is equal to 323 pounds per year. Thus,

$$\text{NEI} = 323 \text{ lb-VOC/yr}$$

NEI is greater than 0 lb-VOC/yr. Therefore, the proposed project is a Federal Major Modification for VOC.

VIII. COMPLIANCE

Rule 2201 New and Modified Stationary Source Review Rule

1. Best Available Control Technology (BACT)

BACT requirements shall be triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless exempted pursuant to Section 4.2, BACT shall be required for the following actions:

- Any new emissions unit or relocation from one Stationary Source to another of an existing emissions unit with a Potential to Emit (PE₂) exceeding 2.0 pounds in any one day;
- Modifications to an existing emissions unit with a valid Permit to Operate resulting in an Adjusted Increase in Permitted Emissions (AIPE) exceeding 2.0 pounds in any one day;
- Any new or modified emissions unit, in a stationary source project, which results in a Major Modification, as defined in this rule.

Storage:

Per section VII.C.2 of this document, PE₂ is greater than 2.0 pounds per day for VOC from each tank. Further, this project is a Federal Major modification to the stationary source per section VII.D.5 of this document. Thus, BACT is triggered for each tank when operated in a wine storage mode.

Pursuant to the "Top-Down BACT Analysis" in Appendix II of this document, BACT has been satisfied with the following:

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

The DEL for wine storage tanks will be stated in the equipment description as an "insulated" (or equal) tank and by placing the following conditions on the ATCs:

- 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 Rule 2201]
- 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 Rule 2201]
- 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 2201]

Fermentation:

Per section VII.C.2 of this document, PE2 is greater than 2.0 pounds per day for VOC from each tank. Further, this project is a Federal Major modification to the stationary source per section VII.D.5 of this document. Thus, BACT is triggered when a tank will be used in the fermentation process.

Pursuant to the "Top-Down BACT Analysis" in Appendix II of this document, BACT has been satisfied with the following:

VOC: Open tank vented to the atmosphere with the average fermentation temperature not exceeding 95°F.

The following conditions will be placed on the ATCs to ensure compliance with the BACT requirements:

- The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95°F, 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]
- 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 any 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 Rule 2201]

2. Offsets

This facility's total VOCs are above the offset threshold of 20,000 pounds per year. Therefore, offset calculations are required for this project.

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

$EOQ = \Sigma(PE2 - BE) + ICCE$, where

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

BE = Baseline Emissions (lb/yr)

ICCE = Increase in Cargo Carrier emissions (lb/yr)

There is no increase in Cargo Carrier emissions from this project. Thus,

$EOQ = \Sigma(PE2 - BE)$

The existing tanks, when operated in wine storage or fermentation mode, are Clean Emission Units since they meet the achieved-in-practice BACT requirements for wine storage and fermentation process¹. Thus, BE is set equal to PE1 for each tank.

$EOQ = \Sigma(PE2 - PE1)$

VOC emissions from the facility's fermentation and storage operations are limited to 581,212 pounds per year. Therefore,

$EOQ = (PE2_{SLC} - PE1_{SLC})$
 $= 581,212 \text{ lb-VOC/yr} - 581,212 \text{ lb-VOC/yr}$
 $= 0 \text{ lb-VOC/yr}$

Therefore, no offsets are required for this project.

¹Permits N-956-11-2 to '-202-2; '-203-1 to '-218-1 and '-236-0 to '-249-0 are processed under project N-1101336. This project explained that these tanks are insulated and are therefore, clean emission units. Further, permits under N-956-250-0 to '-271-0 processed under project N1110256 are determined to be clean emission unit after reviewing the supplemental application. Permits N-956-272 to '-274 are concrete tanks; they are considered self-insulating tanks, and are found to be clean emission units.

3. Public Notification

District Rule 2201, section 5.4, requires a public notification for the affected pollutants from the following types of projects:

- New Major Sources
- Federal Major Modifications
- SB 288 Major Modifications
- New emission units with a PE>100 lb/day of any one pollutant
- Modifications with SSPE1 below an Offset threshold and SSPE2 above an Offset threshold on a pollutant-by-pollutant basis
- New stationary sources with SSPE2 exceeding Offset thresholds
- Any permitting action with a SSIPE exceeding 20,000 lb/yr for any one pollutant

This project is a Federal Major Modification under Rule 2201. Therefore, a 30-day public notice is required for this project.

4. Daily Emission Limits (DELs)

The daily emissions limitations (DELs) and other enforceable conditions are required by Section 3.17 to restrict a unit's maximum daily emissions. The following conditions will be included in each permit:

- The daily VOC emissions rate for red wine fermentation shall not exceed 3.46 lb/1000 gallons. [District Rule 2201]
- The daily VOC emissions rate for white wine fermentation shall not exceed 1.62 lb/1000 gallons. [District Rule 2201]
- The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201]
- When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed four times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201]

5. Compliance Assurance

Source Testing

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

Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

Recordkeeping

For each storage tank, the facility will be required to keep daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, is required to be maintained along with records of the total gallons of wine contained in a tank and the maximum temperature of the stored wine.

For each batch of must fermented, the operation is required to keep records of 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 is required to be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine.

In addition, separate annual records each of total red wine and total 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, is required to be maintained.

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

Reporting

No reporting is required to demonstrate compliance with Rule 2201.

6. Ambient Air Quality Analysis

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

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

7. Additional Requirements for new Major Sources and Federal Major Modifications

Per Section 4.15 of Rule 2201, "Compliance Certification" and "Alternative Siting Analysis" is required for any project, which constitutes a New Major Source or a Federal Major Modification.

Compliance Certification

The owner of a new Major Source or a source undergoing a Federal Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or

are on a schedule for compliance with all applicable emission limitations and standards. The compliance certification from the facility is included in Appendix III of this document.

Alternative Siting Analysis

The current project occurs at an existing winery with a pre-project total wine tank volume of 57,081,725 gallons. The applicant proposes to install new winery tanks totaling 57,095,725 gallons in volume, which represents an increase of 0.02% of the existing total wine tank volume. 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 is expected to result in the least possible impact to the environment 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.

Compliance is expected with this Rule.

Rule 2520 Federally Mandated Operating Permits

The Wine Group possesses a Title V permit. The proposed project is considered a significant modification to the Title V permit. The following conditions will be included in each permit:

- This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule]
- Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4]

In accordance with Rule 2520, the application meets the procedural requirements of section 11.4 by including:

- A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs and
- The source's suggested draft permit (Appendix I of this document) and
- Certification by a responsible official that the proposed modification meets the criteria for use of major permit modification procedures and a request that such procedures be used (Appendix III of this document).

Section 5.3.4 of this rule requires the permittee shall file an application for administrative permit amendments prior to implementing the requested change except when allowed by the operational flexibility provisions of section 6.4 of this rule. The Wine Group is expected to notify the District by filing TV Form-008 upon

implementing the ATCs. The District Compliance Division is expected to submit a change order to implement ATCs into Permits to Operate.

Compliance is expected with this Rule.

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 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 storage tank operations.

Rule 4102 Nuisance

Section 4.0 prohibits discharge of air contaminants, which could cause injury, detriment, nuisance or annoyance to the public. The following condition will be placed on each permit:

- 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 in Section 44321 of the California Health and Safety Code. Therefore, health risk assessment is not necessary.

Compliance is expected with this Rule.

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.

On May 23, 2006, this facility submitted the RAER plan to achieve at least 35% of the winery's BFE. The plan includes using the CER resulting from the control of VOC emissions from brandy storage warehouses. The 2011 Annual Compliance (dated 1/18/2012) indicates that they achieve RAER equal to at least 35% of the winery's BSE. Therefore, the facility is operating in compliance with this section.

Section 5.2 places specific restrictions on wine storage tanks with 5,000 gallons or more in capacity when such tanks are not constructed of wood or concrete.

Section 5.2.1 requires these tanks to be equipped and operated with a pressure-vacuum relief valve meeting all of the following requirements:

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

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

The capacity of each tank is 3,500 gallons. Therefore, these tanks are not subject to the requirements in section 5.2.1 and 5.2.2.

Section 6.1 and 6.2 and 6.3 require the facility to submit a Three-Year Compliance Plan and Three-Year Compliance Plan Verification respectively. Section 6.3 requires that an Annual Compliance Plan Demonstration be submitted to the District no later than March 1 of each year to show compliance with the applicable requirements of the Rule. The facility-wide permit N-956-0-1, conditions 43 to 47, enforce on-going compliance with these sections.

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 condition will be placed on the ATCs to ensure on-going compliance with this section.

- All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rule 4694]

Section 6.4.1 requires that records be kept for each fermentation batch. The following condition will be placed on the ATCs 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. Therefore, the following conditions will be placed on the ATCs to ensure compliance with this section:

- 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 Rule 4694]
- 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]

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 facility-wide permit N-956-0-1, condition 47, enforces on-going compliance with this section.

Compliance is expected with this Rule.

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (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 San Joaquin Valley Unified Air Pollution Control District (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.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas Significance Determination

Terrestrial carbon sequestration is the process through which carbon dioxide (CO₂) from the atmosphere is absorbed by trees, plants and crops through photosynthesis, and stored as carbon in biomass (tree trunks, branches, foliage and roots) and soils. The term "sinks" is also used to refer to forests, croplands, and grazing lands, and their ability to sequester carbon. Agriculture and forestry activities can also release CO₂ to the atmosphere. Therefore, a carbon sink occurs when carbon sequestration is greater than carbon releases over some time period.

Grape vines sequester carbon from the atmosphere to produce biomass, including grapes. Much of the carbon sequestered in grapes is in the form of glucose, which has a molecular weight of 180.16 g mol⁻¹. CO₂ has a molecular weight of 44.01 g mol⁻¹. Fermentation yields two molecules of CO₂ per each molecule of glucose, resulting in a conversion ratio of 48.86 percent, by weight. While these emissions are real, the amounts of carbon remaining sequestered in biomass and residual sugars in wine result in an overall long-term carbon balance which is considered to be a carbon sink.

Furthermore, CO₂ emissions resulting from fermentation processes and CO₂ emissions released when grape biomass decays at a future date originates from atmospheric CO₂, which was absorbed by grape vines through photosynthesis. The, re-release of this short-term sequestered CO₂ into the atmosphere would not result in an overall increase in atmospheric CO₂. Thus, these biogenic CO₂ emissions are considered to be carbon neutral.

District CEQA Findings

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15031 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

IX. RECOMMENDATION

Compliance with all applicable regulations is expected. Therefore, issuance of ATCs is recommended upon addressing comments from the public, EPA, CARB, and the applicant.

X. BILLING INFORMATION

Permit Number	Fee Schedule	Fee Description	Previous Fee Schedule
N-956-275-0 to '-278-0	3020-05 A	3,500 gal	None

APPENDICES

- Appendix I: Draft ATC Permits
- Appendix II: BACT Guidelines and Top-Down BACT Analysis
- Appendix III: Compliance Certification
- Appendix IV: Potential Emissions Calculations
- Appendix V: District FYI - 114

Appendix I
Draft ATC Permits

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-956-275-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 1931
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:

3,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #9000 WITH INSULATION (OR PLACED INDOORS IN A CLIMATE CONTROLLED BUILDING OR EQUIVALENT) AND PRESSURE/VACUUM VALVE

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The daily VOC emissions rate for red wine fermentation shall not exceed 3.46 lb/1000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The daily VOC emissions rate for white wine fermentation shall not exceed 1.62 lb/1000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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

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-956-275-0 - Apr 3 2012 1:06PM - KAHLOJN : Joint Inspection NOT Required

6. 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 Rule 2201] Federally Enforceable Through Title V Permit
7. 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 Rule 2201] Federally Enforceable Through Title V Permit
8. 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 2201] Federally Enforceable Through Title V Permit
9. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
10. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed four times the maximum nominal tank capacity stated in the equipment description. [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 red wine or white wine. [District Rule 4694, 6.4.1]
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, 6.4.2]
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. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 581,212 lb. [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/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Total annual VOC emissions from wine storage operations shall be determined as the sum of the emissions for each individual wine movement based on the volume transferred in each wine movement and the batch-specific wine storage emission factor calculated using the equation(s) specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: $EF = a * P^2 + b * P + c$; where EF is the VOC emission factor in pounds of VOC per 1000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume %, $a = -4.5139E-5$, $b = 0.01088$ and $c = 0$. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 1070 and 2201] Federally Enforceable Through Title V Permit
19. Separate annual records of total red wine and total 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, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. 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

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-956-276-0

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 1931
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:

3,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #9001 WITH INSULATION (OR PLACED INDOORS IN A CLIMATE CONTROLLED BUILDING OR EQUIVALENT) AND PRESSURE/VACUUM VALVE

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The daily VOC emissions rate for red wine fermentation shall not exceed 3.46 lb/1000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The daily VOC emissions rate for white wine fermentation shall not exceed 1.62 lb/1000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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

CONDITIONS CONTINUE ON NEXT PAGE

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Seyed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services

N-956-276-0 : Apr 3 2012 1:06PM - KAHLDON : Joint Inspection, NOT Required

6. 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 Rule 2201] Federally Enforceable Through Title V Permit
7. 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 Rule 2201] Federally Enforceable Through Title V Permit
8. 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 2201] Federally Enforceable Through Title V Permit
9. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
10. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed four times the maximum nominal tank capacity stated in the equipment description. [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 red wine or white wine. [District Rule 4694, 6.4.1]
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, 6.4.2]
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. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 581,212 lb. [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/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Total annual VOC emissions from wine storage operations shall be determined as the sum of the emissions for each individual wine movement based on the volume transferred in each wine movement and the batch-specific wine storage emission factor calculated using the equation(s) specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: $EF = a * P^2 + b * P + c$; where EF is the VOC emission factor in pounds of VOC per 1000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume %, $a = -4.5139E-5$, $b = 0.01088$ and $c = 0$. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 1070 and 2201] Federally Enforceable Through Title V Permit
19. Separate annual records of total red wine and total 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, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. 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

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: N-956-277-0

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 1931

P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:

3,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #9002 WITH INSULATION (OR PLACED INDOORS IN A CLIMATE CONTROLLED BUILDING OR EQUIVALENT) AND PRESSURE/VACUUM VALVE

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The daily VOC emissions rate for red wine fermentation shall not exceed 3.46 lb/1000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The daily VOC emissions rate for white wine fermentation shall not exceed 1.62 lb/1000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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

CONDITIONS CONTINUE ON NEXT PAGE

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Sayed Sadredin, Executive Director, APCO

DAVID WARNER, Director of Permit Services

N-956-277-0, Apr 5 2012 1:07PM - KASHLOKJ : Joint Inspection NOT Required

6. 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 Rule 2201] Federally Enforceable Through Title V Permit
7. 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 Rule 2201] Federally Enforceable Through Title V Permit
8. 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 2201] Federally Enforceable Through Title V Permit
9. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
10. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed four times the maximum nominal tank capacity stated in the equipment description. [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 red wine or white wine. [District Rule 4694, 6.4.1]
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, 6.4.2]
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. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 581,212 lb. [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/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Total annual VOC emissions from wine storage operations shall be determined as the sum of the emissions for each individual wine movement based on the volume transferred in each wine movement and the batch-specific wine storage emission factor calculated using the equation(s) specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: $EF = a * P^2 + b * P + c$; where EF is the VOC emission factor in pounds of VOC per 1000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume %, $a = -4.5139E-5$, $b = 0.01088$ and $c = 0$. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 1070 and 2201] Federally Enforceable Through Title V Permit
19. Separate annual records of total red wine and total 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, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

20. 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

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-956-278-0

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 1931

P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:

3,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #9003 WITH INSULATION (OR PLACED INDOORS IN A CLIMATE CONTROLLED BUILDING OR EQUIVALENT) AND PRESSURE/VACUUM VALVE

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. The daily VOC emissions rate for red wine fermentation shall not exceed 3.46 lb/1000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
4. The daily VOC emissions rate for white wine fermentation shall not exceed 1.62 lb/1000 gallons. [District Rule 2201] Federally Enforceable Through Title V Permit
5. 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

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-956-278-0 : Apr 3 2012 1:07PM - KAH/LONJ : Joint Inspection NOT Required

6. 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 Rule 2201] Federally Enforceable Through Title V Permit
7. 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 Rule 2201] Federally Enforceable Through Title V Permit
8. 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 2201] Federally Enforceable Through Title V Permit
9. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
10. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed four times the maximum nominal tank capacity stated in the equipment description. [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 red wine or white wine. [District Rule 4694, 6.4.1]
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, 6.4.2]
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. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 581,212 lb. [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/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Total annual VOC emissions from wine storage operations shall be determined as the sum of the emissions for each individual wine movement based on the volume transferred in each wine movement and the batch-specific wine storage emission factor calculated using the equation(s) specified within this permit. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: $EF = a * P^2 + b * P + c$; where EF is the VOC emission factor in pounds of VOC per 1000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume %, $a = -4.5139E-5$, $b = 0.01088$ and $c = 0$. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 1070 and 2201] Federally Enforceable Through Title V Permit
19. Separate annual records of total red wine and total 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, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

20. 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

DRAFT

Appendix II
BACT Guidelines and Top-Down BACT Analysis

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 5.4.13*

Last Update 9/20/2011

Wine Storage Tank

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

***This guideline is applicable to a wine storage tank (except wooden wine storage tank).**

**Tanks made of stainless steel may be insulated or stored indoors (in a completely enclosed building, except for vents, doors and other essential openings) to limit exposure of diurnal temperature variations. Tanks made entirely of concrete (except for fitting) are considered insulated.

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

***This is a Summary Page for this Class of Source - Permit Specific BACT Determinations on Next Page(s)**

Top-Down BACT Analysis for VOCs from Wine Storage Operations

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse guideline 5.4.13 (9/20/2011), identifies achieved in practice and technologically feasible 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.
- 2) Capture of VOCs and thermal or catalytic oxidation or equivalent (98% control)
- 3) Capture of VOCs and carbon adsorption or equivalent (95% control)
- 4) Capture of VOCs and absorption or equivalent (90% control)
- 5) Capture of VOCs and condensation or equivalent (70% control)

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

Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

- 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)

Step 4 - Cost Effectiveness Analysis

The cost-effectiveness analysis will be performed based on the following items:

- Since the most cost effective approach will be achieved by installing a common control device for multiple tanks, the analysis will be based on this approach.
- The cost-effectiveness analysis will be based on a hypothetical "industry-typical" storage tank operation consisting of a battery of twelve storage tanks each with a capacity of 200,000 gallons. Total annual throughput for the hypothetical tank battery is 39.6 million gallons per year. Based on economies of scale, it is obvious that any control found to not be cost-effective at this level of throughput would be even less cost-effective at lower capacities.

Industry Standard

During the development of District Rule 4694, it was determined that use of pressure/vacuum valves and some level of refrigeration on wine storage tanks is a standard operation for large

wineries in the San Joaquin Valley. Additionally, all storage tanks are insulated. This was directly confirmed with four large wineries: Mission Bell (Madera), Gallo-Livingston, Bronco, and Robert Mondavi. Based on this, the wine storage tank VOC control requirements of District Rule 4694 and tank insulation are also determined to be "industry standard". The emission factor for "industry standard" operation is determined based on Table 1 of the District's FYI-114, Estimating Emissions from Wine Storage Tanks for an insulated storage tank.

EF (industry standard) = 0.234 lb-VOC/1000 gal of wine throughput (23.9% alcohol vol.)

Uncontrolled emissions for Twelve-Tank Battery
= $(39.6 \times 10^6 \text{ gal/year}) \times (0.234 \text{ lb-VOC/1000 gal})$
= 9,266 lb/year

Capture of VOCs with Thermal or Catalytic Oxidation/ Carbon Adsorption/Absorption or Condensation

A common feature of all of these options is that they require installation of a collection system for delivering the VOCs from the tanks to the common control device. The analysis below indicates that these options are not cost effective by showing that just the annualized direct cost for the ductwork of the collection system and supporting structural steel and foundations alone is too large, when considered at the District's cost effectiveness threshold for VOC BACT, to justify the capital investment required by these options. This approach ignores additional major costs for the actual control device and its installation and for equipment sterilization systems for ductwork and control device, instrumentation and control systems for isolation of individual tanks in the battery, site specific factors due to limited plot space (known to be a significant factor at all wineries), and operating and maintenance costs for each system. Should all these additional cost factors be included, the calculated cost effectiveness would be substantially higher than indicated the table in this section.

Emission Reductions

Thermal or catalytic oxidation technology is capable of reducing 98% of VOC emissions while the remaining options under consideration have lesser control efficiencies. Showing that all of the options under consideration are not cost effective at a 98% reduction level based on capital investment requirements of ductwork and steel alone is adequate since options other than thermal/catalytic oxidation would be even less cost effective at their actual (lower) reduction levels.

= 9,266 lb-VOC/year \times 0.98
= 9,081 lb-VOC/year
= 4.54 tons-VOC/year

Capital Investment for Installation of a VOC Collection System

Design and Estimate Basis:

- The basis and approach for the capital cost estimate for ductwork and support steel is summarized in the following table.

- The collection system consists of stainless steel plate ductwork (stainless steel is required due to cleanliness and sterilization requirements for wine quality considerations and due to the food grade product status) with isolation valving, connecting twelve 200,000 gallon 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 not be included in the cost estimate.
- A minimum duct size is established at 6 inches diameter at each tank to ensure minimal backpressure of the tank during filling operations and to provide adequate strength for spanning between supports. The main header is 12" diameter to handle the potential for simultaneously venting all tanks based on a potential fill rate of 1000 gpm for each tank (typical) and a duct velocity of 2000 feet per minute.
- The ductwork is designed with features to facilitate clean-in-place (CIP) operation to allow for periodic sterilization procedures as required for food grade products. The CIP system includes strategically placed spray nozzles on the ductwork for injecting sterilizing solutions into the system. Cost impacts to install CIP systems to clean the ducting are not included in the cost estimate.
- The ductwork is supported on a structural steel pipe rack mounted on drilled concrete piers, running through the new tank battery. Ducting elevations are established to allow continuous free draining to the separator located at the control device.
- Unit Installed Costs for Ductwork: A direct cost estimate for 12" diameter stainless steel ductwork, installed in a San Joaquin Valley winery, was taken from a study prepared by Eichleay Engineering for the Wine Institute in conjunction with development of District Rule 4694.² The estimate is based on 2nd quarter 2005 dollars, and includes fittings, miscellaneous duct supports and other materials plus field labor costs required to install the ductwork, but does not include other associated indirect costs such as construction management, engineering, owner's cost, contingency, etc. BACT Attachment 1 presents the development of unit installed costs for stainless steel ducting based on the costs derived from the Eichleay estimate.
- A linear foot of ducting required was extracted from the Eichleay Estimate for a similar system at Gallo-Livingston (See BACT Attachment 1 in project C1090293).
- Costs for structural steel supports and foundations were extracted from the Eichleay Estimate for a similar system at Gallo-Livingston (See BACT Attachment 1 in project C1090293).
- Sales tax of 8% was applied to all materials.
- Indirect costs include Engineering, Construction Expense and Contractor's Fee and Contingency. Factors for these costs are taken from Peters & Timmerhaus³.
- Capital costs taken from the Eichleay estimate are 2005 dollars. These are escalated to 2011 based on 3% overall escalation per year.

² Eichleay Engineers of California, Fermenter VOC Emissions Control Cost Estimate (Revision 1), Eichleay Project Numbers 30892 and 30913, June 30, 2005

³ Peters & Timmerhaus, Plant Design and Economics for Chemical Engineers, 2nd Edition, McGraw-Hill, 1968, p.140.

Capital Investment for VOC Collection System: The following table itemizes the costs for VOC collection system.

Fixed Capital Investment									
Item	Qty	Unit	Unit Material Cost	Total Item Material Cost	Unit Labor Cost	Total Item Labor Cost	Unit Subcontract Price	Total Item Subcontract Cost	Total Item Direct Cost
<u>Direct Cost</u>									
6" Dia. Ducting	75	ft	\$32.11	\$2,408	\$29.20	\$2,190			\$4,598
12" Dia. Ducting	870	ft	\$75.33	\$65,537	\$68.49	\$59,586			\$125,123
<u>Drilled Piers</u>									
Drilled Piers	32	ea.					\$1,000.00	\$32,000	\$32,000
Structural Steel Supports	1	lot	\$45,273	\$287,630	\$45,273	\$45,273			\$332,903
Direct Cost Subtotals				\$355,575		\$107,049		\$32,000	\$494,624
Sales Tax				\$28,446					\$28,446
Total Direct Cost				\$384,021		\$107,049		\$32,000	\$523,070
<u>Indirect Costs</u>									
Engineering @ 15% of Direct Cost									\$78,461
Construction Expense and Contractor's Fee @ 20% of Direct Cost									\$104,614
Contingency @ 15% of Fixed Capital Investment									\$124,614
Fixed Capital Investment (2005 Cost)									\$830,759
Escalation to 2011 @ 3%/year									\$161,211
Fixed Capital Investment (2011 Cost)									\$991,970

The total capital investment is annualized over 10 years assuming 10% interest. The following formula is used to determine the annualized cost:

$$ATCI = (P) \left[\frac{(i)(1+i)^n}{(1+i)^n - 1} \right]$$

Where:

ATCI: Annualized total capital investment

P: Present value

i: Interest rate (District policy is to use 10%)

n: 10 years

$$ATCI = (\$991,970) \left[\frac{(0.1)(1+0.1)^{10}}{(1+0.1)^{10} - 1} \right] = \frac{\$161,439}{\text{yr}}$$

$$\begin{aligned} \text{Cost of Reduction (\$/ton)} &= \$161,439/\text{yr} \div 4.54 \text{ tons-VOC/yr} \\ &= \$35,559/\text{ton-VOC} \end{aligned}$$

The cost of VOC reductions considering the capture system alone is more than the threshold limit of \$17,500/ton; therefore, none of the technically feasible options are cost-effective.

Step 5 - Select BACT

The facility's proposed option of using insulated tank, pressure/vacuum valve set within 10% of the maximum allowable working pressure of the tank, "gas tight" tank operation and maintaining a continuous storage temperature of 75°F (or less) within 60 days of completion of fermentation would be the BACT for wine storage tanks.

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	<ol style="list-style-type: none"> 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 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 Fermentation Operations

Step 1 - Identify all control technologies

Achieved in Practice or contained in the SIP:

Temperature-controlled open top tank with maximum average fermentation temperature of 95°F.

Technologically Feasible:

- 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)

Alternate Basic Equipment:

There is no alternate basic equipment listed on this guideline.

Step 2 - Eliminate technologically infeasible options

None of the above listed technologies are technologically infeasible.

Step 3 - Rank remaining options by control effectiveness

- 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 4 - Cost Effectiveness Analysis

In 2009, the District prepared a BACT analysis, under engineering evaluation C-1090293, for the fermentation process and evaluated the cost effectiveness analysis for each of the above mentioned technologies.

The fundamental capital and annual costs information of the above BACT analysis was extracted from a case study prepared by the Eichleay Engineering Inc for the E & J Gallo Winery facility in 2005. The cost information from the Eichleay study along with the inflation rate of 3% per year were entered into the EPA Cost Model to estimate the cost effectiveness for each capture and control case, the summary sheets of these estimations are included in the following pages. According to this 2009 BACT analysis, the effectiveness costs for each control device are summarized below:

Control Device	Thermal Oxidizer	RTO	Refrigerated Cond.	Water Scrubber	Carbon Adsorption
Cost Effectiveness (\$/ton of VOC)	20,700	19,100	23,300	22,800	18,500

As a conservative assumption, the District will use an inflation rate of 3% per year to the above evaluated cost values to estimate the 2011 cost effectiveness values:

$$\text{Inflation multiplier (IM)} = (1 + i)^n$$

Where, i = inflation rate of 3%
 n = number of years

$$\text{IM}_{2009 - 2011} = (1 + 0.03)^2 = 1.0309$$

In 2011, the effectiveness costs for each control device are calculated and summarized below:

$$\text{Effectiveness cost}_{2011} = \text{Effectiveness cost}_{2009} \times \text{IM}_{2009 - 2011}$$

Control Device	Thermal Oxidizer	RTO	Refrigerated Cond.	Water Scrubber	Carbon Adsorption
Cost Effectiveness (\$/ton of VOC)	21,300	19,700	24,000	23,500	19,100

The lowest evaluated value of \$19,100/ton exceeds the District's current cost effectiveness threshold of \$17,500/ton of VOC. Therefore, none of these technologies is cost-effective, and are not required at this time.

Step 5 - Select BACT

Temperature-controlled open top tank with maximum average fermentation temperature of 95°F would be the BACT for this process.

Appendix III
Compliance Certification

3/21/2012

Mr. Rupi Gill
San Joaquin Valley Air Pollution Control District
4800 Enterprise Way
Modesto CA 95356-8718

Subject: Compliance Statement for Franzia-Ripon

Dear Mr. Gill:

In accordance with Rule 2201, Section 4.15, "Additional Requirements for New Major Sources and Federal Major Modifications," **Franzia-Ripon** is pleased to provide this compliance statement regarding its proposed winery project **N-1113928**.

All major stationary sources in California owned or operated by **Franzia-Ripon**, or by any entity controlling, controlled by, or under common control with **Franzia-Ripon**, and which are subject to emission limitations, are in compliance or on a schedule for compliance with all applicable emission limitations and standards. These sources include one or more of the following facilities:

Facility #1: Franzia-Ripon 17000 E. Hwy 120, Ripon, CA 95366

Based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Please contact me if you have any questions regarding this certification.

Sincerely,



Paul Bement, Environmental Engineer
Franzia - Ripon

Appendix IV
Potential to Emit Calculations

Potential to Emit Calculations

Tanks operating in a winery are not truly independent emissions units. Therefore, the potential annual emissions must be established with consideration of all the other associated tanks in the facility. The potential to emit from the new tanks (PE_{2N}) is therefore determined as the difference between the post project and the pre project potential emissions from the wine production operation based on the collective physical capacity of the processing equipment at the facility.

1. Pre-Project Configuration - Potential to Emit (existing tanks)

The potential annual VOCs from fermentation and storage operations at this winery are determined as follows:

White Wine Fermentation Emissions:

- W1 = $C \times D_w \times M$ (limited by crusher capacity)
- W2 = $P \times D_w \times M$ (limited by pressing capacity)
- W3 = $(V_{FW} \times D_w) / W_{FW}$ (limited by white fermenter volume)
- W4 = $(V_T \times D_w) / R_{TW}$ (limited by overall tank processing)

Where,

- C = grape crushing capacity
= 7,200 tons/day (Source: Appendix F of project N-1110256)
- D_w = days in a white wine crush season
= 120 days
- M = amount of juice produced per ton of grapes crushed
= 200 gal/ton
- P = pressing capacity
= 5,550 tons/day (Source: Appendix F of project N-1110256)
- W_{FW} = white fermentation period
= 10 days
- R_{TW} = total winery retention time for white wine
= 40 + 10
= 50 days
- V_{FW} = total volume of white wine fermenters
= 57,081,725 gal (obtained from section V of this document)
- V_T = total winery cooperage
= 57,081,725 gal (obtained from section V of this document)

Using the above parameters,

- W1 = 172.80 MG/year
- W2 = 133.20 MG/year
- W3 = 684.98 MG/year
- W4 = 137.00 MG/year

The Wine Group has proposed to install four new tanks. These tanks will result an increase facility's storage and fermentation capacities; therefore, crushing and pressing capacity (W1, W2) are ignored from the analysis. Only W3 and W4 are compared.

$$W_w = 137.00 \text{ MG/year}$$

The potential white wine fermentation emissions based :

$$PE1_{\text{white}} = E_{\text{fw}} \times W_w$$

Where:

$$E_{\text{fw}} = \text{white wine emission factor} \\ = 2.5 \text{ lb-VOC/1,000 gal (Source: District FYI-114)}$$

$$PE1_{\text{white}} = (2.5 \text{ lb-VOC/1,000 gal}) \times (137.0 \times 10^6 \text{ gal/yr}) \\ = 342,500 \text{ lb-VOC/year}$$

White Wine Storage Emissions:

Storage emissions are calculated as follows:

$$PE1_{\text{white}} = E_s \times T \times W_w$$

Where,

$$E_s = \text{wine storage emission factor based on District FYI-114 (8/10/11). The existing tanks allow them to use store 23.9% alcohol by volume. Thus, } E_s \text{ is equal to } 0.234 \text{ lb-VOC/1,000 gal.}$$

$$T = \text{total post fermentation inter-tank transfers per batch of wine} \\ = 8$$

$$W_w = 137.00 \text{ MG/year (determined above)}$$

$$PE1_{\text{white}} = (0.234 \text{ lb-VOC/1,000 gal}) \times (8) \times (137.00 \times 10^6 \text{ gal/year}) \\ = 256,464 \text{ lb-VOC/year}$$

Total PE for White Wine Production:

Potential emissions from 100% white wine production scenario are then determined as follows:

$$PE1_{\text{white}} = PE1_{\text{white fermentation}} + PE1_{\text{white storage}} \\ = 342,500 \text{ lb-VOC/year} + 256,464 \text{ lb-VOC/year} \\ = 598,964 \text{ lb-VOC/year}$$

Red Wine Fermentation Emissions:

$$W1 = C \times D_r \times M \text{ (limited by crusher capacity)}$$

$$W2 = P \times D_r \times M \text{ (limited by pressing capacity)}$$

$$W3 = (V_{\text{FR}} \times F \times D_r) / R_{\text{FR}} \text{ (limited by red fermenter volume)}$$

$$W4 = (V_T \times D_r) / R_{TS} \text{ (limited by overall tank processing)}$$

Where,

- C = grape crushing capacity
= 7,200 tons/day (Source: Appendix F of project N-1110256)
- D_r = days in a red wine crush season
= 120 days
- F = Fill factor for red wine fermentation
= 80%
- M = amount of juice produced per ton of grapes crushed
= 200 gal/ton
- P = pressing capacity
= 5,550 tons/day (Source: Appendix F of project N-1110256)
- R_{FR} = red fermentation period
= 5 days
- R_{TS} = total winery retention time for red wine,
= 40 + 5
= 45 days
- V_{FR} = total volume of red wine fermenters
= 57,081,725 gal (obtained from section V of this document)
- V_T = total winery cooperage
= 57,081,725 gal (obtained from section V of this document)

Using the above parameters,

$$W1 = 172.80 \text{ MG/year}$$

$$W2 = 133.20 \text{ MG/year}$$

$$W3 = 1,096.97 \text{ MG/year}$$

$$W4 = 152.22 \text{ MG/year}$$

The Wine Group has proposed to install four new tanks. These tanks will result an increase facility's storage and fermentation capacities; therefore, crushing and pressing capacity (W1, W2) are ignored from the analysis. Only W3 and W4 are compared.

$$W_R = 152.22 \text{ MG/year}$$

The potential red wine fermentation emissions would be:

$$PE1_{red} = E_{fr} \times W_R$$

Where,

- E_{fr} = red wine emission factor
= 6.2 lb-VOC/1,000 gal (Section VII.B.2 of this document)

$$\begin{aligned} PE1_{red} &= (6.2 \text{ lb-VOC/1,000 gal}) \times (152.22 \times 10^6 \text{ gal/yr}) \\ &= 943,764 \text{ lb-VOC/year} \end{aligned}$$

Red Wine Storage Emissions:

Storage emissions are calculated as follows:

$$PE1_{red} = E_s \times T \times W_R$$

Where:

E_s = wine storage emission factor based on District FYI-114 (8/10/11). The existing tanks allow them to use store 23.9% alcohol by volume. Thus, E_s is equal to 0.234 lb-VOC/1,000 gal.

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

W_R = 152.22 MG/year (determined above)

$$\begin{aligned} PE1_{red} &= (0.234 \text{ lb-VOC}/1,000 \text{ gal}) \times (8) \times (152.22 \times 10^6 \text{ gal/yr}) \\ &= 284,956 \text{ lb-VOC/year} \end{aligned}$$

Total PE for Red Wine Production:

Potential emissions from 100% red wine production scenario are determined as follows:

$$\begin{aligned} PE1_{red} &= PE1_{red \text{ fermentation}} + PE1_{red \text{ storage}} \\ &= 943,764 \text{ lb-VOC/year} + 284,956 \text{ lb-VOC/year} \\ &= 1,228,720 \text{ lb-VOC/year} \end{aligned}$$

Summary:

The facility's potential emissions based on the tank capacity are taken to be the greater of the white or red emissions potential determined above.

$$\begin{aligned} PE1 &= \text{greater of } PE1_{white} \text{ and } PE1_{red} \\ &= \mathbf{1,228,720 \text{ lb-VOC/year}} \end{aligned}$$

2. Potential to Emit (existing plus new tanks)

The potential annual VOCs from fermentation and storage operations at this winery are determined as follows:

White Wine Fermentation Emissions:

$$\begin{aligned} W1 &= C \times D_w \times M \text{ (limited by crusher capacity)} \\ W2 &= P \times D_w \times M \text{ (limited by pressing capacity)} \\ W3 &= (V_{FW} \times D_w)/W_{FW} \text{ (limited by white fermenter volume)} \\ W4 &= (V_T \times D_w)/R_{TW} \text{ (limited by overall tank processing)} \end{aligned}$$

Where,

C = grape crushing capacity
= 7,200 tons/day (Source: Appendix F of project N-1110256)
 D_w = days in a white wine crush season
= 120 days

M = amount of juice produced per ton of grapes crushed
 = 200 gal/ton
 P = pressing capacity
 = 5,550 tons/day (Source: Appendix F of project N-1110256)
 W_{FW} = white fermentation period
 = 10 days
 R_{TW} = total winery retention time for white wine
 = 40 + 10
 = 50 days
 V_{FW} = total volume of white wine fermenters
 = 57,095,725 gal (obtained from section V of this document)
 V_T = total winery cooperage
 = 57,095,725 gal (obtained from section V of this document)

Using the above parameters,

W1 = 172.80 MG/year
 W2 = 133.20 MG/year
 W3 = 685.15 MG/year
 W4 = 137.03 MG/year

The Wine Group has proposed to install four new tanks. These tanks will result an increase facility's storage and fermentation capacities; therefore, crushing and pressing capacity (W1, W2) are ignored from the analysis. Only W3 and W4 are compared, and smaller of the two is considered for the analysis.

W_W = 137.03 MG/year

The potential white wine fermentation emissions would be:

$$PE2_{white} = E_{fw} \times W_W$$

Where:

E_{fw} = white wine emission factor
 = 2.5 lb-VOC/1,000 gal (Source: Section VII.B.2 of this document)

$$\begin{aligned}
 PE2_{white} &= (2.5 \text{ lb-VOC}/1,000 \text{ gal}) \times (137.03 \times 10^6 \text{ gal/yr}) \\
 &= 342,575 \text{ lb-VOC/year}
 \end{aligned}$$

White Wine Storage Emissions:

Storage emissions are calculated as follows:

$$PE2_{white} = E_s \times T \times W_w$$

Where,

E_s = wine storage emission factor based on District FYI-114 (8/10/11). The permits allow them to use store 23.9% alcohol by volume. Thus, E_s is equal to 0.234 lb-VOC/1,000 gal.

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

W_w = 137.03 MG/year (determined above)

$$\begin{aligned} PE_{2,white} &= (0.234 \text{ lb-VOC}/1,000 \text{ gal}) \times (8) \times (137.03 \times 10^6 \text{ gal/year}) \\ &= 256,520 \text{ lb-VOC/year} \end{aligned}$$

Total PE for White Wine Production:

Potential emissions from 100% white wine production scenario are then determined as follows:

$$\begin{aligned} PE_{2,white} &= PE_{2,white \text{ fermentation}} + PE_{2,white \text{ storage}} \\ &= 342,575 \text{ lb-VOC/year} + 256,520 \text{ lb-VOC/year} \\ &= 599,095 \text{ lb-VOC/year} \end{aligned}$$

Red Wine Fermentation Emissions:

Red wine production capacity is determined as the lesser of the production capacities of either the crushing, pressing or tank capacity.

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

$$W1 = C \times D_r \times M \text{ (limited by crusher capacity)}$$

$$W2 = P \times D_r \times M \text{ (limited by pressing capacity)}$$

$$W3 = (V_{FR} \times F \times D_r) / R_{FR} \text{ (limited by red fermenter volume)}$$

$$W4 = (V_T \times D_r) / R_{TS} \text{ (limited by overall tank processing)}$$

Where,

C = grape crushing capacity
= 7,200 tons/day (Source: Appendix F of project N-1110256)

D_r = days in a red wine crush season
= 120 days

F = Fill factor for red wine fermentation
= 80%

M = amount of juice produced per ton of grapes crushed
= 200 gal/ton

P = pressing capacity
= 5,550 tons/day (Source: Appendix F of project N-1110256)

R_{FR} = red fermentation period
= 5 days

R_{TS} = total winery retention time for red wine,
= 40 + 5
= 45 days

V_{FR} = total volume of red wine fermenters
= 57,095,725 gal (obtained from section V of this document)
 V_T = total winery cooperage
= 57,095,725 gal (obtained from section V of this document)

Using the above parameters,

W_1 = 172.80 MG/year
 W_2 = 133.20 MG/year
 W_3 = 1,096.24 MG/year
 W_4 = 152.26 MG/year

The Wine Group has proposed to install four new tanks. These tanks will result an increase facility's storage and fermentation capacities; therefore, crushing and pressing capacity (W_1 , W_2) are ignored from the analysis. Only W_3 and W_4 are compared, and smaller of the two is considered for the analysis.

W_R = 152.26 MG/year

The potential red wine fermentation emissions would be:

$$PE_{2,red} = E_{fr} \times W_R$$

Where,

E_{fr} = red wine emission factor
= 6.2 lb-VOC/1,000 gal (per Section VII.B.2 of this document)

$$PE_{2,red} = (6.2 \text{ lb-VOC}/1,000 \text{ gal}) \times (152.26 \times 10^6 \text{ gal/yr})$$
$$= 944,012 \text{ lb-VOC/year}$$

Red Wine Storage Emissions:

Storage emissions are calculated as follows:

$$PE_{2,red} = E_s \times T \times W_R$$

Where:

E_s = wine storage emission factor based on District FYI-114 (8/10/11). The existing tanks allow them to use store 23.9% alcohol by volume. Thus, E_s is equal to 0.234 lb-VOC/1,000 gal.

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

W_R = 152.26 MG/year (determined above)

$$PE_{2,red} = (0.234 \text{ lb-VOC}/1,000 \text{ gal}) \times (8) \times (152.26 \times 10^6 \text{ gal/yr})$$
$$= 285,031 \text{ lb-VOC/year}$$

Total PE for Red Wine Production:

Potential emissions from 100% red wine production scenario are determined as follows:

$$\begin{aligned} PE2_{red} &= PE2_{red \text{ fermentation}} + PE2_{red \text{ storage}} \\ &= 944,012 \text{ lb-VOC/year} + 285,031 \text{ lb-VOC/year} \\ &= 1,229,043 \text{ lb-VOC/year} \end{aligned}$$

Summary:

The facility's potential emissions based on the tank capacity are taken to be the greater of the white or red emissions potential determined above.

$$\begin{aligned} PE2 &= \text{greater of } PE2_{white} \text{ and } PE2_{red} \\ &= \mathbf{1,229,043 \text{ lb-VOC/year}} \end{aligned}$$

3. Potential to Emit (new tanks)

The potential emissions from new tanks would be calculated as the difference between the post project and pre project potential emissions based on physical capacity. Thus,

Potential Emissions Based on Physical Capacity of Wine Processing Equipment			
Category	Fermentation	Storage	Total
Pre Project	943,764	284,956	1,228,720
Post Project	944,012	285,031	1,229,043
PE2 _N	248	75	323