San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

MAY 23 2013

Mr. Paul Bement
The Wine Group, Inc.
P.O. Box 90
Tracy, CA 95378

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # N-956
Project # N-1130012

Dear Mr. Bement:

Enclosed for your review is the District's analysis of an application for Authorities to Construct for the facility identified above. You requested that Certificates of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. The applicant is proposing to install fourteen new stainless steel insulated 350,000 gallon wine fermentation/storage tanks.

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

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

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

Enclosures

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

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Executive Director/Air Pollution Control Officer

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www.valleyair.org www.healthyairliving.com

Newspaper notice for publication in Stockton Record and for posting on valleyair.org

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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, Inc. at 17000 E Highway 120, Ripon, California. The applicant is proposing to install fourteen new stainless steel insulated 350,000 gallon wine fermentation/storage tanks.

The District's analysis of the legal and factual basis for this proposed action, project #N-1130012, is available for public inspection at http://www.valleyair.org/notices/public_notices_idx.htm and at any District office. There are no emission increases associated with this proposed action. This will be the public's only opportunity to comment on the specific conditions of the modification. If requested, the District will hold a public hearing regarding issuance of this modification. For additional information, please contact the District at (559) 230-6000. Written comments on the proposed initial permit must be submitted by July 1, 2013 to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 1990 EAST GETTYSBURG AVENUE, FRESNO, CA 93726.**

San Joaquin Valley Air Pollution Control District
Authority to Construct Application Review
Wine Fermentation and Storage Tanks

Facility Name:	The Wine Group, Inc.	Date:	May 21, 2013
Mailing Address:	P.O. Box 90	Engineer:	Stanley Tom
	Tracy, CA 95378	Lead Engineer:	Joven Refuerzo
Contact Person:	Paul Bement		
Telephone:	(209) 253-5206		
Application #(s):	N-956-319-0 through '332-0		
Project #:	N-1130012		
Deemed Complete:	January 14, 2013		

I. Proposal

The Wine Group, Inc. has requested Authority to Construct (ATC) permits for the installation of fourteen new stainless steel insulated 350,000 gallon wine tanks. These tanks will be used for red and white wine fermentation and storage.

The facility proposes to add these tanks into the existing specific limiting condition (SLC) that limits annual wine fermentation and storage emissions from all wine tanks at the facility.

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

II. Applicable Rules

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

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

III. Project Location

The facility is located at 17000 E Highway 120 in Ripon, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

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 CO_2. The VOCs consist primarily of ethanol along with small quantities of other fermentation byproducts.

Following the completion of fermentation, white wine is transferred directly to storage tanks. Red wine is first directed to the presses for separation of solids and then routed to the storage tanks. All tanks in the winery typically operate as two separate emissions units: (1) a fermentation operation during which the tank is vented directly to the atmosphere to release the evolved 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-956-319-0	350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-1 WITH PRESSURE/VACUUM VALVE AND INSULATION
N-956-320-0	350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-2 WITH PRESSURE/VACUUM VALVE AND INSULATION
N-956-321-0	350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-3 WITH PRESSURE/VACUUM VALVE AND INSULATION
N-956-322-0	350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-4 WITH PRESSURE/VACUUM VALVE AND INSULATION
N-956-323-0	350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-5 WITH PRESSURE/VACUUM VALVE AND INSULATION
N-956-324-0	350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-6 WITH PRESSURE/VACUUM VALVE AND INSULATION
N-956-325-0	350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-7 WITH PRESSURE/VACUUM VALVE AND INSULATION
N-956-326-0	350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-8 WITH PRESSURE/VACUUM VALVE AND INSULATION
N-956-327-0	350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-9 WITH PRESSURE/VACUUM VALVE AND INSULATION
N-956-328-0	350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-10 WITH PRESSURE/VACUUM VALVE AND INSULATION
N-956-329-0	350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-11 WITH PRESSURE/VACUUM VALVE AND INSULATION
N-956-330-0	350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-12 WITH PRESSURE/VACUUM VALVE AND INSULATION
N-956-331-0	350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-13 WITH PRESSURE/VACUUM VALVE AND INSULATION
N-956-332-0	350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-14 WITH PRESSURE/VACUUM VALVE AND INSULATION

VI. Emission Control Technology Evaluation

VOCs (ethanol) are emitted from wine storage tanks as a result of both working losses (which occur when the liquid level in the tank changes) and breathing losses (expansion and contraction effects due to temperature variations). The proposed pressure/vacuum valve limits these emissions by requiring the maximum amount of variation in tank pressure before allowing the tank to vent to the atmosphere or allowing air admission to the tank. When wine storage tanks are insulated or located in a climate controlled building, breathing losses are considered to be negligible. The proposed tanks are insulated.

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

VII. General Calculations

A. Assumptions

- Winery tanks generally consist of two emissions units; 1) a fermentation tank emissions unit and 2) a wine storage tank emissions unit.
- All tanks in this project will be classified as red and white wine fermentation and red and white wine storage tanks.
- Annual emissions will be limited by the existing SLC.

Fermentation

- This fermentation tank is subject to the fermentation tank emission reduction measures of District Rule 4694. The actual production in this tank is subject to a minimum facility-wide fermentation emission reduction of 35% pursuant to District Rule 4694. The District has determined that the fermentation emission reduction provisions of Rule 4694 constitute a Specific Limiting Condition (SLC) applicable to all wine fermentation tanks at the facility.

Storage

- Typically, for enclosed tanks with refrigeration and/or insulation (or equivalent) and P/V valves, breathing losses from storage of wine are assumed to be negligible.
- Storage tank maximum ethanol content of stored wine is 23.9% (per applicant).
- During wine storage, daily throughput will not exceed the maximum nominal tank capacity for each tank (per applicant).

B. Emission Factors

Fermentation

Uncontrolled emissions factors are taken from District FYI-114, *VOC Emission Factors for Wine Fermentation and Storage Tanks*.

Wine Type	EF (lb-VOC/1,000 gallon of wine)		Source
	Daily	Annual	
White	1.62	2.5	FYI-114
Red	3.46	6.2	FYI-114

Fermentation tanks which are subject to the fermentation emission reduction requirements of Rule 4694 are considered to be controlled sources subject to a 35% reduction in emissions. For tanks controlled per Rule 4694, the emission factors are determined to be:

Wine Type	EF (lb-VOC/1,000 gallon of wine)	
	Daily	Annual
White	1.62	2.5 x (1-35%) = 1.6
Red	3.46	6.2 x (1-35%) = 4.0

Since these tanks can ferment either white or red wine, therefore, worst case emissions factors of red wine will be used to calculate the maximum potential emissions.

Storage

Wine Storage @ 23.9% Ethanol:

Emissions factors are taken from District FYI-114, *VOC Emission Factors for Wine Fermentation and Storage Tanks*.

Daily: 0.364 lb-VOC/1000 gallons daily throughput
Annual: 0.212 lb-VOC/1000 gallons annual throughput

Annual:
The annual VOC emissions from the wine storage operations in these tanks will be determined using the emission factors listed in FYI 114 and generating a curvefit equation from the known values. The curvefit equation generated from the known values in FYI 114 was determined to be as follows:

VOC Emissions (lb-VOC/1000 gallons throughput) = -0.38194E-4p^2 + 0.97917E-2p where p = vol% ethanol content of wine stored

C. Calculations

1. Pre-Project Potential to Emit (PE1)

Since these are new emissions units, PE1 = 0 (all pollutants) for the fermentation and storage operation in these tanks.

2. Post Project Potential to Emit (PE2)

Fermentation

Either red or white wine, the fermentation process takes longer than a day (3 to 5 days for red wine and 10 to 14 days for white wine). Therefore, maximum one turnover per day will be used to determine the potential daily emissions.

The potential daily VOC emissions are determined using the red wine emissions factor, tank capacity, turnover rate, and the annual throughput as follows:

Daily PE2 = EF_{red} (lb-VOC/1,000 gal) x tank capacity (gal/tank) x turnover rate (tank/day)

Permit Unit	Daily EF	Annual EF	Tank Capacity	Turnover rate	Daily Throughput	Daily PE2
	(lb-VOC/1,000 gal)		(gallon)	(tank/day)	(gal/day)	(lb-VOC/day)
N-956-319-0	3.46	4.0	350,000	1	350,000	1,211.0
N-956-320-0			350,000	1	350,000	1,211.0
N-956-321-0			350,000	1	350,000	1,211.0
N-956-322-0			350,000	1	350,000	1,211.0
N-956-323-0			350,000	1	350,000	1,211.0
N-956-324-0			350,000	1	350,000	1,211.0
N-956-325-0			350,000	1	350,000	1,211.0
N-956-326-0			350,000	1	350,000	1,211.0
N-956-327-0			350,000	1	350,000	1,211.0
N-956-328-0			350,000	1	350,000	1,211.0
N-956-329-0			350,000	1	350,000	1,211.0
N-956-330-0			350,000	1	350,000	1,211.0
N-956-331-0			350,000	1	350,000	1,211.0
N-956-332-0			350,000	1	350,000	1,211.0

The tanks proposed in this project will be incorporated into the existing Specific Limiting Condition (SLC) which limits the post project annual fermentation emissions from existing fermentation tanks and new fermentation tanks.

Therefore,

$$\text{Annual PE2}_{\text{fermentation and storage (existing + new tanks)}} = \text{Annual PE1}_{\text{fermentation and storage (existing tanks)}} = 581{,}212 \text{ lb-VOC/year}$$

Storage

The potential daily VOC emissions are determined using the storage emissions factor, tank capacity, turnover rate, and the annual throughput as follows:

Daily PE2 = EF (lb-VOC/1,000 gal) x tank capacity (gal/tank) x turnover rate (tank/day)

Permit Unit	Daily EF	Annual EF	Tank Capacity	Turnover rate	Daily Throughput	Daily PE2
	(lb-VOC/1,000 gal)		(gallon)	(tank/day)	(gal/day)	(lb-VOC/day)
N-956-319-0	0.364	0.212	350,000	1	350,000	127.4
N-956-320-0			350,000	1	350,000	127.4
N-956-321-0			350,000	1	350,000	127.4
N-956-322-0			350,000	1	350,000	127.4
N-956-323-0			350,000	1	350,000	127.4
N-956-324-0			350,000	1	350,000	127.4
N-956-325-0			350,000	1	350,000	127.4
N-956-326-0			350,000	1	350,000	127.4
N-956-327-0			350,000	1	350,000	127.4
N-956-328-0			350,000	1	350,000	127.4
N-956-329-0			350,000	1	350,000	127.4
N-956-330-0			350,000	1	350,000	127.4
N-956-331-0			350,000	1	350,000	127.4
N-956-332-0			350,000	1	350,000	127.4

The tanks proposed in this project will be incorporated into the existing Specific Limiting Condition (SLC) which limits the post project annual storage emissions from existing storage tanks and new storage tanks.

Therefore,

$$\text{Annual PE2}_{\text{fermentation and storage (existing + new tanks)}} = \text{Annual PE1}_{\text{fermentation and storage (existing tanks)}} = 581{,}212 \text{ lb-VOC/year}$$

Facility SLC Fermentation and Storage

Annual SLC limit for wine fermentation and storage emissions from all wine tanks at this facility:

SLC = Annual PE2 for fermentation operations + Annual PE2 for wine storage
= **581,212 lb-VOC/year**

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

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

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

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

Pursuant to District Rule 2201, the Post Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

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

5. Major Source Determination

Rule 2201 Major Source Determination

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

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

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

Rule 2410 Major Source Determination

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). Therefore the following PSD Major Source thresholds are applicable.

PSD Major Source Determination (tons/year)	
	VOC
Estimated Facility PE before Project Increase	290.6
PSD Major Source Thresholds	250
PSD Major Source ? (Y/N)	Y

As shown above, the facility is an existing major source for PSD for at least one pollutant. Therefore the facility is an existing major source for PSD.

6. Baseline Emissions (BE)

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

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

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

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.22 of District Rule 2201.

The permit units in this project only emit VOC and therefore the BE determination is only required for this pollutant, as discussed in the following sections:

Clean Emissions Unit, Located at a Major Source

Pursuant to Rule 2201, a Clean Emissions Unit is defined as an emissions unit that is "equipped with an emissions control technology with a minimum control efficiency of at least 95% or is equipped with emission control technology that meets the requirements for achieved-in-practice BACT as accepted by the APCO during the five years immediately prior to the submission of the complete application.

Existing Fermentation and Storage Tanks Included in VOC SLC

All of the fermentation tanks at this facility meet the District's current achieved-in-practice in BACT Guideline 5.4.14 for fermentation tanks by being temperature-controlled open top tanks with maximum average fermentation temperature of 95 deg F. Therefore all fermentation tank emission units are Clean Emissions Units pursuant to District Rule 2201.

All of the storage tanks at this facility meet the District's current achieved-in-practice in BACT Guideline 5.4.13 for storage tanks by being insulated or equivalent, equipped with a 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. Therefore all storage tank emission units are Clean Emissions Units pursuant to District Rule 2201.

For the combined fermentation and storage emissions of all of the existing tanks in the VOC SLC:

$\Sigma BE_{fermentation\ and\ storage} = \Sigma PE1_{fermentation\ and\ storage}$ = 581,212 lb-VOC/year

New Fermentation and Storage Tanks

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

7. SB 288 Major Modification

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

As discussed in Section VII.C.5 above, the facility is an existing Major Source for VOC; however, the project by itself would need to be a significant increase in order to trigger a SB 288 Major Modification. Post project, the new fermentation units will be part of the overall fermentation tank SLC which has an existing emission limit of 448,198 lb-VOC per year. Since this project does not propose a change in the SLC emission limit, post project fermentation emissions from all tanks at this facility will be limited to 448,198 lb-VOC per year. However, since the new fermentation tanks add physical capacity to the winery but do not operate independently, fermentation PE for the new tanks may be taken to be $(PE2\text{-}PE1)_{all\ tanks}$ which is the change in Potential to Emit for fermentation from all tanks at the winery (in the absence of an SLC emission limit) resulting from the presence of the new tanks in the post project facility configuration.

Calculation of the Annual Potential to Emit ($PE2_N$) for New Tanks

A. Assumptions

- New winery tanks will be added to the existing Specific Limiting Condition (SLC) which limits combined annual fermentation and storage emissions for all wine fermentation and storage tanks at the facility.
- Annual Potential to Emit for VOC emissions from the fermentation and storage operation at the facility will be calculated generally using the method specified in the District's FYI-296, *Calculation of the Potential to Emit for VOC Emissions from Wine Fermentation and Storage Operations*. However, the calculation method of FYI-296 allows consideration of the facility's pressing or crushing capacity as a potential operating limitation. While this consideration is applicable to establishing a Specific Limiting Condition for the annual Potential to Emit for all tanks at a facility, it is not applicable to calculating PE2 for added tanks for purposes of determination of a Major Modification since the pressing and/or the pressing capacity are not limited by permits and thus may be increased at any time without consideration of NSR impact. Therefore, the facility's pressing or crushing potential will be conservatively ignored and only the new tank capacity will be considered in the calculations.
- Since the proposed new tanks are combined storage/fermentation tanks which is the same configuration as all other tanks at the facility, their emission impact at the facility is strictly additive and the potential emissions may be calculated by treating the new collection of tanks as a separate winery limited only by tank capacity.
- Maximum ethanol content of stored wine is 23.9%.
- All tanks are insulated.

B. Emission Factors

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

Red Wine Fermentation:
Annual: E_{fr} = 6.2 lb-VOC/1000 gallons annual throughput

White Wine Fermentation:
Annual: E_{fw} = 2.5 lb-VOC/1000 gallons annual throughput

Wine Storage Working Losses from insulated tanks @ 23.9% Ethanol:
Annual: E_S = 0.212 lb-VOC/1000 gallons annual throughput

C. Calculations

1. Annual emission potentials for fermentation operations

The potential emissions from the new fermentation capacity is determined in the following sequence of calculations:

a. Potential fermentation emissions from white wine production are first determined:

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

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

W1 = Production capacity based on crusher capacity – **Not applicable**, see assumptions
W2 = Production capacity based on pressing capacity) – **Not applicable**, see assumptions
W3 = $(V_{FW} \times F_W \times D_w) / W_{FW}$ (limited by white fermenter volume)
W4 = $(V_T \times D_w) / R_{TW}$ (limited by overall tank processing)

where,
D_w = days in a white wine crush season = 120 days
W_{FW} = White fermentation period = 10 days
F_W = Fill factor for white wine fermentation = 95%
R_{TW} = Total winery retention time for white wine, 40 + 10 = 50 days
V_{FW} = total volume of white wine fermenters = 4,900,000 gallons
V_T = Total Storage Cooperage = 4,900,000 gallons

Potential white wine fermentation emissions are then determined by applying the white fermentation emission factor stated in FYI-114:

$PE_{whitefermentation} = E_{fw} \times W_W$

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

Performing the above calculations yields

W1 = Not applicable
W2 = Not applicable
W3 = 55.86 MG/year (million gals/year)
W4 = 11.76 MG/year

Selecting W_W = W4 = 11.76 MG/year and applying the emission factor for white wine fermentation yields:

$PE_{whitefermentation}$ = 29,400 lb-VOC/year

b. Potential storage emissions from white wine production are then calculated:

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

$PE_{whitestorage} = E_S \times T \times W_W$

Where:

E_S = wine storage annual emission factor based on District FYI-114 = 0.212 lb-VOC/1000 gallons of wine transferred for 23.9% alcohol wine at a facility located in the Northern Region.

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

W_W = maximum quantity of white wine the facility can produce = 11.76 million gallons per year

$PE_{whitestorage}$ = (0.212/1000) x 8 x 11,760,000 = 19,945 lb-VOC/year

c. Total potential emissions from white wine production are then calculated:

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

PE_{white} = (29,400 + 19,945) lb-VOC/year = 49,345 lb-VOC/year

d. Potential fermentation emissions from red wine production are then calculated:

Red wine production capacity is determined based only on the production capacity of the wine fermentation tanks.

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

W1 = Production capacity based on crusher capacity – **Not applicable**, see assumptions
W2 = Production capacity based on pressing capacity – **Not applicable**, see assumptions
W3 = $(V_{FR} \times F \times D_r) / R_{FR}$ (limited by red fermenter volume)
W4 = $(V_T \times D_r) / R_{TS}$ (limited by overall tank processing)

D_r = days in a red wine crush season = 120 days
F = Fill factor for red wine fermentation = 80%
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 = 4,900,000 gallons
V_T = Total Storage Cooperage = 4,900,000 gallons

Potential red wine fermentation emissions are then determined by applying the red fermentation emission factor stated above.

$PE_{redfermentation} = E_{fr} \times W_R$

E_{fr} = red wine emission factor = 6.2 lb-VOC/1000 gal (District Rule 4694)

Performing the above calculations yields

W1 = Not applicable
W2 = Not applicable
W3 = 94.08 MG/year(million gals/year)
W4 = 13.07 MG/year
Selecting W_R = W4 = 13.07 MG/year and applying the emission factor for red wine fermentation yields:

$PE_{redfermentation}$ = 81,013 lb-VOC/year

e. Potential storage emissions from red wine production are then calculated:

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

$PE_{redstorage} = E_S \times T \times W_R$

Where:

E_S = wine storage annual emission factor based on District FYI-114 = 0.212 lb-VOC/1000 gallons of wine transferred for 23.9% alcohol wine at a facility located in the Northern Region.

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

W_R = maximum quantity of red wine the facility can produce = 11.76 million gallons per year

$PE_{redstorage}$ = (0.212/1000) x 8 x 13,070,000 = 22,161 lb-VOC/year

f. Total potential emissions from red wine production are then calculated:

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

PE_{red} = (81,013 + 22,161) lb-VOC/year = 103,174 lb-VOC/year

g. The facility's emission potential is then taken to be the greater of either the white or red emissions potentials determined above.

$PE_{Facility}$ = greater of PE_{white} and PE_{red}
$PE_{Facility} = PE_{red}$

$PE_{Facility}$ = 103,174 lb-VOC/year

2. $PE2_N$ for New Tanks

$PE2_N = PE2_{Facility}$ = 103,174 lb-VOC/year

The emissions units within this project have a total potential to emit for VOC which is greater than SB 288 Major Modification thresholds (see table below). Therefore, SB 288 Major Modification calculation is required.

SB 288 Major Modification Thresholds (Existing Major Source)			
Pollutant	Project PE (lb/year)	Threshold (lb/year)	Major Modification?
NO_x	0	50,000	No
SO_x	0	80,000	No
PM_{10}	0	30,000	No
VOC	103,174	50,000	Yes

SB 288 Major Modification Calculation

Since the project's PE2 surpasses the SB 288 Major Modification Thresholds for VOC, the Net Emissions Increase (NEI) will be compared to the SB 288 Major Modification thresholds in order to determine if this project constitutes an SB 288 Major Modification.

The NEI is the total of emission increases for every permit unit addressed in this project and is calculated as follows:

NEI = PE2 – BAE

Where: PE2 = the sum of all the PE2s for each permit unit in this project
BAE = for units that are fully offset, the BAE = the PE1 for every unit, otherwise, the BAE is the actual annual emissions averaged over the baseline period for every unit.

The baseline period is the two year period preceding the application (or another time period within the previous 5 or 10 yrs determined by the District to be more representative of normal operation). The units in this project are new. Therefore, BAE = 0.

Since this project only involves new emissions units,

Baseline Actual Emissions = BAE = 0 lb-VOC/year

Therefore,

NEI = PE2 – BAE = (103,174 – 0) lb-VOC/year = 103,174 lb-VOC/year

No other creditable emission decreases have occurred at this facility within the last 5 years. Therefore, the Net Emission Increase (NEI) is:

SB 288 Major Modification Calculation and Determination					
Pollutant	PE2 (lb/year)	BAE (lb/year)	NEI (lb/year)	Thresholds (lb/yr)	SB 288 Major Modification?
VOC	103,174	0	103,174	50,000	Yes

As demonstrated in the preceding table, this project does constitute an SB 288 Major Modification for VOC.

8. Federal Major Modification

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

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

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

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

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

Net Emission Increase for New Units (NEI_N)

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

$NEI_N = PE2_N - BAE$

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

$NEI_N = PE2_N$

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

$NEI_N = PE2_N = 103{,}174$ lb-VOC/year

Net Emission Increase for Existing Units (NEI_E)

Tanks operating in a winery are not truly independent emissions units and thus their potential annual emissions must be established with consideration of all other associated tanks in the facility. As stated above, $PE2_N$, is the difference between the post project and pre project potential emissions from the facility's wine production operation based on the collective physical capacity of the processing equipment at the facility. $PE2_N$ thus represents the maximum potential increase in actual emissions resulting from this project. As well, this project will not cause any other debottlenecking of the facility's operations which would have the potential for additional emissions.

The NEI for this project is thus calculated as follows:

$NEI = NEI_N$
NEI = 103,174 lb-VOC/year

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

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

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

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

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

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

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

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

I. Project Location Relative to Class 1 Area

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

II. Significance of Project Emission Increase Determination

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

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

CO2 Emissions from Fermentation

Basis:

- Project total annual fermentation emissions = 81,013 lb-VOC/year
- Assume all wine produced is white wine (worst case).
- The VOC emission factor is 2.5 lb-VOC per 1000 gallons of white wine fermented.

- Maximum practical ethanol content for wine fermentation is 15 volume percent (higher concentrations have a negative impact on yeast reproduction with death of the yeast occurring at around 18 vol %)
- Molecular weight of ethanol and CO2 are 46 and 44 lb/mole respectively.
- The fermentation reaction produces one mole of carbon dioxide for each mole of ethanol produced.
- Liquid density for ethanol is 6.61 lb/gal at 60 deg F.

Calculation:

Maximum Annual Wine Production Based on 100% White Wine'= = 81,013 $\frac{\text{lb-VOC}}{\text{year}}$ ÷ 2.5 $\frac{\text{lb-VOC}}{\text{1000 gallons}}$

Maximum Annual Wine Production Based on 100% White Wine'= = 32,405,200 gallons per year

Maximum Annual Ethanol Production = 32,405,200 $\frac{\text{gal}}{\text{year}}$ x 15% ethanol x 6.61 $\frac{\text{lb-ethanol}}{\text{gallon}}$

Maximum Annual Ethanol Production = 32,129,756 lb-ethanol per year

Maximum Annual CO2 Production = 32,129,756 $\frac{\text{lb}}{\text{year}}$ x $\frac{\text{1 mole}}{\text{46 lb ethanol}}$ x $\frac{\text{1 mole CO2}}{\text{1 mole ethanol}}$ x $\frac{\text{44 lb CO2}}{\text{mole CO2}}$

Maximum Annual CO2 Production = 30,732,810 lb-CO2 per year

Maximum Annual CO2 Production = 15,366 ton-CO2 per year

PSD Significant Emission Increase Determination: Potential to Emit (tons/year)						
	NO2	SO2	CO	PM	PM10	CO2e
Total PE from New and Modified Units	0	0	0	0	0	15,366
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000
PSD Significant Emission Increase?	N	N	N	N	N	N

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

10. Quarterly Net Emissions Change (QNEC)

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

$QNEC_{SLC} = PE2_{SLC} - PE1_{SLC}$, where:

$QNEC_{SLC}$ = Quarterly Net Emissions Change for units covered by the SLC.
$PE2_{SLC}$ = PE2 for all units covered by the SLC.
$PE1_{SLC}$ = PE1 for all units covered by the SLC.

The facility-wide VOC SLC remains unchanged. Therefore, QNEC equals to zero for each quarter.

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

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

a. Any new emissions unit with a potential to emit exceeding two pounds per day,
b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or

d. Any new or modified emissions unit, in a stationary source project, which results in a Major Modification.

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

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

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

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

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

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

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

d. SB 288/Federal Major Modification

As discussed in Section VII.C.7 above, this project does constitute a SB 288 and Federal Major Modification for VOC emissions; therefore BACT is triggered for VOC for the new wine tanks.

2. BACT Guideline

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

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

3. Top-Down BACT Analysis

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

Pursuant to the attached Top-Down BACT Analyses (Appendix A and B), BACT has been satisfied with the following:

Fermentation

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

Storage

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

B. Offsets

1. Offset Applicability

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

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

2. Quantity of Offsets Required

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

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

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

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

BE = Pre-project Potential to Emit for:

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

otherwise,

BE = Historic Actual Emissions (HAE)

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

Offsets Required (lb/year) = $\Sigma[PE2 - BE]_{SLC}$ x DOR

As calculated in Section VII.C.6 above, the Baseline Emissions (BE) of the SLC are equal to the Pre-Project Potential to Emit (PE1). Therefore,

Offsets Required (lb/year) = $[PE2 - BE]_{SLC}$ = [581,212 – 581,212] lb-VOC/year
= 0 lb-VOC/year

C. Public Notification

1. Applicability

Public noticing is required for:

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

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

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

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

b. PE > 100 lb/day

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. As seen in Section VII.C.2 above, this project does include a new emissions unit which has daily emissions greater than 100 lb/day for VOC, therefore public noticing for PE > 100 lb/day purposes is required.

c. Offset Threshold

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

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

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

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a Stationary Source Increase in Permitted Emissions (SSIPE) of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE is calculated as the Post Project Stationary Source Potential to Emit (SSPE2) minus the Pre-Project Stationary Source Potential to Emit (SSPE1), i.e. SSIPE = SSPE2 – SSPE1. This project only concerns VOC with no increase in annual emissions, as discussed in Section VII.C.2. The SSIPE for all pollutants are less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

2. Public Notice Action

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

D. Daily Emission Limits (DELs)

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

For all wine storage tank emissions units affected by this project, the DEL is stated in the form of a daily limit on tank throughput.

Proposed Rule 2201 (DEL) Conditions:

- The daily VOC emissions rate for red wine fermentation shall not exceed 3.46 lb per 1000 gallons. [District Rule 2201]
- The daily VOC emissions rate for white wine fermentation shall not exceed 1.62 lb per 1000 gallons. [District Rule 2201]
- When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed the maximum nominal tank capacity stated in the equipment description. [District Rule 2201]

E. Compliance Assurance

1. Source Testing

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

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

3. Recordkeeping

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

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

- Records of the 12-month rolling average total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201]
- 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, shall be kept. [District Rules 2201 and 4694]
- Daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201]
- All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694]

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

F. Ambient Air Quality Analysis

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

G. Compliance Certification

Rule 2201 requires the owner of a new Major Source or a source undergoing a Title I Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards. As discussed in Section VIII above, this facility is a Federal Major Modification and this project does constitute a Title I modification, therefore this requirement is applicable. The facility's compliance certification is included in Appendix C.

H. Alternative Siting Analysis

Alternative siting analysis is required for any project, which constitutes a New Major Source or a Federal Major Modification.

In addition to winery tanks, the operation of a winery requires a large number support equipment, services and structures such as raw material receiving stations, crushers, piping, filtering and refrigeration units, warehouses, laboratories, bottling and shipping facilities, and administration buildings.

Since the current project involves only a minimal increase in the winery's total tank volume and no change to any other facets of the operation, the existing site will result in the least possible impact from the project. Alternative sites would involve the relocation and/or construction of various support structures and facilities on a much greater scale, and would therefore result in a much greater impact.

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. Section 3.29 defines a significant permit modification as a "permit amendment that does not qualify as a minor permit modification or administrative amendment."

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

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

Rule 4001 New Source Performance Standards (NSPS)

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

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

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

California Health & Safety Code 41700 (Health Risk Assessment)

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

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

District Rule 4694 Wine Fermentation and Storage Tanks

The purpose of this rule is to reduce emissions of volatile organic compounds (VOC) from the fermentation and bulk storage of wine, or achieve equivalent reductions from alternative emission sources. This rule is applicable to all facilities with fermentation emissions in excess of 10 tons-VOC/year. The storage tank provisions of this rule apply to all tanks with capacity in excess of 5,000 gallons.

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

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

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

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

- The pressure-vacuum relief valve shall operate within 10% of the maximum allowable working pressure of the tank,
- The pressure-vacuum relief valve shall operate in accordance with the manufacturer's instructions, and

- The pressure-vacuum relief valve shall be permanently labeled with the operating pressure settings.
- The pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21.

The following conditions will be placed on the permits for stainless steel tanks ≥ 5,000 gallons in capacity to ensure compliance with the requirements of Section 5.2.1:

- When used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694]
- When used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694]

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

The following condition will be placed on the permits for stainless steel tanks ≥ 5,000 gallons in capacity to ensure compliance with the requirements of Section 5.2.2:

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

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

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

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

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

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

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

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

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

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

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

- All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694]

California Health & Safety Code 42301.6 (School Notice)

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

California Environmental Quality ACT (CEQA)

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.

SUMMARY OF THE PROPOSED PROJECT

The San Joaquin Valley Unified Air Pollution Control District (District) has received an Authority to Construct (ATC) application from The Wine Group, LLC. The applicant proposes to modify the existing winery to add additional wine processing tanks and associated processing equipment. The project location is 17000 East Highway 120, Ripon, California.

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

FINDING OF NO SIGNIFICANT IMPACT

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

The District has considered the Lead Agency's environmental document. Furthermore, the District has conducted an engineering evaluation of the project, incorporated herein by reference, which demonstrates that Stationary Source emissions from the project would be below the District's thresholds of significance for criteria pollutants. Thus, the District finds that through a combination of project design elements, compliance with applicable District rules and regulations, and compliance with District air permit conditions, project specific stationary source emissions will have

a less than significant impact on air quality. The District does not have authority over any of the other project impacts.

CONCLUSION

The District has considered the Lead Agency's environmental document. The District has determined that through a combination of project design elements, compliance with applicable rules and regulations, and compliance with District air permit conditions project specific stationary source emissions will have a less than significant impact on air quality. Thus, the District will issue the ATCs and file a Notice of Determination with the County Clerk's Office. The District will issue Permits to Operate after completion and inspection of the facility to ensure that it is in compliance with all permit conditions.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue Authorities to Construct N-956-319-0 through '332-0 subject to the permit conditions on the attached draft Authorities to Construct in Appendix E.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
N-956-319-0	3020-05-E	350,000 gallons	$246.00
N-956-320-0	3020-05-E	350,000 gallons	$246.00
N-956-321-0	3020-05-E	350,000 gallons	$246.00
N-956-322-0	3020-05-E	350,000 gallons	$246.00
N-956-323-0	3020-05-E	350,000 gallons	$246.00
N-956-324-0	3020-05-E	350,000 gallons	$246.00
N-956-325-0	3020-05-E	350,000 gallons	$246.00
N-956-326-0	3020-05-E	350,000 gallons	$246.00
N-956-327-0	3020-05-E	350,000 gallons	$246.00
N-956-328-0	3020-05-E	350,000 gallons	$246.00
N-956-329-0	3020-05-E	350,000 gallons	$246.00
N-956-330-0	3020-05-E	350,000 gallons	$246.00
N-956-331-0	3020-05-E	350,000 gallons	$246.00
N-956-332-0	3020-05-E	350,000 gallons	$246.00

XI. Appendices

A: BACT Guideline 5.4.14 and Top Down BACT Analysis
B: BACT Guideline 5.4.13 and Top Down BACT Analysis
C: Compliance Certification
D: Certificate of Conformity
E: Draft ATCs

Appendix A

BACT Guideline 5.4.14 and Top Down BACT Analysis

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 5.4.14*

Last Update 10/6/2009

Wine Fermentation Tank

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

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

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

Top Down BACT Analysis for VOC Emissions

Wine Fermentation

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse guideline 5.4.14, 1st quarter 2013, identifies achieved in practice BACT for wine fermentation tanks as follows:

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

The SJVUAPCD BACT Clearinghouse guideline 5.4.14, 1st quarter 2013, identifies technologically feasible BACT for wine fermentation tanks as follows:

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

Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

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

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

Step 4 - Cost Effectiveness Analysis

General Approach for Cost Effectiveness

Due to differences in processing temperature, red wine has an emissions factor of 6.2-lb VOC/1,000 gallons whereas white wine has an emissions factor of 2.5-lb/1000 gallons of fermented wine per District Rule 4694, *Wine Fermentation and Storage Tanks*. In addition, red wine fermentation batches are completed in 3 to 5 days versus 10 to 14 days for white wine fermentation. Therefore, a red wine fermentation tank of a given size will potentially operate at

significantly higher throughput and produce significantly higher emissions per unit of throughput relative to a white wine fermentation tank of the same size. As a result of these differences in emission rates, the cost effectiveness for controlling emissions from red wine will be fundamentally better than that for white wine and thus the cost effectiveness analysis will be first performed for red wine only. In the event a technology is shown to be cost effective for red wine, that particular technology will be analyzed for white wine fermentation as well.

The following emission control technologies have been determined to be technologically feasible for control of VOC emissions from wine fermentation tanks:

- Thermal Oxidation (88% control)
- Carbon Adsorption (86% control)
- Refrigerated Condenser (81% control)
- Wet Scrubber (81% control)

Recognizing that "thermal oxidation" includes both recuperative and regenerative thermal oxidizers the cost effectiveness of the following cases will be examined for the determination of BACT for wine fermentation:

Case 1 Thermal oxidation with 0% heat recovery (low capital/high operating cost)
Case 2 Regenerative thermal oxidation with 95% heat recovery (high capital/low operating cost)
Case 3 Refrigerated Condensers
Case 4 Water scrubber
Case 5 Carbon adsorption

A cost-effectiveness analysis is not required for temperature-controlled fermentation since this option is Achieved-in-Practice. To establish a comparative physical scope of each of the above cases, the District will take an industry-wide approach based of applying the five different control technology cases to red wine fermentation tanks located at the E & J Gallo Winery in Livingston, CA (Facility N-1237), rather than The Wine Group facility in Ripon, CA. The rationale for this is based on the following:

- The Gallo facility in Livingston is sufficiently representative of typical red wine fermentation facilities located at major source wineries to allow it to serve as a general model for the physical scope requirements of such facilities including The Wine Group facility in Ripon.
- The Gallo facility is currently the largest winery in the world and the average fermentation tank size is larger than that of The Wine Group facility in Ripon. Any control technology found to not be cost effective for the Gallo facility can be assumed to be not cost effective to smaller facilities such as The Wine Group as well due to economies of scale. If any technology is determined to be cost effective at Gallo, it will then be analyzed for The Wine Group facility as well to confirm cost effectiveness for the smaller operation.
- The Gallo facility was used as a basis for engineering and cost effectiveness studies in development of District Rule 4694 and substantial scope and cost information is available for this facility pertaining to the scope of control system requirements and that of the ancillary systems required to support the basic emission control units (such as ductwork and supports and the CIP systems for the ductwork). The Eichleay study details the potential application of VOC controls to this facility and addresses many of the technical issues and the general site specific factors for wineries. This study

developed two separate estimates, one for the fermentation control system installation ("Base Estimate") and a second "Utilities Estimate" to cover the clean-in-place system, the expansion of the plant electric utility and the instrument air system. District staff has reviewed the estimating methodology employed in the Eichleay estimates and found that the estimating approach is fundamentally sound and follows accepted practice in the engineering and construction industry, applying reasonable unit rates and costs for materials and labor for development of direct costs. This information is available to use as a basis for this cost effectiveness analysis. The Eichleay Base and Utilities Estimates are attached as BACT Attachment C.

Estimating Basis

Estimates of Total Capital Investment (TCI), annual costs, potential emission reductions, and the resulting cost effectiveness have been prepared for each of the control technology cases above utilizing selected portions of the Direct Costs developed by the Eichleay study. The general approach and basis of the estimates is as follows:

1. Except for specific substitutions or modifications as listed below, EPA's cost template for VOC incineration systems, as presented in the EPA Control Cost Manual, Section 3.2, Tables 2.8 and 2.9, was used. Typical site specific factors and other required direct costs not covered by the template have been extracted from the Eichleay study and inserted in the template to cover all the scope elements required for installation of controls on fermentation tanks. To ensure that all estimate cases are comparative, the EPA cost template (with EPA cost factors) was used to develop the direct cost of installing the purchased control device for all estimate cases. The control device is taken to include the upstream separator vessel which is used to separate any entrained liquids from the fermentation tank vent stream before it enters the control device.
2. All estimates are based on the general facilities design prepared by Eichleay for the Gallo winery at Livingston, CA. Using this basis, the impact of substituting different control technologies will be examined. It is assumed that the basic scope of ductwork and supports, tank modifications, ancillary systems and site specific costs will be common to all technologies.
3. The Gallo facility consists of 60 red wine fermentation tanks with a combined nominal capacity of 6,850,000 gallons. In the general facilities design as prepared by Eichleay the tanks are grouped into four separate groups of tanks, each group separately manifolded together and ducted to a separate dedicated control device (See Eichleay drawing SK-30892-001 in BACT Attachment D). The tank groupings are designated as:

   VOC-1 Seventeen (17) 100,000 gallon tanks
   VOC-2 Twelve (12) 200,000 gallon tanks
   VOC-3 Ten (10) 100,000 gallon tanks and seven (7) 50,000 gallon tanks
   VOC-4 Fourteen (14) 100,000 gallon tanks

4. Control device capacity (per the Eichleay study) is based on a peak vapor rate of 9.75 scfm/1000 gallons of wine fermenting at an 85 ^{0}F fermentation temperature. Since the Eichleay study was based solely on using a thermal incinerator as the control device, an additional 23.6% flow capacity is included in the control device capacity to account for the combustion air which must be added since the vent stream from the tank contains only

CO2, water and ethanol. Other non-combustion control technologies do not require additional air and may thus be rated at a lower flow capacity. On this basis, the four control devices have been determined to require the following capacities:

Red Fermentation Capture and Control Systems Proposed for Gallo-Livingston Per Eichleay Engineering Study

VOC Device Number	No. of Tanks	Fermentation Tank Capacity (gallons)	Total Capacity of Red Fermentation Tanks (gallons)	Combustion Control Device Flow Capacity per the Eichleay Study (SCFM)	Non-Combustion Control Device Flow Capacity (SCFM)
VOC-1	17	100,000	1,700,000	16,000	12,900
VOC-2	12	200,000	2,400,000	22,000	17,800
VOC-3	10	100,000	1,350,000	13,000	10,500
	7	50,000			
VOC-4	14	100,000	1,400,000	13,000	10,500
Total	60		6,850,000	64,000	51,700

5. Capacities and costs for control devices for each case were developed based on the capacities of the four VOC systems listed above. Sources for pricing of control devices were as follows:

Recuperative Thermal Oxidizers:	EPA Cost Control Manual, Section 3.2, Chapter 2, Equation 2.29
Regenerative Thermal Oxidizers:	Vendor quotations obtained by Eichleay Engineering
Carbon Adsorption System:	Technical Assessment Document, p.17
Condensers:	EPA Cost Control Manual, Section 3.1, Chapter 2
Water Scrubbers:	STI Study[1], Table 5

BACT Attachment B presents the developed capacities and estimated purchase prices for the control devices for each estimate case.

6. Purchased equipment costs for the knock out vessels (common to all estimate cases) have been extracted from the main Eichleay estimate. A purchased material cost of $148,000 for the knock out vessels was taken from page 15 of Eichleay's main estimate. Sizing criteria is presented in the Eichleay study and the pricing was developed based on

[1] Sonoma Technology, Inc., Control Technology Evaluation: Wineries – Fermentation Processes, Control Measures Assessment STI-903340-2429a-CMA, October 21, 2003.

Eichleay's in-house estimating data for this type of equipment derived from purchasing experience on previous projects.

7. Direct costs taken from the Eichleay study will be used for estimation of site specific and other costs not covered by the equipment factors in the EPA VOC incineration cost template. These costs include site preparation, ductwork, structural steel pipeway and associated foundations for ductwork support, clean-in-place (CIP) system, expansion of the plant electric utility, modification of fermentation tanks for duct connections, and the instrumentation system for control of tank foam over.
8. Site preparation costs to develop a plot area for the VOC control equipment have been extracted from page 4 of the main Eichleay estimate which the District considers to be typical of the requirements which would be encountered at most existing major wineries. Most wineries are constructed with the tanks located in tight groups with minimal spacing between the tanks, requiring that control devices be installed on the perimeter of the winery, typically undeveloped agricultural land. Extracted costs from the Eichleay include subcontract pricing for demolition of an existing road, installation and compaction of fill, and new pavement to develop a plot space sufficient to install four new control devices with upstream separators and associated piping and ducting. These costs total $1,254,000 and are based on budgetary subcontract pricing obtained by Eichleay.
9. The total direct cost for ductwork was extracted from the Eichleay study. A material cost of $1,104,800 and an installation labor cost of $940,500 for the ductwork has been extracted from pages 16 through 23 of the main Eichleay estimate. California sales tax of 8% and freight charges of 3% were added to the materials cost to arrive at a direct cost of $2,167,000 for the ductwork. Estimated ductwork quantities are based on Eichleay plan drawing SK-30913-001 and the process flow diagram presented in Eichleay drawing SK-30892-003 (see BACT Attachment D). Unit costs for fabricated stainless steel ductwork were based on a budgetary quotation obtained by Eichleay from Viron International, a ductwork spool fabricator.
10. A material cost of $1,779,600 and an installation labor cost of $752,000 for structural steel to support the new ductwork system and associated piping has been extracted from the totals presented on page 8 of the Eichleay base estimate. California sales tax of 8% and freight charges of 3% were added to the materials cost to arrive at a direct cost of $2,727,000 for the structural steel. Steel design and quantities in this estimate are based on Eichleay plan drawing SK-30913-001 and the steel structure sections presented in Eichleay drawing SK-S12 (see BACT Attachment D). Fabricated steel pricing was based on a quotation obtained by Eichleay from a structural steel fabricator in Bakersfield, CA.
11. Costs for heavy lift equipment including heavy cranes and use of a helicopter operation to set steel structures and ductwork was taken from page 24 of the main Eichleay estimate. Pricing was obtained by Eichleay from a helicopter firm based out of the Fresno Airport.
12. The Eichleay utility estimate developed a total direct cost of $5,859,000 for both the CIP system and the expansion of the plant electric utility. Eichleay drawing SK-30892-004 provides a piping and instrumentation diagram for the CIP chemicals storage and supply system. Drawing SK-30892-006 illustrates the CIP spray header installation in the ductwork. Expansion of the electric utility included new 12 kV switchgear and 1500 kVA transformer to supply power from the existing switchyard to the project (see Eichleay drawings 30892-SK-E01 and E02). A direct allocated cost of $314,000 for the electric utility expansion was extracted from page 8 of the utilities estimate. Total Direct Cost for this item is taken as 391,000 after pro-rating the Contractor's Fee and other unallocated construction expense from the estimate. The balance of the Total Direct Cost (labeled

"Field Cost" in the estimate summary sheet) is the direct cost of $5,468,000 for the CIP system (this figure includes a small amount for expansion of the plant instrument air system also).

13. The direct costs (materials, labor, and subcontracts) to modify the fermentation tanks for installation of new nozzles required for connection of ductwork includes costs for build and teardown of scaffolding in each tank, demolition of existing insulation, machine cutting of each tank, fabrication and installation of new nozzles, and post-weld passivation of the tank. These costs are taken from pages 15 and 16 of the main estimate and total $487,000.
14. The direct cost for an instrumentation system for control of tank foam over was taken from page 13 of the main Eichleay estimate. The materials cost of $514,800 for capacitance probes, actuated butterfly valves and switches to be installed on each tank was adjusted to include California sales tax and a 3% freight cost. Installation labor of $57,600 from page 13 was added to yield a total direct cost for this item of $629,000. Design basis for the system is presented in Eichleay drawing SK-30892-007 (see BACT Attachment D). Unit material costs are based on budgetary vendor's pricing obtained by Eichleay. Unit labor factors and costs are based on Eichleay's in-house estimating data.
15. The EPA model cost factor for foundations and supports is 8% of purchased equipment cost which in this case is applicable to only the control device and the knock out vessel. It thus does not factor in the costs of foundations for the substantial steel structures required for this project. Therefore, this cost was extracted from the Eichleay study and added as a direct cost in the estimate. Foundation design for the pipeway consists of drilled concrete piers for support of pipeway structures which require a minimal footprint relative to conventional footers and for this reason are the standard approach for support under new steel columns when they are being installed in congested areas in existing industrial facilities. Direct costs (material + labor + subcontract) for concrete pier foundations have been extracted from page 5 of the estimate ($247,000) which covers drilling, rebar fabrication and setting, forming, pouring and finishing of the drilled piers. Estimated quantities are based on Eichleay plan drawing SK-30913-001 and the steel structure sections presented in Eichleay drawing SK-S12. The unit costs were based on Eichleay's historical experience with subcontract pricing for these items.
16. Construction Expense and Contractor's Fee have been included in the direct costs at 8% and 10 percent of all other direct costs respectively. These percentages reflect those used in the Eichleay study and are typical based on District Staff's experience. For comparison, Peters & Timmerhaus[2] recommend 10% and 7% for the items respectively.
17. Annual natural gas usage of 67,412 therms was estimated for the Gallo Livingston design by Eichleay (Appendix G of the Eichleay study) based on a 12 week season and 95% thermally efficient RTO's operating 50% of the time with an ethanol concentration of 6,034 ppm for 50% of the time and in hot standby the other 50% with allowance for startups. This natural gas usage will be used as the basis for the cost effectiveness calculations, factored as required for the thermal efficiency basis of the proposed control unit.
18. Long term natural gas price is assumed to be $8.00 per MMBtu
19. Power consumption for the Gallo facility is estimated by Eichleay at 586 kW (Appendix G of the Eichleay study). Since essentially all this power is consumed by the induced draft fans at the VOC control unit, this power basis will be assumed to be the same for the

[2] Peters,Max and Klaus Timmerhaus, Plant Design and Economics for Chemical Engineers, McGraw-Hill, New York, 1968, p. 115.

induced draft fans associated with all control technologies, factored down as required for control units not requiring combustion air.

20. Power consumption will be based on a 120 day crush season and a power cost of $0.11/kWh.
21. BACT Attachment C presents a tabulation of the utilities and other annual costs for each estimate case as well as the details of the basis and calculations.
22. Costs presented are 2009 basis. A conservative assumption of 0% escalation since that date is made.
23. Engineering cost and construction management costs have been included at 15% and 3% of the Total Direct Cost based on the percentages applied in the Eichleay Study. These percentages reflect those used in the Eichleay study and are typical based on District Staff's experience. A value of 15% for engineering is generally less than that recommended by Peters & Timmerhaus[3] who indicate engineering costs typically are in the range of 4-21% of Total Capital Investment with a median value of 13%.
24. Calculated VOC emission reductions will be debited for collateral NOx and VOC production from firing of natural gas where applicable based on 1 lb NOX = 1 lb VOC. For natural gas, emissions are based on 0.1 lb-NOx/MMBtu and 0.0055 lb-VOC/MMBtu per AP-42. Calculated emissions from natural gas firing are presented in the following table:

Natural Gas Combustion Emissions					
Item	**Case 1 Thermal Ox**	**Case 2 RTO**	**Case 3 Refrigerated Condenser**	**Case 4 Water Scrubber**	**Case 5 Carbon Adsorption**
Natural Gas Combustion MMBtu/year	134,820	6,741	0	0	0
Annual NOx Emissions From Natural Gas tons-NOx/year	6.7	0.34	0	0	0
Annual VOC Emissions From Natural Gas tons-VOC/year	0.4	0.02	0	0	0
Total NOx + VOC from Natural Gas tons per year	**7.1**	**0.4**	**0**	**0**	**0**

25. Contingency has been included at 10% of the sum of Total Direct Cost and Total Indirect Cost. This value is given as typically 8-20% with an average of 10% by Peters and Timmerhaus[4]

[3] Peters,Max and Klaus Timmerhaus, Plant Design and Economics for Chemical Engineers, McGraw-Hill, New York, 1968, p. 115.
[4] Peters, Max and Klaus D. Timmerhaus, Plant Design and Economics for Chemical Engineers, McGraw-Hill, New York, 1968, p.116.

26. Operating labor requirement was estimated one full time operator for all four VOC control systems with 3 shifts per day for the duration of the 120 day crush operation.
27. Maintenance labor requirement was estimated at 80 hours per week for all four control systems during a total of 20 weeks per year.
28. Operating and maintenance labor cost was included at $19.50/hour and $33.00 for year 2005 respectively per the Eichleay study and escalated at 4% to 2009.
29. Maintenance materials have been estimated at 3% of TCI. (Peters and Timmerhaus give a typical value of 6% for general process industries).
30. Total Capital Investment has been annualized based on a 10 year equipment life and a 10% opportunity cost for capital (CRF = 0.163).
31. Calculation of potential emissions from fermentation is based upon the red wine emission factor of 6.2 lb-ethanol per 1000 gallons of red wine and upon the maximum potential wine production capacity for the fermentation tanks. Maximum annual throughput capacity is calculated as follows:

    Red crush season duration of 120 days

    Five day batch processing period for red wine fermentation; maximum number of batches per season = 120 days/season ÷ 5 days/ batch = 24 batches per season

    Total red wine fermenter volume in this estimate = 6,850,000 gallons

    Maximum fill for red wine fermenter (due to foaming/expansion) = 80%

    Maximum wine production capacity = working capacity of fermenters x # batches per season = 6,850,000 x 80% x 24 = 131,520,000 gallons per year

    VOC Emissions = 131,520,000 gallons/year x 6.2 lb-VOC/1000 gallons
    = 815,400 lb-VOC/year = **407.7 tons-VOC/year**

Cost Effectiveness Estimates

Table 1 presents the development of Total Capital Investment (TCI) for all capture and control cases based on the general facilities design prepared by Eichleay (including site specific costs and CIP) and Table 2 presents the associated annual costs, emission reductions, and cost effectiveness for each capture and control case.

Table 1
Total Capital Investment for VOC Control of Red Wine Fermentation

	Case 1 Thermal Ox	Case 2 RTO	Case 3 Refrigerated Condenser	Case 4 Water Scrub	Case 5 Carbon Adsorption
Direct Costs					
Purchased Equipment Costs					
Control Device	$745,000	$1,854,000	$3,003,000	$396,000	$1,667,000
Knock Out Vessels	$148,000	$148,000	$148,000	$148,000	$148,000
Subtotal Equipment (A)	$893,000	$2,002,000	$3,151,000	$544,000	$1,815,000
Instrumentation (0.10 x A)	$89,000	$200,000	$315,000	$54,000	$182,000
Sales Tax (0.08 x A)	$71,000	$160,000	$252,000	$44,000	$145,000
Freight (0.05 x A)	$45,000	$100,000	$158,000	$27,000	$91,000
Purchased Equipment Cost (PEC)	$1,098,000	$2,462,000	$3,876,000	$669,000	$2,233,000
Direct Installation Costs for Purchased Equipment					
Foundations and Supports	$88,000	$197,000	$310,000	$54,000	$179,000
Handling & Erection	$154,000	$345,000	$543,000	$94,000	$313,000
Electrical	$44,000	$98,000	$155,000	$27,000	$89,000
Piping	$22,000	$49,000	$78,000	$13,000	$45,000
Direct Costs Not Included Above					
Structural Steel Pipeway	$2,727,000	$2,727,000	$2,727,000	$2,727,000	$2,727,000
Ductwork	$2,167,000	$2,167,000	$2,167,000	$971,000	$971,000
Pipeway Foundations	$247,000	$247,000	$247,000	$247,000	$247,000
Site Prep	$1,254,000	$1,254,000	$1,254,000	$1,254,000	$1,254,000
CIP System	$5,468,000	$5,468,000	$5,468,000	$5,468,000	$5,468,000
Electrical Utility	$391,000	$391,000	$391,000	$391,000	$391,000
Tank Modifications	$487,000	$487,000	$487,000	$487,000	$487,000
Foam Over Control System	$629,000	$629,000	$629,000	$629,000	$629,000
Heavy Lift Equipment	$1,192,000	$1,192,000	$1,192,000	$1,192,000	$1,192,000
Subtotal	$15,968,000	$17,713,000	$19,524,000	$14,223,000	$16,225,000
Construction Expense	$1,277,000	$1,417,040	$1,561,920	$1,137,840	$1,298,000
Contractor's Fee	$1,597,000	$1,771,300	$1,952,400	$1,422,300	$1,622,500
Total Direct Costs	$18,842,000	$20,901,340	$23,038,320	$16,783,140	$19,145,500
Indirect Costs					
Engineering	$2,826,000	$3,135,000	$3,456,000	$2,517,000	$2,872,000
Construction Management Expense	$565,000	$627,000	$691,000	$503,000	$574,000
Start Up	$22,000	$49,000	$78,000	$13,000	$45,000
Performance Test	$11,000	$25,000	$39,000	$7,000	$22,000
Contingencies	$2,227,000	$2,474,000	$2,730,000	$1,982,000	$2,266,000
Total Indirect Costs	$5,651,000	$6,310,000	$6,994,000	$5,022,000	$5,779,000
Total Capital Investment	**$21,619,000**	**$24,023,000**	**$26,518,000**	**$19,245,000**	**$22,004,000**

Table 2
Annual Costs for VOC Control of Red Wine Fermentation

Control Device	Case 1 Thermal Ox	Case 2 RTO	Case 3 Refrigerated Cond.	Case 4 Water Scrubber	Case 5 Carbon Adsorption
Total Capital Investment	$21,619,000	$24,023,000	$26,518,000	$19,245,000	$22,004,000
Direct Annual Costs					
Labor & Materials					
Operating Labor (.5 hr/shift-unit @ $22.81/hour)	$65,700	$65,700	$65,700	$65,700	$65,700
Supervisor (15% of operator cost)	$9,900	$9,900	$9,900	$9,900	$9,900
Operating Materials (15% of total maintenance cost)	$104,700	$112,500	$123,700	$91,000	$103,400
Maintenance Labor (0.5 hr/shift-unit@ $38.60/hour)	$49,400	$29,200	$29,200	$29,200	$29,200
Maintenance Materials (3% of TCI)	$648,600	$720,700	$795,500	$577,400	$660,100
Utilities	$1,263,600	$239,500	$399,600	$2,194,400	$407,200
Total Direct Annual Cost	**$2,141,900**	**$1,177,500**	**$1,423,600**	**$2,967,600**	**$1,275,500**
Indirect Annual Costs					
Overhead (60% of labor & Mat'ls)	$527,000	$562,800	$614,400	$463,900	$521,000
Administrative Charges (2% of TCI)	$432,400	$480,500	$530,400	$384,900	$440,100
Property Taxes (2% TCI)	$432,400	$480,500	$530,400	$384,900	$440,100
Insurance (1% TCI)	$216,200	$240,200	$265,200	$192,500	$220,000
Capital Recovery (CRF = 0.163)	$3,523,900	$3,915,700	$4,322,400	$3,136,900	$3,586,700
Total Indirect Annual Cost	**$5,131,900**	**$5,679,700**	**$6,262,800**	**$4,563,100**	**$5,207,900**
Total Annualized Cost	**$7,273,800**	**$6,857,200**	**$7,686,400**	**$7,530,700**	**$6,483,400**
Emission Reductions					
Uncontrolled Emissions tpy	407.70	407.70	407.70	407.70	407.70
Collection & Control Efficiency	88%	88%	81%	81%	86%
Annual Emission Reduction tpy	358.78	358.78	330.24	330.24	350.62
Natural Gas Emissions tpy	7.11	0.36	0.00	0.00	0.00
Net Emission Reduction tpy	351.67	358.42	330.24	330.24	350.62
Cost Effectiveness $/ton	**$20,700**	**$19,100**	**$23,300**	**$22,800**	**$18,500**

Step 5 – Select BACT

As estimated in Tables 1 and 2, the cost effectiveness of all technologies evaluated lie between $18,500 and $23,300 per ton. As discussed previously, since the evaluation basis for this determination was the control of emissions from large red wine fermenters it may be inferred that the calculated values are significantly lower than that which would be evaluated for white wine fermenters due to the lower emission factor and lower potential wine production rate for white wine fermentation tanks. In addition, since this study evaluated emission controls on what is currently the largest red wine fermentation plant in the world, the results are applicable to fermentation tanks of all sizes due to 1) wineries with smaller tanks will be less cost effective due to increasing redundancy and/or loss of economies of scale and 2) proposed new wineries with a capacity equal to or exceeding Gallo-Livingston would be less cost effective since, due to market considerations which are currently driving the industry toward smaller fermentation batches of more premium wine, a new fermentation facility would most likely be configured with a larger number of smaller tanks and a corresponding greater number of VOC control systems per gallon of capacity. Therefore, the evaluated cost effectiveness values above represent the low end of the range of cost effectiveness and any direct evaluation of The Wine Group facility in Ripon is expected to yield a value which is significantly higher than those above.

The lowest evaluated cost effectiveness of $18,500 per ton exceeds the District's cost effectiveness threshold of $17,500 per ton for VOC. Therefore, since all Technologically Feasible BACT options have been demonstrated to not be cost effective, the fermentation tanks for The Wine Group in Ripon will be permitted for operation with Achieved-in-Practice BACT (operation with open top tank and a maximum average fermentation temperature of 95 ^{0}F).

Attachments

BACT Attachment A: Eichleay Estimates for Fermentation Controls at Gallo Livingston
BACT Attachment B: Sizing and Purchase Costs for Control Devices
BACT Attachment C: Utilities and Other Annual Costs
BACT Attachment D: Eichleay Drawings

BACT Attachment A

Eichleay Estimates for Fermentation Controls at Gallo Livingston

Eichleay Engineers Inc. of California

ESTIMATE SUMMARY SHEET

Client Name: Wine Institute — Estimated By: P.H.M.

Job Number: 30913 — PRELIMINARY ESTIMATE — Checked By: R.H.

Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters — Rev. 2 — Date: 6/24/05

CODE	ITEM DESCRIPTION	TOTAL COSTS				GRAND TOTAL
		RTO-1	RTO-2	RTO-3	RTO-4	
	SUMMARY					
2.00	Site Construction	$1,253,680	$5,450	$5,450	$5,450	$1,270,030
3.00	Concrete	$208,450	$81,500	$85,500	$69,500	$444,950
4.00	Masonry					$0
5.00	Metals	$1,499,010	$395,028	$361,670	$275,846	$2,531,554
6.00	Wood & Plastics					$0
7.00	Thermal & Moisture Protection					$0
8.00	Door & Windows					$0
9.00	Finishes					$0
10.00	Specialties	$8,620	$0	$0	$0	$8,620
11.00	Equipment					$0
12.00	Furnishings					$0
13.00	Special Construction					$0
14.00	Conveying Systems					$0
15.00	Mechanical HVAC & Plumbing					$0
16.00	Electrical	$116,439	$28,212	$27,326	$32,226	$204,203
17.00	Instruments & Controls	$340,195	$199,195	$199,195	$199,195	$937,780
18.00	Process Piping & Equipment	$1,553,959	$1,572,913	$1,438,695	$1,361,843	$5,927,410
	Sub Total	$4,980,353	$2,282,298	$2,117,836	$1,944,060	$11,324,547
	Tax & Freight	282,779	125,680	113,112	106,828	$628,398
	General Conditions	$421,051	$192,638	$178,476	$164,071	$956,236
	General Contractor Mark-Up	$478,373	$220,042	$204,924	$187,478	$1,090,818
	Field Costs - Sub Total	$6,162,556	$2,820,657	$2,614,348	$2,402,438	$13,999,999
	Design Fee Allowance	924,383	423,099	392,152	360,366	$2,100,000
	Construction Management Allowance	$184,877	$84,620	$78,430	$72,073	$420,000
	Plan Check & Permit Fee Allowance	$21,843	$9,708	$8,737	$8,252	$48,539
	Third Party Inspection Allowance	$16,382	$7,281	$6,553	$6,189	$36,404
	Escalation	$281,415	$131,806	$125,029	$119,047	$657,297
	Project Contingency	$2,070,463	$920,206	$828,185	$782,175	$4,601,028
	Sub Total	$9,661,919	$4,397,375	$4,053,435	$3,750,538	$21,863,267
	Owners Costs	$92,438	$42,310	$39,215	$36,037	$210,000
	Round Off	-$357	$315	$350	$425	$733
	GRAND TOTAL	$9,754,000	$4,440,000	$4,093,000	$3,787,000	$22,074,000

Prepared By: [signature] Date: 6/24/05

Approved By [signature] Date: 6/24/05

Eichleay Engineers Inc. of California

ESTIMATE SUMMARY SHEET

Client Name: Wine Institute — Estimated By: P.H.M.

Job Number: 30913 — PRELIMINARY ESTIMATE — Checked By: R.H.

Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters — Rev. 2 — Date: 6/24/05

W/O ESCALATION & OWNERS COSTS

CODE	ITEM DESCRIPTION	TOTAL COSTS RTO-1	RTO-2	RTO-3	RTO-4	GRAND TOTAL
	SUMMARY					
2.00	Site Construction	$1,253,680	$5,450	$5,450	$5,450	$1,270,030
3.00	Concrete	$208,450	$81,500	$85,500	$69,500	$444,950
4.00	Masonry					$0
5.00	Metals	$1,499,010	$395,028	$361,670	$275,846	$2,531,554
6.00	Wood & Plastics					$0
7.00	Thermal & Moisture Protection					$0
8.00	Door & Windows					$0
9.00	Finishes					$0
10.00	Specialties	$8,620	$0	$0	$0	$8,620
11.00	Equipment					$0
12.00	Furnishings					$0
13.00	Special Construction					$0
14.00	Conveying Systems					$0
15.00	Mechanical HVAC & Plumbing					$0
16.00	Electrical	$116,439	$28,212	$27,326	$32,226	$204,203
17.00	Instruments & Controls	$340,195	$199,195	$199,195	$199,195	$937,780
18.00	Process Piping & Equipment	$1,553,959	$1,572,913	$1,438,695	$1,361,843	$5,927,410
	Sub Total	$4,980,353	$2,282,298	$2,117,836	$1,944,060	$11,324,547
	Tax & Freight	282,779	125,680	113,112	106,828	$628,398
	General Conditions	$421,051	$192,638	$178,476	$164,071	$956,236
	General Contractor Mark-Up	$478,373	$220,042	$204,924	$187,479	$1,090,818
	Field Costs - Sub Total	$6,162,656	$2,820,657	$2,614,348	$2,402,438	$13,999,999
	Design Fee Allowance	924,383	423,099	392,152	360,366	$2,100,000
	Construction Management Allowance	$184,877	$84,620	$78,430	$72,073	$420,000
	Plan Check & Permit Fee Allowance	$21,843	$9,708	$8,737	$8,252	$48,539
	Third Party Inspection Allowance	$16,382	$7,281	$6,553	$6,189	$36,404
	Escalation					$0
	Project Contingency	$2,070,463	$920,206	$828,185	$782,175	$4,601,028
	Sub Total	$9,380,504	$4,265,569	$3,928,405	$3,631,491	$21,205,969
	Owners Costs					$0
	Round Off	$31				$31
	GRAND TOTAL	$9,380,536	$4,265,569	$3,928,405	$3,631,491	$21,206,000

Prepared By: Paul H. Mc

Date: 6/24/05

Approved By R.N. Nedger

Date: 6/24/05

Eichleay Engineers Inc. of California

ESTIMATE SUMMARY SHEET

Client Name: Wine Institute — Estimated By: P.H.M.

Job Number: 30913 — PRELIMINARY ESTIMATE — Checked By: R.H.

Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters — Rev. 2 — Date: 6/24/05

W/O Escalation & Owners Costs

CODE	ITEM DESCRIPTION	TOTAL MHRS	TOTAL COSTS LABOR	MAT'L	SUBCON.	TOTAL
	SUMMARY					
2.00	Site Construction		$0	$0	$1,270,030	$1,270,030
3.00	Concrete		$0	$0	$444,950	$444,950
4.00	Masonry		$0	$0	$0	$0
5.00	Metals		$711,959	$1,779,595	$40,000	$2,531,554
6.00	Wood & Plastics		$0	$0	$0	$0
7.00	Thermal & Moisture Protection		$0	$0	$0	$0
8.00	Door & Windows		$0	$0	$0	$0
9.00	Finishes		$0	$0	$0	$0
10.00	Specialties		$260	$0	$8,360	$8,620
11.00	Equipment		$0	$0	$0	$0
12.00	Furnishings		$0	$0	$0	$0
13.00	Special Construction		$0	$0	$0	$0
14.00	Conveying Systems		$0	$0	$0	$0
15.00	Mechanical HVAC & Plumbing		$0	$0	$0	$0
16.00	Electrical		$65,016	$85,787	$53,400	$204,203
17.00	Instruments & Controls		$140,550	$672,230	$125,000	$937,780
18.00	Process Piping & Equipment		$1,555,068	$3,175,093	$1,197,250	$5,927,411
	Sub Total		$2,472,853	$6,712,705	$3,138,990	$11,324,548
	Tax & Freight (11%)					$628,398
	General Conditions (8%)					$956,236
	General Contractor Mark-Up (10%)					$1,090,818
	Field Costs - Sub Total					$13,999,999
	Design Fee Allowance (15%)					$2,100,000
	Construction Management Allowance (3%)					$420,000
	Plan Check & Permit Fee Allowance (2%)					$48,539
	Third Party Inspection Allowance (1.5%)					$36,404
	Escalation					
	Project Contingency					$4,601,028
	Sub Total					$21,205,970
	Owners Costs					$0
	Round Off					$30
	GRAND TOTAL					$21,206,000

Prepared By: [signature] Date: 6/24/05

Approved By [signature] Date: 6/24/05

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Engineers Inc. of CA

PRELIMINARY ESTIMATE

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

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CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	020 - Site Construction												
1	Excavation allowance for voc-1		cy					50.00	50.00				
2	Excavation allowance for voc-2	109	cy					50.00	50.00			5,450	5,450
3	Excavation allowance for voc-3	109	cy					50.00	50.00			5,450	5,450
4	Excavation allowance for voc-4	109	cy					50.00	50.00			5,450	5,450
1	Install and compact clean fill for VOC area	25000	cy					35.00	35.00			875,000	875,000
1	Allowance to demo road	1780	sy					6.00	6.00			10,680	10,680
1	Install asphalt in new expanded area	92000	sf					4.00	4.00			368,000	368,000
	including road												
	TOTAL - Site Construction											1,270,030	1,270,030

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Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

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CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	MAT'L	SUBCON.	TOTAL	TOTAL COSTS LABOR	MAT'L	SUBCON.	TOTAL
	030 - Concrete												
	VOC -1 Duct sections												
1	Install drilled piers (20) rack #1	20	ea					1,000.00	1,000.00			20,000	20,000
1	Install drilled piers (20) rack #2	20	ea					1,000.00	1,000.00			20,000	20,000
1	Install drilled piers (42) for main rack inside plant	42	ea					1,500.00	1,500.00			63,000	63,000
1	Install drilled piers (46) for main rack outside plant	46	ea					700.00	700.00			32,200	32,200
1	Install drilled piers (32) for main rack by VOC's	32	ea					700.00	700.00			22,400	22,400
1	Install foundation for VOC-1 & tank	110	cy					450.00	450.00			49,500	49,500
	VOC -2 Duct sections												
2	Install drilled piers (16) rack #3	16	ea					1,000.00	1,000.00			16,000	16,000
2	Install drilled piers (16) rack #4	16	ea					1,000.00	1,000.00			16,000	16,000
2	Install foundation for VOC-1 & tank	110	cy					450.00	450.00			49,500	49,500
	VOC -3 Duct sections												
3	Install drilled piers (16) rack #6	16	ea					1,000.00	1,000.00			16,000	16,000
3	Install drilled piers (20) rack #7	20	ea					1,000.00	1,000.00			20,000	20,000
3	Install foundation for VOC-1 & tank	110	cy					450.00	450.00			49,500	49,500
	VOC -4 Duct sections												
4	Install drilled piers (0) rack #4		ea					1,000.00	1,000.00				
4	Install drilled piers (20) rack #5	20	ea					1,000.00	1,000.00			20,000	20,000
4	Install foundation for VOC-1 & tank	110	cy					450.00	450.00			49,500	49,500
	Allowance for building pad	3	cy					450.00	450.00			1,350	1,350
	TOTAL - Concrete											444,950	444,950

Eichleay Engineers Inc. of CA.

PRELIMINARY ESTIMATE

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	050 - Metals												
	VOC -1 Duct Section												
1	Fab & install main duct rack frames (inside unit - 45 ft)	21	ea	20	420	65.00	6,500.00		7,800.00	27,300	136,500		163,800
1	Fab & install main duct rack top connection members	640	ft	0.75	480	65.00	45.00		93.75	31,200	28,800		60,000
1	Fab & install main duct rack bottom connection members	640	ft	0.75	480	65.00	45.00		93.75	31,200	28,800		60,000
1	Fab & install main duct rack top cross bracing	80	ea	6	480	65.00	690.00		1,080.00	31,200	55,200		86,400
1	Fab & install main duct rack lower cross bracing	40	ea	6	240	65.00	950.00		1,340.00	15,600	38,000		53,600
1	Fab & install main duct rack frames (outside unit - 25 ft)	23	ea	10	230	65.00	4,420.00		5,070.00	14,950	101,660		116,610
1	Fab & install main duct rack top connection members	680	ft	0.5	340	65.00	45.00		77.50	22,100	30,600		52,700
1	Fab & install main duct rack top cross bracing	92	ea	4	368	65.00	600.00		860.00	23,920	55,200		79,120
1	Fab & install main duct rack lower cross bracing	22	ea	4	88	65.00	700.00		960.00	5,720	15,400		21,120
1	Fab & install main duct rack frames (VOC area)	16	ea	4	64	65.00	1,430.00		1,690.00	4,160	22,880		27,040
1	3' wide grating on main rack	2700	sf	0.15	405	65.00	19.00		28.75	26,325	51,300		77,625
1	handrails	1800	lf	0.3	540	65.00	75.00		94.50	35,100	135,000		170,100
1	Allowance for grating from main rack to existing catwalks	1	lot	50	50	65.00	5,000.00		8,250.00	3,250	5,000		8,250
1	Allowance for caged ladders	200	ft	0.5	100	65.00	50.00		82.50	6,500	10,000		16,500
1	15 x 8 towers	5	ea	80	400	65.00	14,000.00		19,200.00	26,000	70,000		96,000
1	15' top level connection beams	8	ea	8	64	65.00	550.00		1,070.00	4,160	4,400		8,560
1	cross bracing on top open sections	4	ea	8	32	65.00	300.00		820.00	2,080	1,200		3,280
1	15 x 15 towers	5	ea	80	400	65.00	18,000.00		23,200.00	26,000	90,000		116,000
1	15' top level connection beams	8	ea	8	64	65.00	550.00		1,070.00	4,160	4,400		8,560
1	cross bracing on top open sections	4	ea	8	32	65.00	300.00		820.00	2,080	1,200		3,280
1	3' wide grating on walkway 1 & 2	810	sf	0.15	121.5	65.00	19.00		28.75	7,898	15,390		23,288
1	3' wide grating to tanks	510	sf	0.15	76.5	65.00	19.00		28.75	4,973	9,690		14,663
1	handrails	920	lf	0.3	276	65.00	75.00		94.50	17,940	69,000		86,940
1	grating to existing catwalks	120	sf	0.15	18	65.00	19.00		28.75	1,170	2,280		3,450

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

Eichleay Engineers Inc. of CA

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	VOC-2 Duct Section												
2	15 x 15 towers	4	ea	20	80	65.00	20,000.00		21,300.00	5,200	80,000		85,200
2	20' top level connection beams	6	ea	2	12	65.00	700.00		830.00	780	4,200		4,980
2	cross bracing on top open sections	3	ea	2	6	65.00	400.00		530.00	390	1,200		1,590
2	15 x 15 towers	3	ea	20	60	65.00	20,000.00		21,300.00	3,900	60,000		63,900
2	15' top level connection beams	4	ea	2	8	65.00	550.00		680.00	520	2,200		2,720
2	cross bracing on top open sections	2	ea	2	4	65.00	300.00		430.00	260	600		860
2	15 x 20 towers - shared vertical colums	2	ea	20	40	65.00	20,000.00		21,300.00	2,600	40,000		42,600
2	15 x 15 tower	1	ea	20	20	65.00	10,000.00		11,300.00	1,300	10,000		11,300
2	3' wide grating on walkway 3, 4' wide on walkway 4	945	sf	0.15	141.75	65.00	19.00		28.75	9,214	17,955		27,169
2	3' wide grating to tanks	360	sf	0.15	54	65.00	19.00		28.75	3,510	6,840		10,350
2	handrails	820	lf	0.3	246	65.00	75.00		94.50	15,990	61,500		77,490
2	grating to existing catwalks	165	sf	0.15	24.75	65.00	19.00		28.75	1,609	3,135		4,744
	VOC-3 Duct Section												
3	20 x 8 towers	3	ea	20	60	65.00	15,000.00		16,300.00	3,900	45,000		48,900
3	20' top level connection beams	6	ea	2	12	65.00	700.00		830.00	780	4,200		4,980
3	cross bracing on top open sections	3	ea	2	6	65.00	400.00		530.00	390	1,200		1,590
3	15 x 8 towers	1	ea	20	20	65.00	14,000.00		15,300.00	1,300	14,000		15,300
3	15 x 15 towers	5	ea	20	100	65.00	18,000.00		19,300.00	6,500	90,000		96,500
3	15' top level connection beams	8	ea	2	16	65.00	550.00		680.00	1,040	4,400		5,440
3	cross bracing on top open sections	4	ea	2	8	65.00	300.00		430.00	520	1,200		1,720
3	3' wide grating on walkway 6 & 7	810	sf	0.15	121.5	65.00	19.00		28.75	7,898	15,390		23,288
3	3' wide grating to tanks	510	sf	0.15	76.5	65.00	19.00		28.75	4,973	9,690		14,663
3	handrails	920	lf	0.3	276	65.00	75.00		94.50	17,940	69,000		86,940
3	grating to existing catwalks	60	sf	0.15	9	65.00	19.00		28.75	585	1,140		1,725

Eichleay Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	VOC-4 Duct Section												
4	15 x 15 towers	5	ea	20	100	65.00	18,000.00		19,300.00	6,500	90,000		96,500
4	15' top level connection beams	8	ea	2	16	65.00	550.00		680.00	1,040	4,400		5,440
4	cross bracing on top open sections	4	ea	2	8	65.00	300.00		430.00	520	1,200		1,720
4	shared end section with voc-2	1	ea	40	40	65.00	10,000.00		12,600.00	2,600	10,000		12,600
4	3' wide grating on walkway 7	405	sf	0.15	60.75	65.00	19.00		28.75	3,949	7,695		11,644
4	3' wide grating to tanks	450	sf	0.15	67.5	65.00	19.00		28.75	4,388	8,550		12,938
4	handrails	840	lf	0.3	252	65.00	75.00		94.50	16,380	63,000		79,380
ALL	Allowance for additional supports & grating	1	lot	500	500	65.00	70,000.00		102,500	32,500	70,000		102,500
1	Crane to install main rack outside plant area	3	wks					2,000.00	2,000.00			6,000	6,000
1	(40 ton)	1	lot	120	120	75.00			9,000.00	9,000			9,000
1	Allowance for small cranes to position steel (3)	6	mo	160	960	75.00		2,000.00	14,000.00	72,000		12,000	84,000
2	Allowance for small cranes to position steel (2)	2	mo	160	320	75.00		2,000.00	14,000.00	24,000		4,000	28,000
3	Allowance for small cranes to position steel (2)	2	mo	160	320	75.00		2,000.00	14,000.00	24,000		4,000	28,000
4	Allowance for small cranes to position steel (2)	2	mo	160	320	75.00		2,000.00	14,000.00	24,000		4,000	28,000
ALL	allowance for overtime to build structures	1	lot	1000	1000	25.00			25,000.00	25,000			25,000
	to work around helicopter usage												
ALL	Allowance to touch up paint	1	lot					10,000.00	10,000.00			10,000	10,000
	TOTAL - Metals				11255					711,959	1,779,595	40,000	2,531,554

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Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

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CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	010 - Specialties												
1	Alowance for modular structure for operator	96	sf					85.00	85.00			8,160	8,160
	at the VOC units												
1	Allowance to set in place & tie down	1	lot	4	4	65.00		200.00	460.00	260		200	460
	TOTAL - Specialties				4					260		8,360	8,620

Eichl... / Engineers Inc. of CA

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PRELIMINARY ESTIMATE

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Checked By: R.H.
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	016 - Electrical												
	POWER DISTRIBUTION												
	VOC -1												
1	DISCONNECT SWITCH FUSABLE, 400A, 600V, 3PH, 3W	1	EA	10	10	75.00	2,025.00		2,775.00	750	2,025		2,775
1	#600 MCM CONDUCTOR	1.2	CLF	6.154	7	75.00	475.00		936.55	554	570		1,124
1	#2 GROUND	5	CLF	1.778	9	75.00	47.00		180.35	667	235		902
1	3" RIGID ALUMINUM	40	LF	0.18	7	75.00	9.45		22.95	540	378		918
1	3" IN-LINE PULL FITTINGS	2	EA	2.7	5	75.00	415.00		617.50	405	830		1,235
1	16X16X6 PULL BOX	1	EA	6.15	6	75.00	810.00		1,271.25	461	810		1,271
1	3"90-DEGREE RGS,PVC COATED	2	EA	1.9	4	75.00	69.00		211.50	285	138		423
1	FUSE 400A	3	EA	0.333	1	75.00	130.00		154.98	75	390		465
1	3000A main switchboard	1	EA	28.57	29	75.00	4,675.00		6,817.75	2,143	4,675		6,818
1	3000A 600V CIRCUIT BREAKER	1	EA	36.36	36	75.00	24,300.00		27,027.00	2,727	24,300		27,027
1	BUS CIRCUIT BREAKER 400A 480V 3PH	1	EA	3	3	75.00	3,100.00		3,325.00	225	3,100		3,325
1	MISC SUPPORTS, FITTINGS, TERMINATIONS	1	LOT							1,766	7,490		9,257
1	CHECKOUT AND TESTING	1	LOT	100	100	75.00			7,500.00	7,500			7,500
	VOC -2												
2	DISCONNECT SWITCH FUSABLE, 600A, 600V, 3PH, 3W	1	EA	16	16	75.00	3,000.00		4,200.00	1,200	3,000		4,200
2	#600 MCM CONDUCTOR	2.4	CLF	7.3	18	75.00	585.00		1,132.50	1,314	1,404		2,718
2	#2 GROUND	5	CLF	1.778	9	75.00	47.00		180.35	667	235		902
2	3" RIGID ALUMINUM	80	LF	0.18	14	75.00	9.45		22.95	1,080	756		1,836
2	3" IN-LINE PULL FITTINGS	2	EA	2.7	5	75.00	415.00		617.50	405	830		1,235
2	16X16X6 PULL BOX	1	EA	6.15	6	75.00	810.00		1,271.25	461	810		1,271
2	3"90-DEGREE RGS,PVC COATED	2	EA	1.9	4	75.00	69.00		211.50	285	138		423
2	FUSE 400A	3	EA	0.333	1	75.00	150.00		174.98	75	450		525
2	BUS CIRCUIT BREAKER 400A 480V 3PH	1	EA	5	5	75.00	3,775.00		4,150.00	375	3,775		4,150
2	MISC SUPPORTS, FITTINGS, TERMINATIONS	1	LOT							1,172	2,280		3,452
2	CHECKOUT AND TESTING	1	LOT	100	100	75.00			7,500.00	7,500			7,500

Eichl
Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	VOC -3												
3	DISCONNECT SWITCH FUSABLE, 400A, 600V, 3PH, 3W	1	EA	10	10	75.00	2,025.00		2,775.00	750	2,025		2,775
3	#600 MCM CONDUCTOR	3.6	CLF	6.154	22	75.00	475.00		936.55	1,662	1,710		3,372
3	#2 GROUND	5	CLF	1.778	9	75.00	47.00		180.35	667	235		902
3	3" RIGID ALUMINUM	120	LF	0.18	22	75.00	9.45		22.95	1,620	1,134		2,754
3	3" IN-LINE PULL FITTINGS	2	EA	2.7	5	75.00	415.00		617.50	405	830		1,235
3	16X16X6 PULL BOX	1	EA	6.15	6	75.00	810.00		1,271.25	461	810		1,271
3	3"90-DEGREE RGS,PVC COATED	2	EA	1.9	4	75.00	69.00		211.50	285	138		423
3	FUSE 400A	3	EA	0.333	1	75.00	130.00		154.98	75	390		465
3	BUS CIRCUIT BREAKER 400A 480V 3PH	1	EA	3	3	75.00	3,100.00		3,325.00	225	3,100		3,325
3	MISC SUPPORTS, FITTINGS, TERMINATIONS	1	LOT							1,230	2,074		3,304
3	CHECKOUT AND TESTING	1	LOT	100	100	75.00			7,500.00	7,500			7,500
	VOC -4												
4	DISCONNECT SWITCH FUSABLE, 400A, 600V, 3PH, 3W	1	EA	10	10	75.00	2,025.00		2,775.00	750	2,025		2,775
4	#600 MCM CONDUCTOR	6	CLF	6.154	37	75.00	475.00		936.55	2,769	2,850		5,619
4	#2 GROUND	5	CLF	1.778	9	75.00	47.00		180.35	667	235		902
4	3" RIGID ALUMINUM	200	LF	0.18	36	75.00	9.45		22.95	2,700	1,890		4,590
4	3" IN-LINE PULL FITTINGS	2	EA	2.7	5	75.00	415.00		617.50	405	830		1,235
4	16X16X6 PULL BOX	1	EA	6.15	6	75.00	810.00		1,271.25	461	810		1,271
4	3"90-DEGREE RGS,PVC COATED	2	EA	1.9	4	75.00	69.00		211.50	285	138		423
4	FUSE 400A	3	EA	0.333	1	75.00	130.00		154.98	75	390		465
4	BUS CIRCUIT BREAKER 400A 480V 3PH	1	EA	3	3	75.00	3,100.00		3,325.00	225	3,100		3,325
4	MISC SUPPORTS, FITTINGS, TERMINATIONS	1	LOT							1,667	2,454		4,121
4	CHECKOUT AND TESTING	1	LOT	100	100	75.00			7,500.00	7,500			7,500

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Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

PRELIMINARY COST ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	MAT'L	SUBCON.	TOTAL	TOTAL COSTS LABOR	MAT'L	SUBCON.	TOTAL
1	Allowance for installing lighting at VOC areas	1	lot					40,000.00	40,000.00			40,000	40,000
1	Allowance for installing lighting on main duct	670	ft					20.00	20.00			13,400	13,400
	TOTAL - Electrical				789					65,016	85,787	53,400	204,203

Eichle
Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

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CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	017 - Instruments & Controls												
ALL	Ethanol Analyzer (at RTO)	4	ea	16	64	75.00	20,000.00		21,200.00	4,800	80,000		84,800
ALL	Capacitance probe / transmitter	60	ea	4	240	75.00	1,200.00		1,500.00	18,000	72,000		90,000
ALL	Actuated BF vent valve - 12" fermenter	60	ea	4	240	75.00	6,500.00		6,800.00	18,000	390,000		408,000
ALL	Actuated BF vent valve - 36" KO pots	4	ea	8	32	75.00	10,000.00		10,600.00	2,400	40,000		42,400
ALL	Local hand switch for BF closing	64	ea	4	256	75.00	200.00		500.00	19,200	12,800		32,000
ALL	Relief Vent - KO pots	4	ea	4	16	75.00	3,000.00		3,300.00	1,200	12,000		13,200
	Level transmitter & indicator					75.00	1,200.00		1,200.00				
ALL	High level switch	4	ea	4	16	75.00	750.00		1,050.00	1,200	3,000		4,200
ALL	Low level switch	4	ea	4	16	75.00	750.00		1,050.00	1,200	3,000		4,200
ALL	Level gauge	4	ea	2	8	75.00	1,000.00		1,150.00	600	4,000		4,600
ALL	Pressure gauge	16	ea	1	16	75.00	300.00		375.00	1,200	4,800		6,000
ALL	Pressure transmitter	4	ea	4	16	75.00	1,500.00		1,800.00	1,200	6,000		7,200
ALL	Temperature gauge w/ TW	16	ea	4	64	75.00	300.00		600.00	4,800	4,800		9,600
1	Temperature transmitter, RTD, TW	2	ea	4	8	75.00	1,200.00		1,500.00	600	2,400		3,000
	Relief valves						300.00		300.00				
	Pressure regulator - liquid						300.00		300.00				
	Pressure regulator - steam						1,500.00		1,500.00				
ALL	On- off control valve Stations	4		4	16	75.00	1,000.00		1,300.00	1,200	4,000		5,200
ALL	Conduit, factored 20' per tank	1200	ft	0.2	240	75.00	8.00		23.00	18,000	9,600		27,600
ALL	Conduit, factored 300' per RTO	1200	ft	0.2	240	75.00	8.00		23.00	18,000	9,600		27,600
ALL	Wire, factored 50' per instrument/valve	7300	ft	0.02	146	75.00	0.10		1.60	10,950	730		11,680
ALL	Allowance for air tubing	1	lot	240	240	75.00	500.00		18,500.00	18,000	500		18,500

Eichleay Engineers Inc. of CA

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CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
1	Install PC and software for monitoring system	1	lot				13,000		13,000		13,000		13,000
1	Software design, integration and testing	1	lot					100,000	100,000			100,000	100,000
1	Installation of network & system	1	lot					25,000	25,000			25,000	25,000
	TOTAL - Instruments & Controls				1874					140,550	672,230	125,000	937,780

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	018 - Process Piping & Equipment												
	VOC Control Equipment												
1	VOC-1 16,000 scfm RTO unit	1	ea	200	200	65.00	416,000		429,000	13,000	416,000		429,000
2	VOC-2 22,000 scfm RTO unit	1	ea	250	250	65.00	503,000		519,250	16,250	503,000		519,250
3	VOC-3 13,000 scfm RTO unit	1	ea	200	200	65.00	367,000		380,000	13,000	367,000		380,000
4	VOC-4 13,000 scfm RTO unit	1	ea	200	200	65.00	367,000		380,000	13,000	367,000		380,000
all	Adder for RTO for higher SP blower & O2 control loop	4	ea				35,000.00		35,000.00		140,000		140,000
all	Allowance for stainless stack & alum. Grating & handrails	4	ea				15,000.00		15,000.00		60,000		60,000
	Install refractory in VOC's												
1	VOC-1	1	lot	80	80	70.00			5,600.00	5,600			5,600
2	VOC-2	1	lot	100	100	70.00			7,000.00	7,000			7,000
3	VOC-3	1	lot	80	80	70.00			5,600.00	5,600			5,600
4	VOC-4	1	lot	80	80	70.00			5,600.00	5,600			5,600
	Knock out vessels												
1	KO Vessel for VOC-1 - 5000 gal	1	ea	20	20	65.00	37,000.00		38,300.00	1,300	37,000		38,300
2	KO Vessel for VOC-2 - 7000 gal	1	ea	20	20	65.00	45,000.00		46,300.00	1,300	45,000		46,300
3	KO Vessel for VOC-3 - 4000 gal	1	ea	20	20	65.00	33,000.00		34,300.00	1,300	33,000		34,300
4	KO Vessel for VOC-4 - 4000 gal	1	ea	20	20	65.00	33,000.00		34,300.00	1,300	33,000		34,300
	Nozzle Fabrication/Installation at each tank												
all	12" Nozzle(Fabricate)	60	ea	4	240	65.00	215.00		475.00	15,600	12,900		28,500
all	Machine Cut Hole(Specialty Service)	60	ea	2	120	65.00	20.00	600.00	750.00	7,800	1,200	36,000	45,000
all	12" Nozzle(Install)	60	ea	4	240	65.00			260.00	15,600			15,600
all	2" Nozzle(Fabricate)	60	ea	1.5	90	65.00	40.00		137.50	5,850	2,400		8,250
all	Drill Hole W/Hole Saw Auger	60	ea	1	60	65.00			65.00	3,900			3,900
all	2" Nozzle(Install)	60	ea	3	180	65.00			195.00	11,700			11,700

Eichleay Engineers Inc. of CA

PRELIMINARY ESTIMATE

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CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
all	36" Nozzle(Fabricate)	60	ea	8	480	65.00	350.00		870.00	31,200	21,000		52,200
all	Machine Cut Hole(Specialty Service)	60	ea	4	240	65.00	20.00	600.00	880.00	15,600	1,200	36,000	52,800
all	36" Nozzle(Install)	60	ea	10	600	65.00			650.00	39,000			39,000
	Allowance for passivation												
all	Install gel	180	ea	4	720	65.00	150.00		410.00	46,800	27,000		73,800
all	neutralize & flush & dry	180	ea	2	360	65.00	20.00		150.00	23,400	3,600		27,000
all	Insulation Removal	60	ea	2	120	65.00			130.00	7,800			7,800
all	Scaffolding - 38' tanks(Install)	12	ea	24	288	65.00			1,560.00	18,720			18,720
ALL	Scaffolding - 24' to 28' tanks(Install)	48	ea	20	960	65.00			1,300.00	62,400			62,400
all	Scaffolding - 38' tanks(Remove)	12	ea	12	144	65.00			780.00	9,360			9,360
all	Scaffolding - 24' to 28' tanks(Remove)	48	ea	10	480	65.00			650.00	31,200			31,200
	Ducting Installation												
1	VOC-1												
1	10" Duct	36	ft				54.00		54.00		1,944		1,944
1	10" Duct misc. fittings	1	lot				800.00		800.00		800		800
1	Bolt up	10	ea	1.5	15	65.00			97.50	975			975
1	Handle	9	ea	2.08	18.72	65.00			135.20	1,217			1,217
1	Install	2	lot	2	4	65.00			130.00	260			260
1	12" Duct	40	ft				62.00		62.00		2,480		2,480
1	12" Duct misc. fittings	1	lot				1,000.00		1,000.00		1,000		1,000
1	Bolt up	12	ea	1.5	18	65.00			97.50	1,170			1,170
1	Handle	10	ea	2.08	20.8	65.00			135.20	1,352			1,352
1	Install	2	lot	2	4	65.00			130.00	260			260
1	16" Duct	24	ft				77.00		77.00		1,848		1,848
1	16" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
1	Bolt up	8	ea	2	16	65.00			130.00	1,040			1,040

Eichle
Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
1	Handle	6	ea	3	18	65.00			195.00	1,170			1,170
1	Install	2	lot	2	4	65.00			130.00	260			260
1	18" Duct	45	ft				86.00		86.00		3,870		3,870
1	18" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
1	Bolt up	13	ea	3	39	65.00			195.00	2,535			2,535
1	Handle	11	ea	3.52	38.72	65.00			228.80	2,517			2,517
1	Install	3	lot	2	6	65.00			130.00	390			390
1	20" Duct	40	ft				92.00		92.00		3,680		3,680
1	20" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
1	Bolt up	12	ea	4	48	65.00			260.00	3,120			3,120
1	Handle	10	ea	4.6	46	65.00			299.00	2,990			2,990
1	Install	3	lot	3	9	65.00			195.00	585			585
1	22" Duct	60	ft				99.00		99.00		5,940		5,940
1	22" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
1	Bolt up	18	ea	4	72	65.00			260.00	4,680			4,680
1	Handle	16	ea	4.6	73.6	65.00			299.00	4,784			4,784
1	Install	4	lot	3	12	65.00			195.00	780			780
1	24" Duct	18	ft				106.00		106.00		1,908		1,908
1	24" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
1	Bolt up	6	ea	4	24	65.00			260.00	1,560			1,560
1	Handle	5	ea	4.6	23	65.00			299.00	1,495			1,495
1	Install	1	lot	3	3	65.00			195.00	195			195
1	28" Duct	85	ft				119.00		119.00		10,115		10,115
1	28" Duct misc. fittings	1	lot				4,000.00		4,000.00		4,000		4,000
1	Bolt up	22	ea	5.5	121	65.00			357.50	7,865			7,865
1	Handle	21	ea	5.32	111.72	65.00			345.80	7,262			7,262
1	Install	5	lot	3	15	65.00			195.00	975			975
1	36" Duct	385	ft				199.00		199.00		76,615		76,615
1	36" Duct misc. fittings	1	lot				20,000.00		20,000.00		20,000		20,000

Eichl y
Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: , Fermenter VOC Emissions - Livingston West Side Fermenters

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	MAT'L	SUBCON.	TOTAL	TOTAL COSTS LABOR	MAT'L	SUBCON.	TOTAL
1	Bolt up	100	ea	6.5	650	65.00			422.50	42,250			42,250
1	Handle	96	ea	7.2	691.2	65.00			468.00	44,928			44,928
1	Install	20	lot	3	60	65.00			195.00	3,900			3,900
	VOC-2												
2	12" Duct	75	ft				62.00		62.00		4,650		4,650
2	12" Duct misc. fittings	1	lot				1,000.00		1,000.00		1,000		1,000
2	Bolt up	21	ea	1.5	31.5	65.00			97.50	2,048			2,048
2	Handle	19	ea	2.08	39.52	65.00			135.20	2,569			2,569
2	Install	4	lot	2	8	65.00			130.00	520			520
2	18" Duct	65	ft				86.00		86.00		5,590		5,590
2	18" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
2	Bolt up	19	ea	3	57	65.00			195.00	3,705			3,705
2	Handle	17	ea	3.52	59.84	65.00			228.80	3,890			3,890
2	Install	3	lot	2	6	65.00			130.00	390			390
2	22" Duct	50	ft				99.00		99.00		4,950		4,950
2	22" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
2	Bolt up	15	ea	4	60	65.00			260.00	3,900			3,900
2	Handle	13	ea	4.6	59.8	65.00			299.00	3,887			3,887
2	Install	3	lot	3	9	65.00			195.00	585			585
2	24" Duct	35	ft				106.00		106.00		3,710		3,710
2	24" Duct misc. fittings	1	lot				3,000.00		3,000.00		3,000		3,000
2	Bolt up	11	ea	4	44	65.00			260.00	2,860			2,860
2	Handle	9	ea	4.6	41.4	65.00			299.00	2,691			2,691
2	Install	2	lot	3	6	65.00			195.00	390			390
2	28" Duct	15	ft				119.00		119.00		1,785		1,785
2	28" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
2	Bolt up	5	ea	5.5	27.5	65.00			357.50	1,788			1,788
2	Handle	4	ea	5.32	21.28	65.00			345.80	1,383			1,383

Eichleay Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 **Date:** 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
2	Install	1	lot	3	3	65.00			195.00	195			195
2	30" Duct	25	ft				128.00		128.00		3,200		3,200
2	30" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
2	Bolt up	8	ea	5.5	44	65.00			357.50	2,860			2,860
2	Handle	6	ea	5.32	31.92	65.00			345.80	2,075			2,075
2	Install	1	lot	3	3	65.00			195.00	195			195
2	32" Duct	265	ft				177.00		177.00		46,905		46,905
2	32" Duct misc. fittings	1	lot				4,500.00		4,500.00		4,500		4,500
2	Bolt up	68	ea	6	408	65.00			390.00	26,520			26,520
2	Handle	66	ea	6	396	65.00			390.00	25,740			25,740
2	Install	13	lot	3	39	65.00			195.00	2,535			2,535
2	42" Duct	415	ft				242.00		242.00		100,430		100,430
2	42" Duct misc. fittings	1	lot				25,000.00		25,000.00		25,000		25,000
2	Bolt up	115	ea	6.5	747.5	65.00			422.50	48,588			48,588
2	Handle	104	ea	7.12	740.48	65.00			462.80	48,131			48,131
2	Install	21	lot	4	84	65.00			260.00	5,460			5,460
	VOC-3												
3	6" Duct	25	ft				38.00		38.00		950		950
3	6" Duct misc. fittings	1	lot				500.00		500.00		500		500
3	Bolt up	7	ea	1	7	65.00			65.00	455			455
3	Handle	6	ea	1.4	8.4	65.00			91.00	546			546
3	Install	1	lot	1.5	1.5	65.00			97.50	98			98
3	10" Duct	35	ft				54.00		54.00		1,890		1,890
3	10" Duct misc. fittings	1	lot				1,000.00		1,000.00		1,000		1,000
3	Bolt up	11	ea	1.5	16.5	65.00			97.50	1,073			1,073
3	Handle	9	ea	1.72	15.48	65.00			111.80	1,006			1,006
3	Install	2	lot	2	4	65.00			130.00	260			260
3	12" Duct	70	ft				62.00		62.00		4,340		4,340

Eichleay Engineers Inc. of CA

PRELIMINARY ESTIMATE

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
3	12" Duct misc. fittings	1	lot				1,000.00		1,000.00		1,000		1,000
3	Bolt up	20	ea	1.5	30	65.00			97.50	1,950			1,950
3	Handle	18	ea	2.08	37.44	65.00			135.20	2,434			2,434
3	Install	3	lot	2	6	65.00			130.00	390			390
3	16" Duct	48	ft				69.00		69.00		3,312		3,312
3	16" Duct misc. fittings	1	lot				1,500.00		1,500.00		1,500		1,500
3	Bolt up	14	ea	2.5	35	65.00			162.50	2,275			2,275
3	Handle	12	ea	3	36	65.00			195.00	2,340			2,340
3	Install	3	lot	2	6	65.00			130.00	390			390
3	18" Duct	22	ft				86.00		86.00		1,892		1,892
3	18" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
3	Bolt up	8	ea	3	24	65.00			195.00	1,560			1,560
3	Handle	6	ea	3.52	21.12	65.00			228.80	1,373			1,373
3	Install	1	lot	2	2	65.00			130.00	130			130
3	20" Duct	8	ft				92.00		92.00		736		736
3	20" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
3	Bolt up	3	ea	4	12	65.00			260.00	780			780
3	Handle	2	ea	4.6	9.2	65.00			299.00	598			598
3	Install	1	lot	3	3	65.00			195.00	195			195
3	22" Duct	28	ft				99.00		99.00		2,772		2,772
3	22" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
3	Bolt up	9	ea	4	36	65.00			260.00	2,340			2,340
3	Handle	7	ea	4.6	32.2	65.00			299.00	2,093			2,093
3	Install	2	lot	3	6	65.00			195.00	390			390
3	24" Duct	20	ft				106.00		106.00		2,120		2,120
3	24" Duct misc. fittings	1	lot				3,000.00		3,000.00		3,000		3,000
3	Bolt up	7	ea	4	28	65.00			260.00	1,820			1,820
3	Handle	5	ea	4.6	23	65.00			299.00	1,495			1,495
3	Install	1	lot	3	3	65.00			195.00	195			195

Eichleay
Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 8/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
3	26" Duct	8	ft				114.00		114.00		912		912
3	26" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
3	Bolt up	3	ea	5	15	65.00			325.00	975			975
3	Handle	2	ea	4.72	9.44	65.00			306.80	614			614
3	Install	1	lot	3	3	65.00			195.00	195			195
3	28" Duct	80	ft				119.00		119.00		9,520		9,520
3	28" Duct misc. fittings	1	lot				3,000.00		3,000.00		3,000		3,000
3	Bolt up	22	ea	5.5	121	65.00			357.50	7,865			7,865
3	Handle	20	ea	5.32	106.4	65.00			345.80	6,916			6,916
3	Install	4	lot	3	12	65.00			195.00	780			780
3	32" Duct	765	ft				177.00		177.00		135,405		135,405
3	32" Duct misc. fittings	1	lot				4,500.00		4,500.00		4,500		4,500
3	Bolt up	204	ea	6	1224	65.00			390.00	79,560			79,560
3	Handle	192	ea	6	1152	65.00			390.00	74,880			74,880
3	Install	38	lot	3	114	65.00			195.00	7,410			7,410
	VOC-4												
4	10" Duct	52	ft				54.00		54.00		2,808		2,808
4	10" Duct misc. fittings	1	lot				1,000.00		1,000.00		1,000		1,000
4	Bolt up	15	ea	1.5	22.5	65.00			97.50	1,463			1,463
4	Handle	13	ea	1.72	22.36	65.00			111.80	1,453			1,453
4	Install	2	lot	2	4	65.00			130.00	260			260
4	12" Duct	52	ft				62.00		62.00		3,224		3,224
4	12" Duct misc. fittings	1	lot				1,000.00		1,000.00		1,000		1,000
4	Bolt up	15	ea	1.5	22.5	65.00			97.50	1,463			1,463
4	Handle	13	ea	2.08	27.04	65.00			135.20	1,758			1,758
4	Install	2	lot	2	4	65.00			130.00	260			260
4	16" Duct	38	ft				77.00		77.00		2,926		2,926
4	16" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000

Eichle
Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $/Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
4	Bolt up	12	ea	2	24	65.00			130.00	1,560			1,560
4	Handle	10	ea	3	30	65.00			195.00	1,950			1,950
4	Install	3	lot	2	6	65.00			130.00	390			390
4	18" Duct	50	ft				86.00		86.00		4,300		4,300
4	18" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
4	Bolt up	14	ea	3	42	65.00			195.00	2,730			2,730
4	Handle	13	ea	3.52	45.76	65.00			228.80	2,974			2,974
4	Install	3	lot	2	6	65.00			130.00	390			390
4	20" Duct	18	ft				92.00		92.00		1,656		1,656
4	20" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
4	Bolt up	7	ea	3.5	24.5	65.00			227.50	1,593			1,593
4	Handle	5	ea	4.12	20.6	65.00			267.80	1,339			1,339
4	Install	2	lot	2	4	65.00			130.00	260			260
4	22" Duct	30	ft				99.00		99.00		2,970		2,970
4	22" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
4	Bolt up	9	ea	4	36	65.00			260.00	2,340			2,340
4	Handle	8	ea	4.6	36.8	65.00			299.00	2,392			2,392
4	Install	2	lot	3	6	65.00			195.00	390			390
4	24" Duct	30	ft				106.00		106.00		3,180		3,180
4	24" Duct misc. fittings	1	lot				3,000.00		3,000.00		3,000		3,000
4	Bolt up	9	ea	4	36	65.00			260.00	2,340			2,340
4	Handle	8	ea	4.6	36.8	65.00			299.00	2,392			2,392
4	Install	2	lot	3	6	65.00			195.00	390			390
4	26" Duct	85	ft				114.00		114.00		9,690		9,690
4	26" Duct misc. fittings	1	lot				3,000.00		3,000.00		3,000		3,000
4	Bolt up	24	ea	5	120	65.00			325.00	7,800			7,800
4	Handle	22	ea	4.72	103.84	65.00			306.80	6,750			6,750
4	Install	5	lot	3	15	65.00			195.00	975			975
4	32" Duct	715	ft				177.00		177.00		126,555		126,555

Eichl y
Engineers Inc. of CA

Client Name: Wine Institute
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Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	MAT'L	SUBCON.	TOTAL	TOTAL COSTS LABOR	MAT'L	SUBCON.	TOTAL
4	32" Duct misc. fittings	1	lot				4,500.00		4,500.00		4,500		4,500
4	Bolt up	190	ea	6	1140	65.00			390.00	74,100			74,100
4	Handle	178	ea	6	1068	65.00			390.00	69,420			69,420
4	Install	36	lot	3	108	65.00			195.00	7,020			7,020
1	Install an 10" duct bank duct	17	ea	48	816	65.00	4,545.00		7,665.00	53,040	77,265		130,305
3	Install an 6" tank duct bank duct	7	ea	46	322	65.00	4,202.00		7,192.00	20,930	29,414		50,344
3	Install an 10" duct bank duct	10	ea	48	480	65.00	4,545.00		7,665.00	31,200	45,450		76,650
2	Install an 12" duct bank duct	12	ea	48	576	65.00	4,699.00		7,819.00	37,440	56,388		93,828
4	Install an 10" duct bank duct	14	ea	48	672	65.00	4,545.00		7,665.00	43,680	63,630		107,310
ALL	Allowance for drilling & welding flange to main ducts	60	ea				1,350.00		1,350.00		81,000		81,000
	at factory												
1	Install ducting from KO drum to VOC - 1 - 28" duct	1	lot	71.28	71.28	65.00	6,750.00		11,383.20	4,633	6,750		11,383
2	Install ducting from KO drum to VOC - 2 - 35" duct	1	lot	88.48	88.48	65.00	11,754.00		17,505.20	5,751	11,754		17,505
3	Install ducting from KO drum to VOC - 3 - 26" duct	1	lot	71.28	71.28	65.00	6,032.00		10,665.20	4,633	6,032		10,665
4	Install ducting from KO drum to VOC - 4 -26" duct	1	lot	71.28	71.28	65.00	6,032.00		10,685.20	4,633	6,032		10,665
	Allowance to modify spreader on top of tanks												
1	VOC -1 Tanks	17	ea					1,800.00	1,800.00			30,600	30,600
2	VOC -2 Tanks	12	ea					1,800.00	1,800.00			21,600	21,600
3	VOC -3 Tanks	17	ea					1,800.00	1,800.00			30,600	30,600
4	VOC -4 Tanks	14	ea					1,800.00	1,800.00			25,200	25,200
ALL	Allowance for special rigging tools & frames	1	lot					10,000.00	10,000.00			10,000	10,000

Eichler Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	Hellcopter for steel & ducting												
	VOC-1 system												
1	assume 54 lifts	60	hrs					6,000.00	6,000.00			360,000	360,000
	crew per diem	8	days					750.00	750.00			6,000	6,000
	VOC-2 system												
2	assume 28 lifts	35	hrs					6,000.00	6,000.00			210,000	210,000
	crew per diem	5	days					750.00	750.00			3,750	3,750
	VOC-3 system												
3	assume 28 lifts	35	hrs					6,000.00	6,000.00			210,000	210,000
	crew per diem	5	days					750.00	750.00			3,750	3,750
	VOC-4 system												
4	assume 23 lifts	30	hrs					6,000.00	6,000.00			180,000	180,000
	crew per diem	5	days					750.00	750.00			3,750	3,750
	Allowance for crane to install VOC's												
1	VOC-1	3	wks	160	480	75.00		2,500.00	14,500.00	36,000		7,500	43,500
2	VOC-2	3	wks	160	480	75.00		2,500.00	14,500.00	36,000		7,500	43,500
3	VOC-3	3	wks	160	480	75.00		2,500.00	14,500.00	36,000		7,500	43,500
4	VOC-4	3	wks	160	480	75.00		2,500.00	14,500.00	36,000		7,500	43,500
ALL	allowance for overtime to build structures	1	lot	2000	2000	20.00			40,000.00	40,000			40,000
	to work around hellcopter usage												
	TOTAL - Process Piping & Equipment				24987					1,555,068	3,175,093	1,197,250	5,927,411

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

Eichleay Engineers Inc. of CA

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	Contingency												
2.00	Site Construction					25%	25%	25%				317,508	317,508
3.00	Concrete					50%	50%	50%				222,475	222,475
4.00	Masonry					25%	25%	25%					
5.00	Metals					30%	30%	30%		213,588	533,879	12,000	759,466
6.00	Wood & Plastics					25%	25%	25%					
7.00	Thermal & Moisture Protection					25%	25%	25%					
8.00	Door & Windows					25%	25%	25%					
9.00	Finishes					25%	25%	25%					
10.00	Specialties					25%	25%	25%		65		2,090	2,155
11.00	Equipment					25%	25%	25%					
12.00	Furnishings					25%	25%	25%					
13.00	Special Construction					25%	25%	25%					
14.00	Conveying Systems					25%	25%	25%					
15.00	Mechanical HVAC & Plumbing					25%	25%	25%					
16.00	Electrical					30%	30%	30%		19,505	25,736	16,020	61,261
17.00	Instruments & Controls					30%	30%	30%		42,165	201,669	37,500	281,334
18.00	Process Piping & Equipment					35%	35%	35%		544,274	1,111,283	419,038	2,074,594
	Design Fee Allowance							35%				735,000	735,000
	Construction Management Allowance							30%				126,000	126,000
	Plan Check & Permit Fee Allowance							25%				12,135	12,135
	Third Party Inspection Allowance							25%				9,101	9,101
	ROUND OFF	1											
	TOTAL - Contingency									819,596	1,872,566	1,908,866	4,601,028

Eichleay Engineers Inc. of California

ESTIMATE SUMMARY SHEET

Client Name: Wine Institute — **Estimated By:** P.H.M.

Job Number: 30913 — PRELIMINARY ESTIMATE — **Checked By:** R.H.

Job Title: Fermentor VOC Emissions - LIVINGSTON UTILITIES — **Rev.** 2 **Date:** 6/24/05

CODE	ITEM DESCRIPTION	TOTAL COSTS RTO-1	RTO-2	RTO-3	RTO-4	TOTAL
	SUMMARY					
2.00	Site Construction	$9,350	$0	$0	$0	$9,350
3.00	Concrete	$81,050	$0	$0	$0	$81,050
4.00	Masonry					$0
5.00	Metals	$5,000	$5,000	$5,000	$5,000	$20,000
6.00	Wood & Plastics					$0
7.00	Thermal & Moisture Protection	$89,600	$34,400	$29,600	$11,000	$164,600
8.00	Door & Windows					$0
9.00	Finishes					$0
10.00	Specialties					$0
11.00	Equipment					$0
12.00	Furnishings					$0
13.00	Special Construction					$0
14.00	Conveying Systems					$0
15.00	Mechanical HVAC & Plumbing					$0
16.00	Electrical	$326,368	$0	$0	$0	$326,368
17.00	Instruments & Controls	$116,680	$37,631	$37,632	$37,632	$229,575
18.00	Process Piping & Equipment	$1,331,505	$784,365	$924,335	$828,665	$3,868,870
	Sub Total	$1,959,553	$861,396	$996,567	$882,297	$4,699,813
	Tax & Freight	$99,669	$41,722	$48,676	$41,722	$231,789
	General Conditions	$164,738	$72,249	$83,619	$73,922	$394,528
	General Contractor Mark-Up	$222,396	$97,537	$112,886	$99,794	$532,613
	Field Costs - Sub Total	$2,446,356	$1,072,904	$1,241,748	$1,097,735	$5,858,743
	Design Fee Allowance	366,953	160,936	186,262	164,660	$878,812
	Construction Management Allowance	$73,391	$32,187	$37,252	$32,932	$175,762
	Plan Check & Permit Fee Allowance	$777	$325	$380	$325	$1,808
	Third Party Inspection Allowance	$583	$244	$285	$244	$1,356
	Escalation	$112,069	$50,101	$59,830	$54,113	$276,113
	Project Contingency	$847,578	$354,800	$413,934	$354,800	$1,971,112
	Sub Total	$3,847,708	$1,671,498	$1,939,691	$1,704,809	$9,163,707
	Owners Costs	$36,695	$16,094	$18,626	$16,466	$87,881
	Round Off	-$404	$409	-$318	-$275	-$588
	GRAND TOTAL	$3,884,000	$1,688,000	$1,958,000	$1,721,000	$9,251,000

Prepared By: [signature] Date: 6/23/05

Approved By: R.W. Hodges Date: 6/24/05

Eichleay Engineers Inc. of California

ESTIMATE SUMMARY SHEET

Client Name: Wine Institute — Estimated By: P.H.M.

Job Number: 30913 — PRELIMINARY ESTIMATE — Checked By: R.H.

Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES — Rev. 2 — Date: 6/24/05

W/O ESCALATION & OWNERS COSTS

CODE	ITEM DESCRIPTION	TOTAL COSTS RTO-1	RTO-2	RTO-3	RTO-4	TOTAL
	SUMMARY					
2.00	Site Construction	$9,350	$0	$0	$0	$9,350
3.00	Concrete	$81,050	$0	$0	$0	$81,050
4.00	Masonry					$0
5.00	Metals	$5,000	$5,000	$5,000	$5,000	$20,000
6.00	Wood & Plastics					$0
7.00	Thermal & Moisture Protection	$89,600	$34,400	$29,600	$11,000	$164,600
8.00	Door & Windows					$0
9.00	Finishes					$0
10.00	Specialties					$0
11.00	Equipment					$0
12.00	Furnishings					$0
13.00	Special Construction					$0
14.00	Conveying Systems					$0
15.00	Mechanical HVAC & Plumbing					$0
16.00	Electrical	$326,368	$0	$0	$0	$326,368
17.00	Instruments & Controls	$116,680	$37,631	$37,632	$37,632	$229,575
18.00	Process Piping & Equipment	$1,331,505	$784,365	$924,335	$828,665	$3,868,870
	Sub Total	$1,969,553	$861,396	$996,567	$882,297	$4,699,813
	Tax & Freight	$99,669	$41,722	$48,676	$41,722	$231,789
	General Conditions	$164,738	$72,249	$83,619	$73,922	$394,528
	General Contractor Mark-Up	$222,396	$97,537	$112,886	$99,794	$532,613
	Field Costs - Sub Total	$2,446,356	$1,072,904	$1,241,748	$1,097,735	$5,858,743
	Design Fee Allowance	366,953	160,936	186,262	164,660	$878,812
	Construction Management Allowance	$73,391	$32,187	$37,252	$32,932	$175,762
	Plan Check & Permit Fee Allowance	$777	$325	$380	$325	$1,808
	Third Party Inspection Allowance	$583	$244	$285	$244	$1,356
	Escalation					$0
	Project Contingency	$847,578	$354,800	$413,934	$354,800	$1,971,112
	Sub Total	$3,735,639	$1,621,397	$1,879,861	$1,650,697	$8,887,593
	Owners Costs					$0
	Round Off	$407				$407
	GRAND TOTAL	$3,736,046	$1,621,397	$1,879,861	$1,650,697	$8,888,000

Prepared By: Pal A. Hum
Date: 6/24/05

Approved By R.W. Hedges
Date: 6/24/05

Eichleay Engineers Inc. of California

ESTIMATE SUMMARY SHEET

Client Name: Wine Institute — **Estimated By:** P.H.M.

Job Number: 30913 — PRELIMINARY ESTIMATE — **Checked By:** R.H.

Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES — **Rev.** 2 — **Date:** 6/24/05

W/O Escalation & Owners Costs

CODE	ITEM DESCRIPTION	TOTAL MHRS	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	SUMMARY					
2.00	Site Construction		$0	$0	$9,350	$9,350
3.00	Concrete		$0	$0	$81,050	$81,050
4.00	Masonry		$0	$0	$0	$0
5.00	Metals		$0	$0	$20,000	$20,000
6.00	Wood & Plastics		$0	$0	$0	$0
7.00	Thermal & Moisture Protection		$0	$0	$164,600	$164,600
8.00	Door & Windows		$0	$0	$0	$0
9.00	Finishes		$0	$0	$0	$0
10.00	Specialties		$0	$0	$0	$0
11.00	Equipment		$0	$0	$0	$0
12.00	Furnishings		$0	$0	$0	$0
13.00	Special Construction		$0	$0	$0	$0
14.00	Conveying Systems		$0	$0	$0	$0
15.00	Mechanical HVAC & Plumbing		$0	$0	$0	$0
16.00	Electrical		$135,577	$181,792	$9,000	$326,368
17.00	Instruments & Controls		$78,975	$150,600	$0	$229,575
18.00	Process Piping & Equipment		$2,066,090	$1,774,780	$28,000	$3,868,870
	Sub Total		$2,280,642	$2,107,172	$312,000	$4,699,813
	Tax & Freight (11%)					$231,789
	General Conditions (8%)					$394,528
	General Contractor Mark-Up (10%)					$532,613
	Field Costs - Sub Total					$5,858,743
	Design Fee Allowance (15%)					$878,811
	Construction Management Allowance (3%)					$175,762
	Plan Check & Permit Fee Allowance (2%)					$1,808
	Third Party Inspection Allowance (1.5%)					$1,356
	Escalation					
	Project Contingency					$1,971,112
	Sub Total					$8,887,593
	Owners Costs					$0
	Round Off					$407
	GRAND TOTAL					$8,888,000

Prepared By: Paul H. Mayer

Date: 6/24/05

Approved By: R. W. Hedges

Date: 6/24/05

Eichleay Engineers Inc. of CA

PRELIMINARY ESTIMATE

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

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CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	020 - Site Construction												
1	Excavation for KOH system	178	cy					50.00	50.00			8,900	8,900
1	Excavation for Air compressor / dryer unit	9	cy					50.00	50.00			450	450
	TOTAL - Site Construction											9,350	9,350

Eichleay
Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

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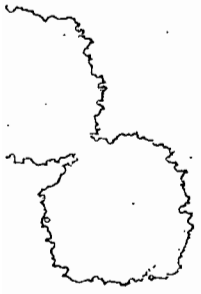
CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	030 - Concrete												
1	Install foundation for KOH system	133	cy					450.00	450.00			59,850	59,850
1	Install curb around KOH system	23	cy					550.00	550.00			12,650	12,650
1	Install foundation for Air compressor / air dryer	9	cy					450.00	450.00			4,050	4,050
1	Allowance for electrical equipment foundations	10	cy					450.00	450.00			4,500	4,500
	TOTAL - Concrete											81,050	81,050



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Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

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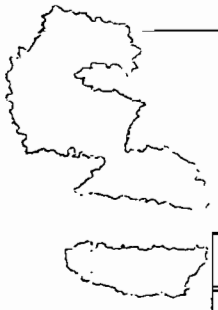
CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	050 - Metals												
all	Allowance for misc. supports	1	lot					20,000.00	20,000.00			20,000	20,000
	TOTAL - Metals											20,000	20,000



Eichler Engineers Inc. of CA

PRELIMINARY ESTIMATE

Client Name: Wine Institute
Job Number: 30813
Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05
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CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	070 - Thermal & Moisture Protection												
all	Allowance for insulation for tank	1	lot					8,000.00	8,000.00			8,000	8,000
1	Allowance for insulation on 4" KOH pipe	2920	ft					30.00	30.00			87,600	87,600
2	Allowance for insulation on 4" KOH pipe	1080	ft					30.00	30.00			32,400	32,400
3	Allowance for insulation on 4" KOH pipe	920	ft					30.00	30.00			27,600	27,600
4	Allowance for insulation on 4" KOH pipe	300	ft					30.00	30.00			9,000	9,000
	TOTAL - Thermal & Moisture Protection											164,600	164,600

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Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 **Date:** 6/24/05

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CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	016 - Electrical												
1	MOTOR CONTROL CENTER STRUCTURE	1	EA	10	10	75.00	1,800.00		2,550.00	750	1,800		2,550
1	200A MAIN BREAKER	1	EA	4.2	4	75.00	710.00		1,025.75	316	710		1,026
1	STARTER SIZE 1 480VAC MCC BOX	1	EA	2.9	3	75.00	945.00		1,162.50	218	945		1,163
1	STARTER SIZE 2 480VAC MCC BOX	1	EA	4	4	75.00	1,075.00		1,375.00	300	1,075		1,375
1	STARTER SIZE 3 480VAC MCC BOX	1	EA	8	8	75.00	1,800.00		2,400.00	600	1,800		2,400
1	CHECKOUT AND TESTING	1	LOT	40	40	75.00			3,000.00	3,000			3,000
	POWER DISTRIBUTION												
1	TRANSFORMER 1500KVA 15KV/480V	1	EA	100	100	75.00	27,500.00		35,000.00	7,500	27,500		35,000
1	DISCONNECT SWITCH 15KV	1	EA	56	56	75.00	17,500.00		21,700.00	4,200	17,500		21,700
1	15KV 1/0 CONDUCTOR	60	CLF	4.211	253	75.00	215.00		530.83	18,950	12,900		31,850
1	15KVLOAD BREAK DISC.& UTILITY CONNECTION	1	LOT	100	100	75.00	39,800.00		47,300.00	7,500	39,800		47,300
1	3" RIGID ALUMINUM	2000	LF	0.16	360	75.00	10.50		24.00	27,000	21,000		48,000
1	24X36X42 PULL BOX	30	EA	10.5	315	75.00	885.00		1,672.50	23,625	26,550		50,175
1	3" 90-DEGREE ELBOWS	2	EA	1.9	4	75.00	69.00		211.50	285	138		423
1	3" IN-LINE FITTINGS	2	EA	2.9	6	75.00	415.00		632.50	435	830		1,265
1	MISC SUPPORTS, FITTINGS, TERMINATIONS	1	LOT							17,899	29,244		47,143
1	CHECKOUT AND TESTING	1	LOT	40	40	75.00			3,000.00	3,000			3,000
1	Allowance for trenching power cable	300	ft					30.00	30.00			9,000	9,000
1	Allowance for overtime	1	lot	200	200	100.00			20,000.00	20,000			20,000
	TOTAL - Electrical				1502					135,577	181,792	9,000	326,368

Eichle... Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 **Date:** 6/24/05

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CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	017 - Instruments & Controls												
	2% KOH equipment												
1	Conservation vents	2	ea	4	8	75.00	1,200.00		1,500.00	600	2,400		3,000
1	Relief vents	2	ea	2	4	75.00	3,000.00		3,150.00	300	6,000		6,300
1	Level transmitter & indicator	2	ea	4	8	75.00	1,200.00		1,500.00	600	2,400		3,000
1	High level switch	1	ea	2	2	75.00	500.00		650.00	150	500		650
1	Pressure gauge	6	ea	1	6	75.00	300.00		375.00	450	1,800		2,250
1	Pressure transmitter		ea			75.00	2,100.00		2,100.00				
1	temperature gauge & TW	6	ea	4	24	75.00	300.00		600.00	1,800	1,800		3,600
1	Temperature transmitter, RTD, TW	1	ea	4	4	75.00	1,200.00		1,500.00	300	1,200		1,500
1	Temperature control valve	1	ea	6	6	75.00	1,800.00		2,250.00	450	1,800		2,250
1	Relief valves	2	ea	2	4	75.00	300.00		450.00	300	600		900
1	Pressure regulator, liquid	1	ea	2	2	75.00	300.00		450.00	150	300		450
1	Pressure regulator, steam	1	ea	2	2	75.00	1,500.00		1,650.00	150	1,500		1,650
1	Sight glass	2	ea	4	8	75.00	1,000.00		1,300.00	600	2,000		2,600
1	Totalizing mass flow meter	2	ea	6	12	75.00	25,000.00		25,450.00	900	50,000		50,900
	CIP instruments												
all	pressure gauge	158	ea	1	158	75.00	180.00		255.00	11,850	28,440		40,290
all	Install control valves for KOH & water lines	120	ea	2	240	75.00	250.00		400.00	18,000	30,000		48,000
all	Install conduit to valves	3000	ft	0.1	300	75.00	3.00		10.50	22,500	9,000		31,500
all	Install wire to valve	60	ea	1	60	75.00	5.00		80.00	4,500	300		4,800
all	Install dual manual switch at grade per tank	60	ea	1	60	75.00	120.00		195.00	4,500	7,200		11,700
all	Install conduit for power to switch	1000	ft	0.1	100	75.00	3.00		10.50	7,500	3,000		10,500
all	Install wire to switch	3000	ft	0.015	45	75.00	0.12		1.25	3,375	360		3,735
	TOTAL - Instruments & Controls				1053					78,975	150,600		229,575

Eichleay Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	018 - Process Piping & Equipment												
	2% KOH equipment												
1	50% tank	1	ea	4	4	65.00	13,800.00		14,060.00	260	13,800		14,060
1	50% pump	1	ea	6	6	65.00	2,530.00		2,920.00	390	2,530		2,920
1	50% filter	2	ea	2	4	65.00	1,380.00		1,510.00	260	2,760		3,020
1	2% tank	1	ea	10	10	65.00	46,920.00		47,570.00	650	46,920		47,570
1	2% pump	1	ea	6	6	65.00	5,750.00		6,140.00	390	5,750		6,140
1	2% eductor	1	ea	10	10	65.00	1,150.00		1,800.00	650	1,150		1,800
1	2% heat exchanger	1	ea	4	4	65.00	2,990.00		3,250.00	260	2,990		3,250
1	2% filter	2	ea	2	4	65.00	1,840.00		1,970.00	260	3,680		3,940
1	Crane for installing KOH equipment	1	lot					3,000.00	3,000.00			3,000	3,000
	CIP Equipment												
1	Spray nozzles (ducting)	235	ea	2	470	65.00	250.00		380.00	30,550	58,750		89,300
1	Spray nozzles (KO Pots)	6	ea	2	12	65.00	300.00		430.00	780	1,800		2,580
1	Spray nozzels for main ducting	107	ea	2	214	65.00	250.00		380.00	13,910	26,750		40,660
1	Install sanitize inductors for in main ducting	55	ea	2	110	65.00	300.00		430.00	7,150	16,500		23,650
1	Allowance for valves for KOH & water clean out	428	ea	4	1712	65.00	150.00		410.00	111,280	64,200		175,480
2	Spray nozzles (ducting)	235	ea	2	470	65.00	250.00		380.00	30,550	58,750		89,300
2	Spray nozzles (KO Pots)	6	ea	2	12	65.00	300.00		430.00	780	1,800		2,580
2	Spray nozzels for main ducting	116	ea	2	232	65.00	250.00		380.00	15,080	29,000		44,080
2	Install sanitize inductors for in main ducting	58	ea	2	116	65.00	300.00		430.00	7,540	17,400		24,940
2	Allowance for valves for KOH & water clean out	464	ea	4	1856	65.00	150.00		410.00	120,640	69,600		190,240
3	Spray nozzles (ducting)	235	ea	2	470	65.00	250.00		380.00	30,550	58,750		89,300
3	Spray nozzles (KO Pots)	6	ea	2	12	65.00	300.00		430.00	780	1,800		2,580
3	Spray nozzels for main ducting	189	ea	2	378	65.00	250.00		380.00	24,570	47,250		71,820
3	Install sanitize inductors for in main ducting	95	ea	2	190	65.00	300.00		430.00	12,350	28,500		40,850
3	Allowance for valves for KOH & water clean out	756	ea	4	3024	65.00	150.00		410.00	196,560	113,400		309,960
4	Spray nozzles (ducting)	235	ea	2	470	65.00	250.00		380.00	30,550	58,750		89,300

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES

Eichleay Engineers Inc. of CA

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
4	Spray nozzles (KO Pots)	6	ea	2	12	65.00	300.00		430.00	780	1,800		2,580
4	Spray nozzels for main ducting	178	ea	2	356	65.00	250.00		380.00	23,140	44,500		67,640
4	Install sanitize inductors for in main ducting	90	ea	2	180	65.00	300.00		430.00	11,700	27,000		38,700
4	Allowance for valves for KOH & water clean out	712	ea	4	2848	65.00	150.00		410.00	185,120	106,800		291,920
	Install sanitize system at each tank												
all	Install 1 1/2" PP pipe	4800	ft	0.3	1440	65.00	3.00		22.50	93,600	14,400		108,000
all	Install inductor	60		2	120	65.00	300.00		430.00	7,800	18,000		25,800
1 & 2	Allowance for a sanitize cart for main duct cleaning	2	ea					2,500.00	2,500.00			5,000	5,000
	Utility Equipment												
1	Air compressor, oil free, 180cfm, 50 HP	2	ea	10	20	65.00	42,000.00		42,650.00	1,300	84,000		85,300
1	Air dryer, reciever tank and filters, 180cfm	2	ea	10	20	65.00	14,200.00		14,850.00	1,300	28,400		29,700
1	Allowance to install 2" natural gas pipe	1060	ft	1.2	1272	65.00	5.00		83.00	82,680	5,300		87,980
1	Allowance for natural gas valves & fittings	1	lot				2,000.00		2,000.00		2,000		2,000
all	Allowance to install 2" air line feeding the VOC's	500	ft	1.2	600	65.00	5.00		83.00	39,000	2,500		41,500
all	Allowance for air line valves & fittings	1	lot				6,000.00		6,000.00		6,000		6,000
all	Allowance to install 2" local water line to each tank	1800	ft	1	1800	65.00	5.00		70.00	117,000	9,000		126,000
all	Allowance to install 2" valves & fittings for water line	60	ea	4	240	65.00	120.00		380.00	15,600	7,200		22,800
1	Allowance to install 3" water line to KOH / main rack	600	ft	0.6	480	65.00	6.00		45.00	31,200	4,800		36,000
1	Fab & install 4" KOH line for main duct for system 1	1180	ft	1	1180	65.00	50.00		115.00	76,700	59,000		135,700
1	Fab & install 4" KOH line for tanks in system 1	1740	ft	1	1740	65.00	50.00		115.00	113,100	87,000		200,100

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES

Eichleay Engineers Inc. of CA

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
2	Fab & install 4" KOH line for main duct for system 2	330	ft	1	330	65.00	50.00		115.00	21,450	16,500		37,950
2	Fab & install 4" KOH line for tanks in system 2	750	ft	1	750	65.00	50.00		115.00	48,750	37,500		86,250
3	Fab & install 4" KOH line for main duct for system 3	160	ft	1	160	65.00	50.00		115.00	10,400	8,000		18,400
3	Fab & install 4" KOH line for tanks in system 3	760	ft	1	760	65.00	50.00		115.00	49,400	38,000		87,400
4	Fab & install 4" KOH line for main duct for system 4		ft			65.00	50.00		50.00				
4	Fab & install 4" KOH line for tanks in system 4	300	ft	1	300	65.00	50.00		115.00	19,500	15,000		34,500
all	Fab & install 2" drain to tank & ground from duct	60	ea	55	3300	65.00	2,100.00		5,675.00	214,500	126,000		340,500
all	Fab & install 1" CIP line at each duct	60	ea	65	3900	65.00	4,700.00		8,925.00	253,500	282,000		535,500
1	Fab & install 1 1/2" FRP piping	1	ea	48	48	65.00	4,000.00		7,120.00	3,120	4,000		7,120
1	Fab & install 2" FRP piping	1	ea	34	34	65.00	2,500.00		4,710.00	2,210	2,500		4,710
1	Allowance for 4" ss pipe at KOH unit	1	lot	100	100	65.00	5,000.00		11,500.00	6,500	5,000		11,500
all	Allowance for small crane / fork lift for piping work	1	lot					20,000.00	20,000.00			20,000	20,000
	TOTAL - Process Piping & Equipment				31786					2,066,090	1,774,780	28,000	3,868,870

Eichl... Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
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CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	Contingency												
2.00	Site Construction					25%	25%	25%				2,338	2,338
3.00	Concrete					30%	30%	30%				24,315	24,315
4.00	Masonry					25%	25%	25%					
5.00	Metals					25%	30%	25%				5,000	5,000
6.00	Wood & Plastics					25%	25%	25%					
7.00	Thermal & Moisture Protection					25%	25%	25%				41,150	41,150
8.00	Door & Windows					25%	25%	25%					
9.00	Finishes					25%	25%	25%					
10.00	Specialties					25%	25%	25%					
11.00	Equipment					25%	25%	25%					
12.00	Furnishings					25%	25%	25%					
13.00	Special Construction					25%	25%	25%					
14.00	Conveying Systems					25%	25%	25%					
15.00	Mechanical HVAC & Plumbing					25%	25%	25%					
16.00	Electrical					35%	35%	35%		47,452	63,627	3,150	114,229
17.00	Instruments & Controls					30%	30%	30%		23,693	45,180		68,873
18.00	Process Piping & Equipment					35%	35%	35%		723,132	621,173	9,800	1,354,105
	Design Fee Allowance							35%				307,584	307,584
	Construction Management Allowance							30%				52,729	52,729
	Plan Check & Permit Fee Allowance							25%				452	452
	Third Party Inspection Allowance							25%				339	339
	ROUND OFF	1											
	TOTAL - Contingency									794,276	729,980	446,856	1,971,112

BACT Attachment B

Sizing and Purchase Costs for Control Devices

Carbon Adsorption Equipment Prices Based on Technical Assessment Document*				
Equipment Capacity			Equipment Cost	
VOC System	RTO Capacity Basis SCFM (Eichleay Study)	Absorption Capacity Basis SCFM (Without Combustion Air)	1994 Cost (TAD)	Cost Escalated to 2008 at 3% per Year
1	16,000	12,900	$268,655	$419,000
2	22,000	17,800	$305,546	$476,000
3	13,000	10,500	$247,914	$386,000
4	13,000	10,500	$247,914	$386,000
Totals				$1,667,000
* Technical Assessment Document p.77				
Water Scrubber Equipment Prices Based on STI Study*				
Case			Site Specific, CIP, Maximum Vapor Rate	
VOC System	RTO Capacity Basis SCFM (Eichleay Study)	Absorption Capacity Basis SCFM (Without Combustion Air)	2003 Cost (STI)	Cost Escalated to 2008 at 3% per Year
1	16,000	12,900	$63,822	$99,000
2	22,000	17,800	$71,387	$111,000
3	13,000	10,500	$59,411	$93,000
4	13,000	10,500	$59,411	$93,000
Totals			0	$396,000
* STI Study, p. 21				

Thermal Oxidizer Equipment Cost

Thermal Oxidizer Equipment Prices (Without Heat Recovery) Based on EPA Cost Manual Section 3.2, Chapter 2

Case		Equipment Cost	
VOC System	RTO Capacity Basis SCFM (Eichleay Study)	1988 Cost (EPA)	Cost Escalated to 2009 at 3% per Year
1	16,000	$100,600	$187,100
2	22,000	$108,400	$201,700
3	13,000	$95,800	$178,200
4	13,000	$95,800	$178,200
Totals			$745,200

Regenerative Thermal Oxidizer Equipment Prices (95% Heat Recovery) Based on Quotations Received in Eichleay Study

Case		Equipment Cost	
VOC System	RTO Capacity Basis SCFM (Eichleay Study)	2005 Cost (EPA)	Cost Escalated to 2009 at 3% per Year
1	16,000	$414,200	$466,200
2	22,000	$502,500	$565,600
3	13,000	$365,200	$411,000
4	13,000	$365,200	$411,000
Totals			$1,853,800

Refrigerated Condenser Sizing with Equipment Cost Based on EPA Cost Manual Section 3.1, Chapter 2						
VOC System	RTO Capacity Basis (Eichleay Study)	System Capacity less Combustion Air	Refrigerated Condenser Duty Btu/hour	Refrigerated Condenser Duty Tons	1990 Cost (EPA)	Cost Escalated to 2008 at 3% per Year
1	16000	12,900	3,909,000	326	$430,200	$754,400
2	22000	17,800	5,393,000	449	$526,300	$922,900
3	13000	10,500	3,182,000	265	$378,100	$663,000
4	13000	10,500	3,182,000	265	$378,100	$663,000
Total				1,306	$1,027,200	$3,003,300

Condenser Duty Calculation:						
Condenser Duty Basis:	Inlet vapor stream contains a maximum of 16,000 ppmv ethanol at 86 F					
	Condensing Temperature is -12 F, 90% of Ethanol Condensed					
Latent Heat Ethanol	369	Btu/lb				
Vapor Heat Capacity	0.21	Btu/lb				
Latent Heat water	1060	Btu/lb				

Condenser Heat Balance Based on 100 moles of Inlet Vapor:						
		Moles In	Moles Out		Enthalpy Change Btu/100 moles vapor	
		Vapor	Vapor	Liquid		
Ethanol Vapor		1.60	0.16	1.44	-24,594	
Water Vapor		4.20	0.00	4.20	-81,783	
CO2		94.20	94.20	0.00	-85,319	
Sub Total		100.00	94.36	5.64	-191,696	
Total		100.00	100.00		-191,696	
-191696	Btu/100 moles	=	-5.05	Btu/scf		

BACT Attachment C

Utilities and Other Annual Costs

Costs for Utilities and Other Annual Operating Expenses

Costs for utilities and other annual costs are summarized in the tables on the following two pages. The basis and calculation of the costs is presented below:

Natural Gas – applicable to Cases 1, 2 and 5 only

Case 1: Thermal Oxidizer with no heat recovery

The estimate is based on the Eichleay Study which estimated the annual fuel consumption for 95% thermally efficient oxidizers at 67,412 therms/year = 6,741 MMBtu/year. At a natural gas cost of $8.00/MMBtu, the annual cost is 6,714 x $8.00 = $53,900 per year for all four regenerative thermal oxidizers with 95% heat recovery. Dividing by (1-95%) yields the fuel cost for a unit with zero heat recovery:

Case 1 Fuel Cost = $53900/(1-95%) = **$1,078,000 per year**

Case 2: Regenerative Thermal Oxidizers

Case 2 is the Eichleay Study case. Therefore,

Case 2 Fuel Cost = **$53,900 per year**

Case 5 – Carbon Adsorption

As calculated else where in this document, the carbon adsorption system will adsorb 350.62 tons per year of VOC's. Per the TAD, 11,800 lb of steam is required to recover I ton of ethanol. Given a boiler fuel requirement of 1,350 Btu/lb (based on absorbed boiler duty of 1,080 Btu/lb to produce 100 psig steam from 60 F water and an 80% combustion efficiency), annual fuel consumption for recovery of 350.62 tons ethanol per year is 11,800 x 350.62 x $1{,}350/10^6$ = 5,585 MMBtu/year.

Case 5 Fuel Cost = 5,585 MMBtu/year x $8.00/MMBtu = **$44,700 per year**

Electric Power

Cases 1 and 2 – Thermal Oxidizers

For these cases, power consumption is considered to be only that for the ID fans. Per the Eichleay study, annual power consumption for the ID fans associated with the thermal oxidizers is 586 kw per hour for the 120 day crush season. Annual cost at a unit power cost of $0.11/kwh is therefore

586 x 120 x 24 x $0.11 = **$185,600 per year**

Cases 4 and 5 – Carbon Adsorption and Water Scrubber

As in cases 1 an 2 above, only the ID fan power will be considered for these cases. However, these cases do not have to handle the extra 23.6% combustion air. Therefore, the electric power cost for the thermal oxidizer case will be divided by 1.236 to reflect lower flow rates. On this basis, Cases 3, 4 and 5 have an annual power cost of

$185,600/1.236 = **$150,200 per year (for cases 4 and 5)**

Case 3 – Refrigerated Condenser

Electric power for this case includes the same ID fan power consumption as Cases 4 and 5 and also requires power for operation of the refrigeration unit. This case requires 1,306 tons of refrigeration for the design case and a utilization factor of 60 % will be assumed. Additionally, a coefficient of performance of 3.5 will be assumed for the equipment. Power demand for a 120 day operating season is thus:

60% x 1,306/3.5 x 12,000 Btu/ton x 1 kW/3,413 Btu x 120 days x 24 hr/day
= 2,267,000 kWh/year

At $0.11/kWh, the cost for the refrigeration power is $249,400. Adding $150,200 for ID fan power (calculated above), total power coat for this case is **$399,600 per year**.

Water Disposal Cost – applicable to Case 4 and 5 only

Case 4 – Water Scrubber

Water disposal requirements and costs for Case 4 (water scrubber) are taken from the STI Study:

- Water Disposal Required: 6 gpm for each 5000 scfm air flow for 90 day crush season.
- Disposal Cost: $0.25/gallon

Total airflow for all four systems, corrected to subtract the combustion air, is
(16,000 + 22,000 + 13,000 + 13,000)/1.236 = 51,800 scfm

Wastewater Rate = 51,800 scfm x 6 gpm/5,000 scf = 62 gpm

Annual wastewater generation = 62 gpm x 90 days x 1,440 minutes/day
= 8,035,000 gallons per year
Annual water disposal cost = 8,035,000 gallons x $0.25/gallon =**$ 2,008,800/yr**

Case 5 - Carbon Adsorption

Wastewater is generated from the regeneration of the carbon bed. Per the TAD, 11,800 lb steam is required to recover I ton of ethanol. Given liquid densities of 8.34 and 6.61 lb/gallon for water and ethanol respectively, the amount of wastewater produced per ton of ethanol recovered is (11,800/8.34) + (2,000/6.61) = 1,718 gal/ton ethanol.

As calculated in this BACT analysis, the carbon adsorption unit will adsorb 350.62 tons per year of VOC's. Produced wastewater is therefore 350.62 tons x 1,718 gal/ton = 602,400 gallons per year.

Disposal cost at $0.25/gal is 602,400 x $0.25 = **$150,600 per year**

Carbon Replacement Cost - applicable to Case 5 only

Per the TAD, activated carbon adsorbs 18% of its weight in ethanol. However, with regeneration, approximately 1/3 of the ethanol initially adsorbed stays on the carbon bed. In addition, due to the seasonal operation of a winery, the carbon is expected to have a lifetime of 10 years.

As calculated in this BACT analysis, the carbon adsorption unit will adsorb 350.62 tons per year of VOC's. Assuming this occurs over a 120 day crush season with three regenerations per day, the amount adsorbed per cycle is 350.62/(120 x 3) = 0.97 tons/cycle = 1,940 lb-VOC/cycle. Assuming a daily regeneration cycle and allowing for a dual bed for regeneration purposes, the amount of carbon required for the facility is 2 x 1,940/(18% x .667) = 32,300 lb carbon.

Given a cost of $2/lb for carbon and annualizing the cost over the 10 year life,

Carbon Replacement Cost = 0.163 x $2.00 x 32,300 = **$10,500 per year**.

Cooling Water Cost – applicable to Case 5 only (carbon adsorption)

Based on values presented in the TAD, the following parameters apply:

Cooling water consumption = 82,600 gallons of cooling water per ton of VOC adsorbed

Cooling Water Unit Cost = $0.53 per 1000 gallons

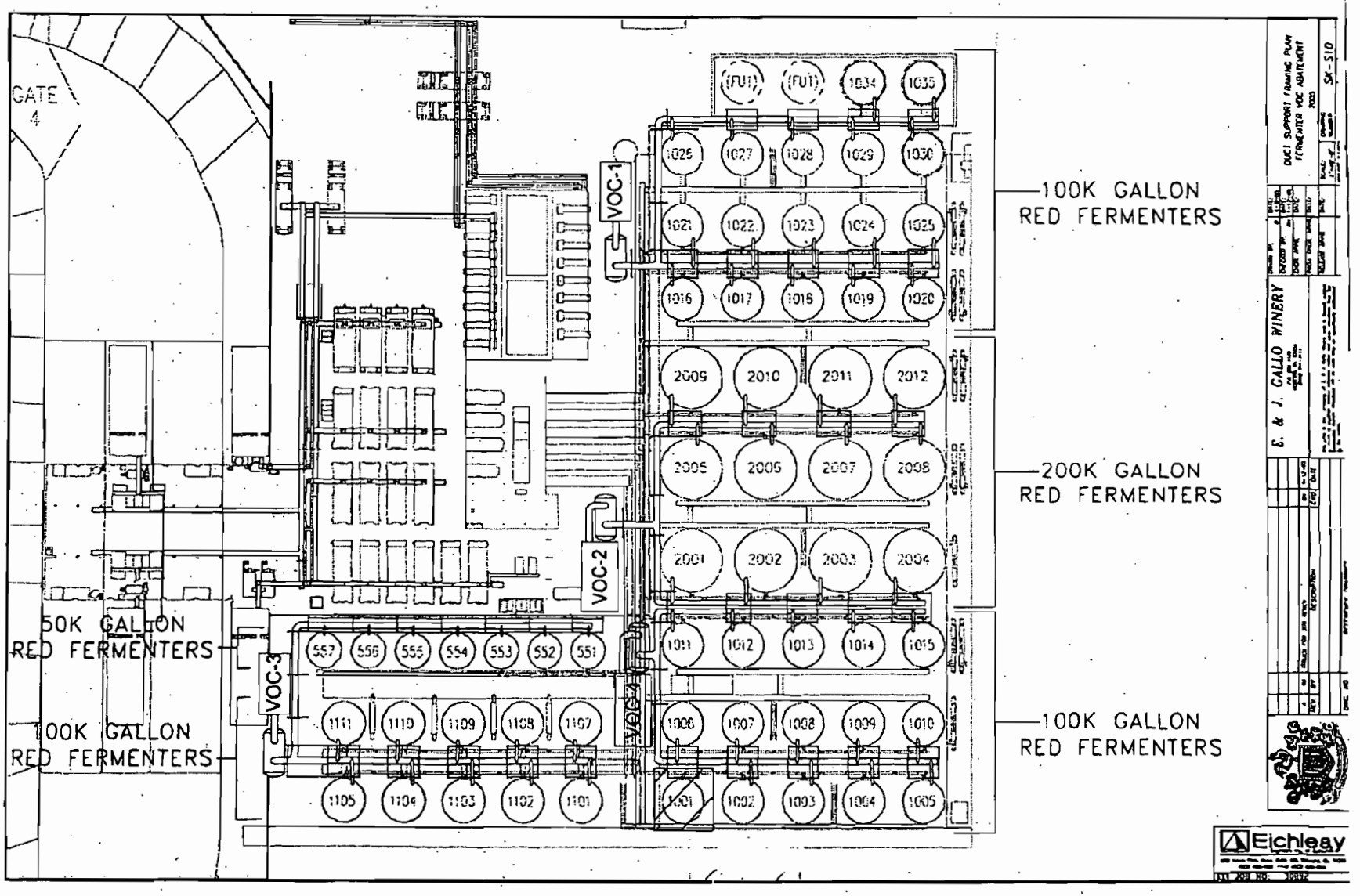
Given 350.62 tons of VOC adsorbed per year, annual cost for cooling water is

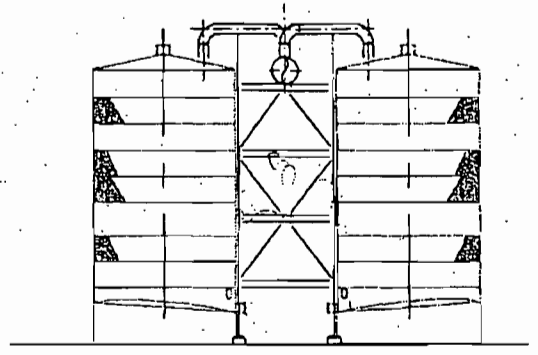
82,600 x 350.62 x $0.53/1000 = **$15.800 per year**

Utilities and Other Annual Costs					
Control Device	**Case 1 Thermal Ox**	**Case 2 RTO**	**Case 3 Refrigerated Cond.**	**Case 4 Water Scrubber**	**Case 5 Carbon Adsorption**
Natural Gas	$1,078,000	$53,900	$0	$0	$44,700
Electricity	$185,600	$185,600	$399,600	$185,600	$185,600
Water Disposal	$0	$0	$0	$2,008,800	$150,600
Cooling Water	$0	$0	$0	$0	$15,800
Carbon Replacement	$0	$0	$0	$0	$10,500
Total	**$1,263,600**	**$239,500**	**$399,600**	**$2,194,400**	**$407,200**

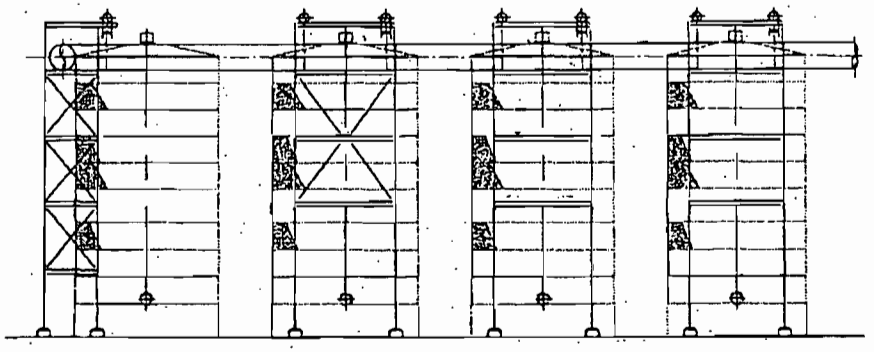
BACT Attachment D

Eichleay Drawings


GATE 4
VOC-1
VOC-2
VOC-3
VOC-4
100K GALLON
RED FERMENTERS
200K GALLON
RED FERMENTERS
100K GALLON
RED FERMENTERS
50K GALLON
RED FERMENTERS
100K GALLON
RED FERMENTERS
E. & J. GALLO WINERY
DUCT SUPPORT FRAMING PLAN
FERMENTER VOC ABATEMENT
2003
SK-S10
Eichleay



TYP. CROSS SECTION



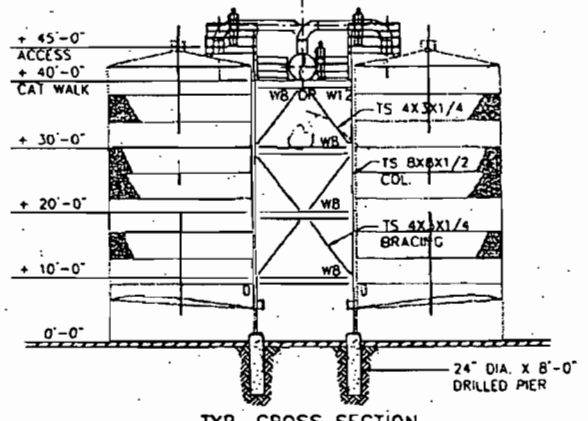
TYPICAL LOGITUDINAL SECTION

E. & J. GALLO WINERY

TYP. OUCI SUPPORT FRAMING DETAILS
FERMENTER VOC ABATEMENT
MOD.

SK-512

Eichleay



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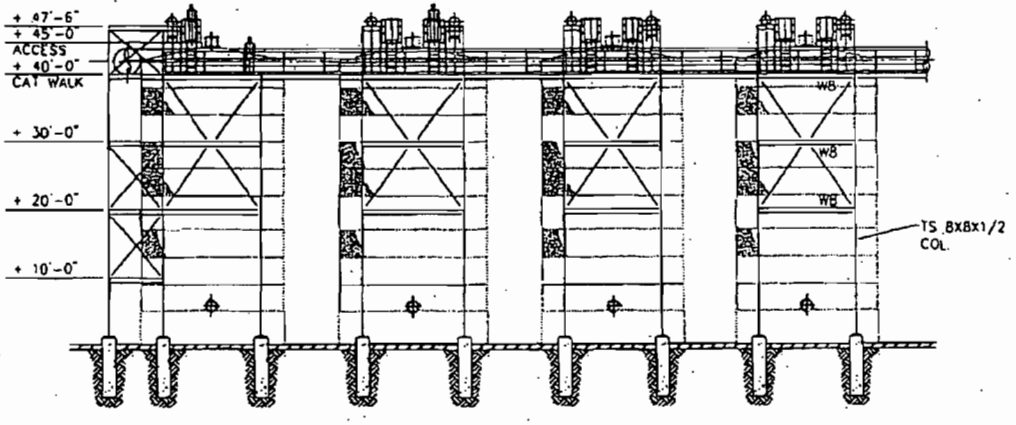


TYPICAL LOGITUDINAL SECTION

E. & J. GALLO WINERY

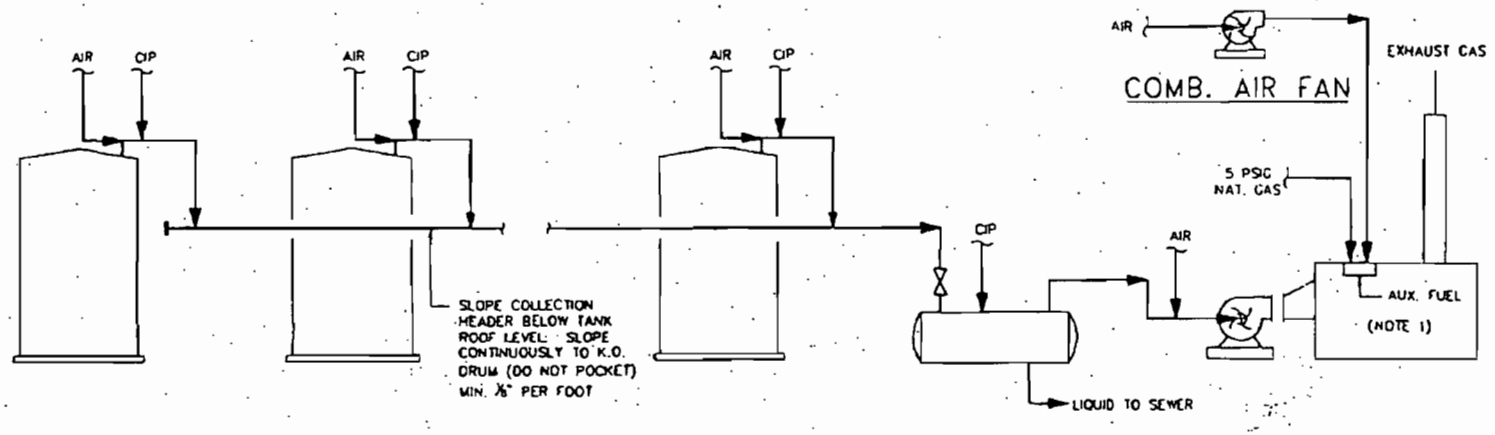
MR. DUCT SUPPORT FRAMING DETAILS
PERIMETER VOC ABATEMENT
2003

SK-512

30892

PRELIMINARY

Eichleay



FERMENTER #1 FERMENTER #2 ..... FERMENTER #n VAPOR/LIQUID SEPARATOR (K.O.DRUM) BLOWER RTO UNIT

NOTES

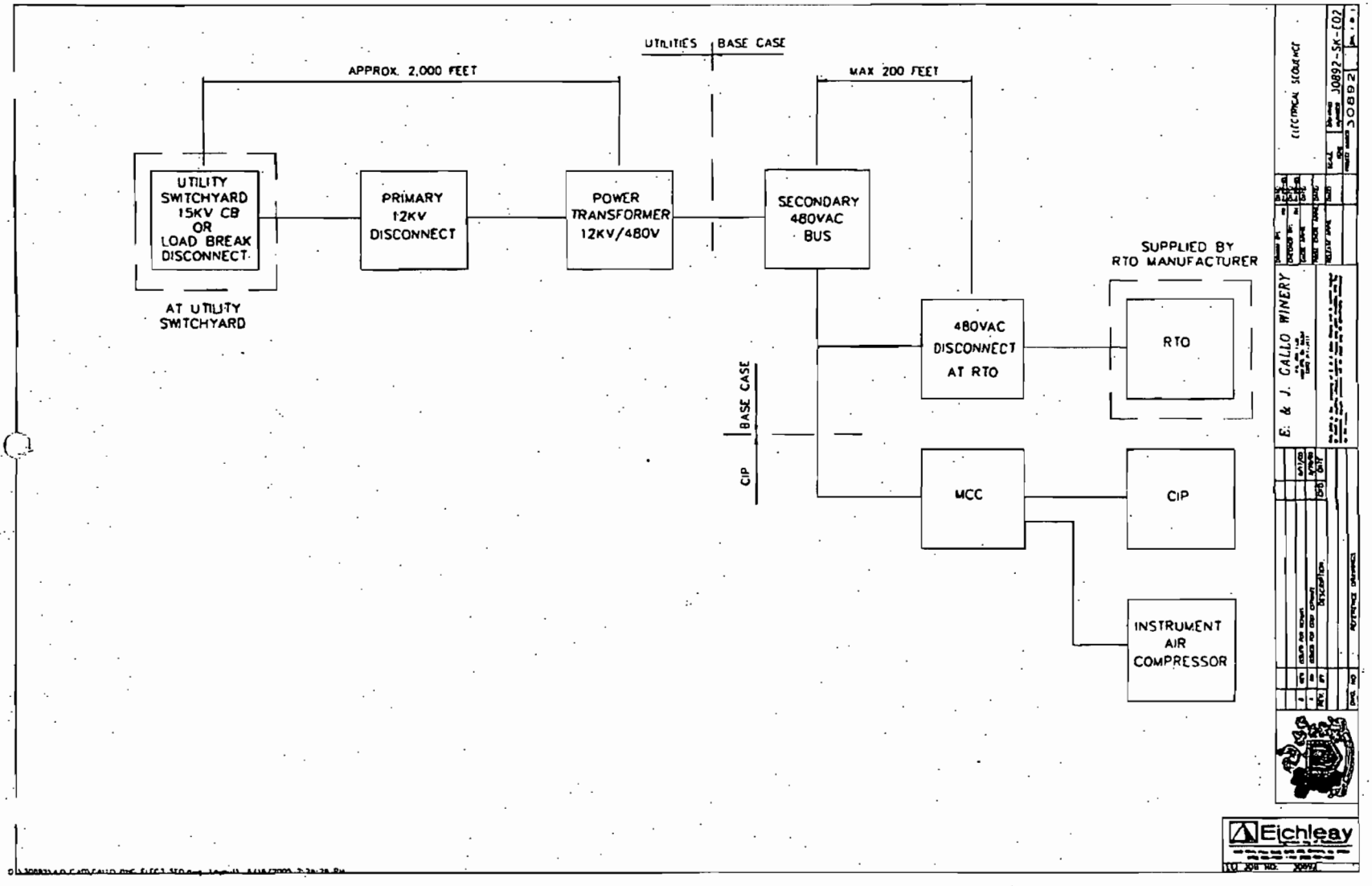
1. RTO DILUTION AIR CONTROLS
   - A. ADD COOLING AIR AT ≥ 30% LEL (9,840 PPM ETHANOL)
   - B. ADD COMBUSTION AIR TO MAINTAIN ≥ 4% OXYGEN IN RTO VAPOR INLET
   - C. ADD SUPPLEMENTAL FUEL IF RTO VAPOR INLET IS < 3% LEL (984 PPM ETHANOL)

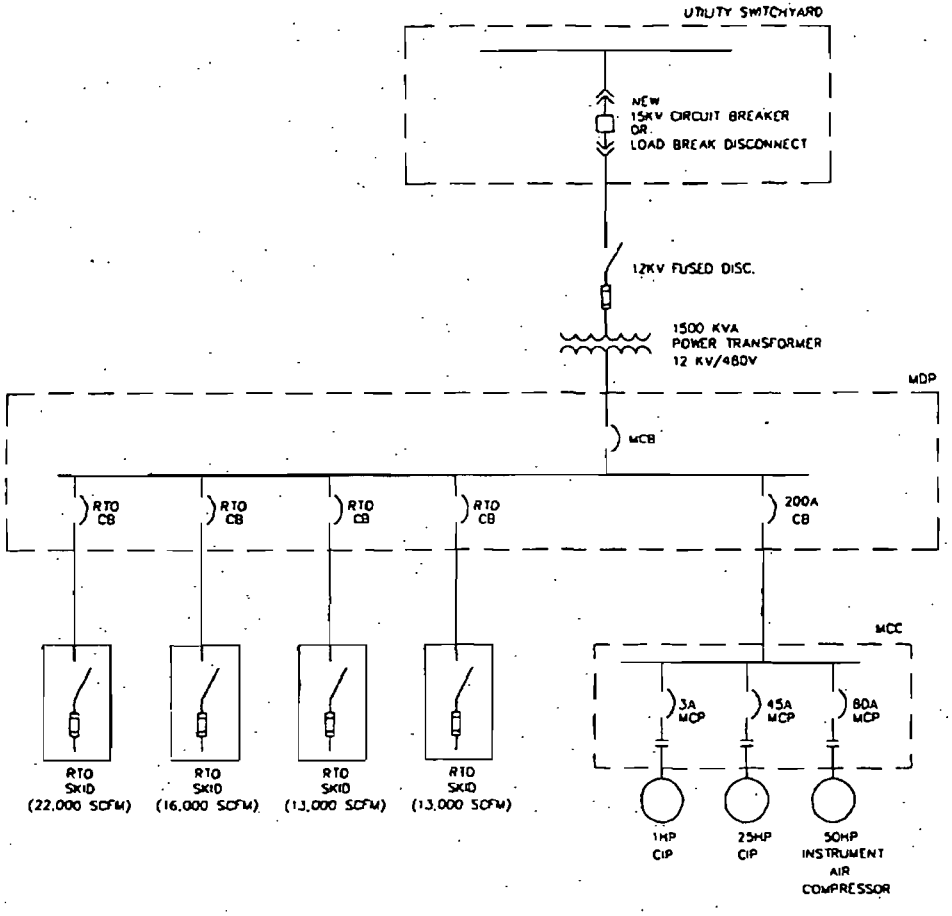
E. & J. GALLO WINERY

PROCESS FLOW DIAGRAM FERMENTER VAPOR COLLECTION SYSTEM

SK-10897-001

Eichleay


UTILITIES | BASE CASE
APPROX. 2,000 FEET
MAX 200 FEET
UTILITY SWITCHYARD 15KV CB OR LOAD BREAK DISCONNECT
AT UTILITY SWITCHYARD
PRIMARY 12KV DISCONNECT
POWER TRANSFORMER 12KV/480V
SECONDARY 480VAC BUS
480VAC DISCONNECT AT RTO
SUPPLIED BY RTO MANUFACTURER
RTO
CIP | BASE CASE
MCC
CIP
INSTRUMENT AIR COMPRESSOR
ELECTRICAL SCHEMATIC
E. & J. GALLO WINERY
30892
30892-SK-102
Eichleay



ELECTRICAL
SINGLE LINE

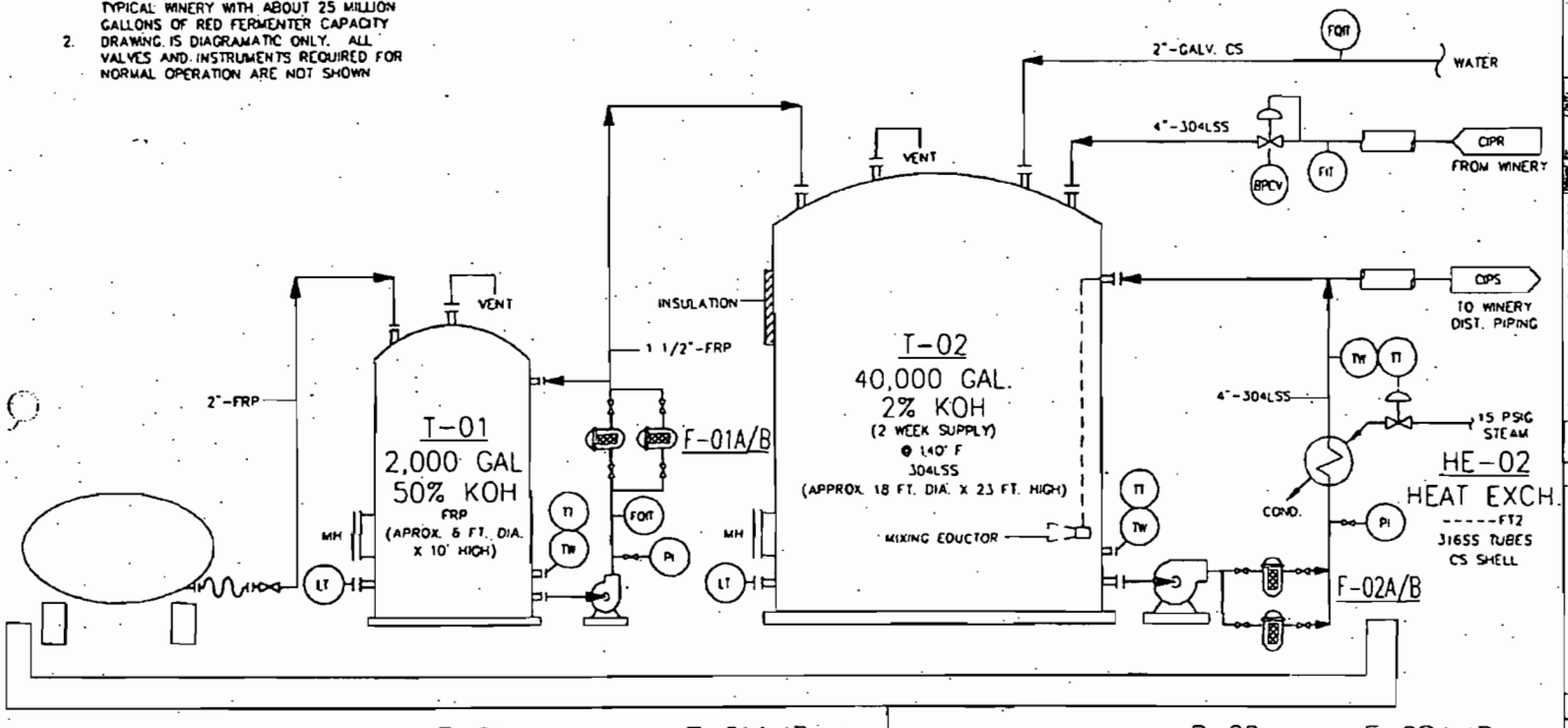
30892-SK-(01)

E. & J. GALLO WINERY

Eichleay

NOTES

1. EQUIPMENT SIZES SHOWN ARE FOR A TYPICAL WINERY WITH ABOUT 25 MILLION GALLONS OF RED FERMENTER CAPACITY
2. DRAWING IS DIAGRAMATIC ONLY. ALL VALVES AND INSTRUMENTS REQUIRED FOR NORMAL OPERATION ARE NOT SHOWN



TANK TRUCK
50% KOH
(DELIVER 1500 GAL ±EVERY 2 WEEKS)

P-01
TRANSFER PUMP
20 GPM @ 50 FT.
50% KOH
FRP
1 HP

F-01A/B
50%KOH FILTER
RATED 20 GPM/150PSIG
FRP
20 MICRON

CONCRETE CONTAINMENT WITH COATING (APPROX. 40' x 60' x 2.5' CURB)

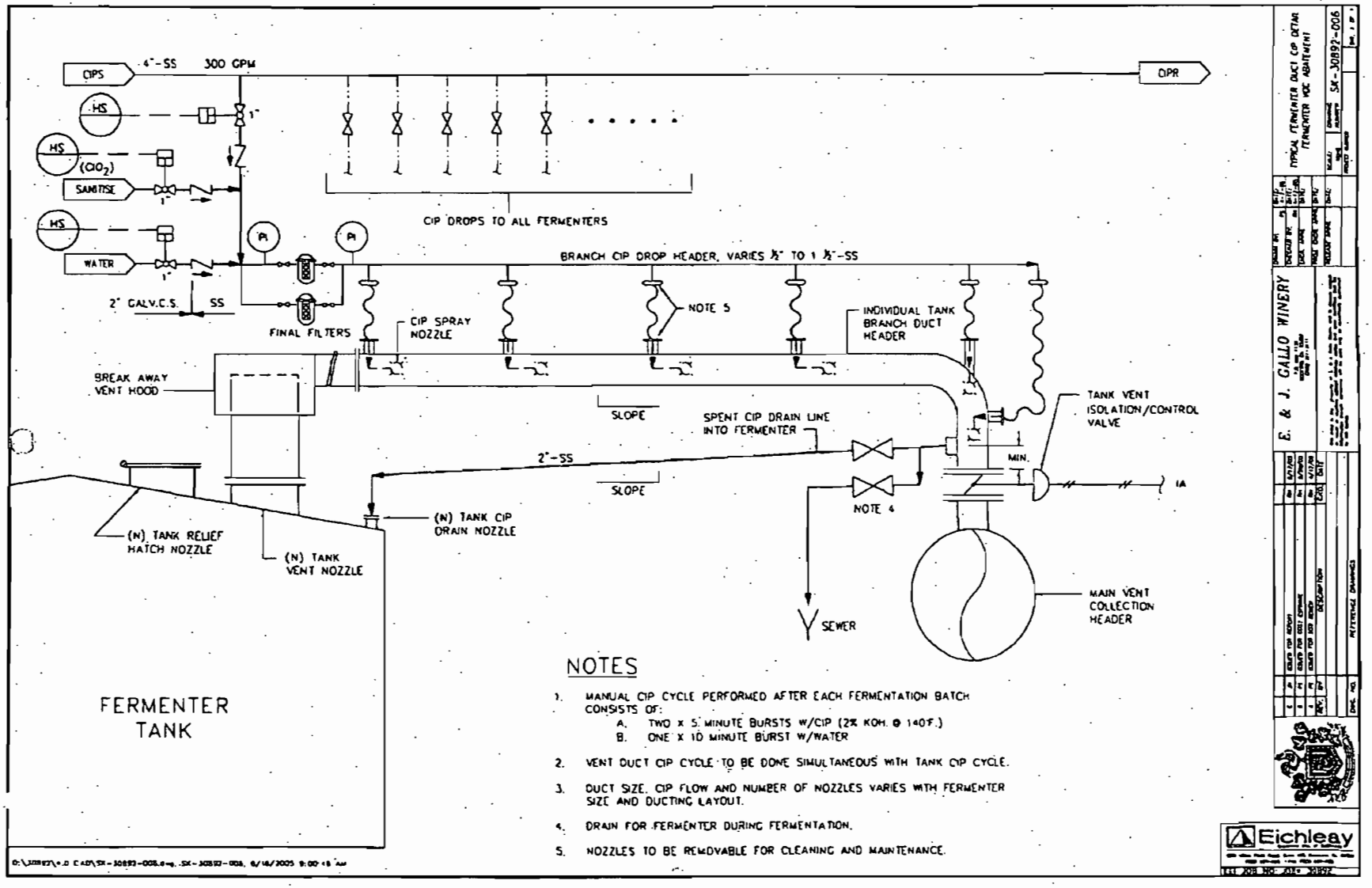
P-02
CIP PUMP
300 GPM @ 200 FT.
2% KOH
316SS
25 HP

E-02A/B
CIP FILTERS
RATED 300 GPM/150PSIG
304SS
20 MICRON

PROCESS FLOW DIAGRAM
BULK CIP MAKE-UP
FERMENTER VOC ABATEMENT
SK-30092-004

E. & J. GALLO WINERY

Eichleay



NOTES

1. MANUAL CIP CYCLE PERFORMED AFTER EACH FERMENTATION BATCH CONSISTS OF:
   - A. TWO X 5 MINUTE BURSTS W/CIP (2% KOH. @ 140°F.)
   - B. ONE X 10 MINUTE BURST W/WATER
2. VENT DUCT CIP CYCLE TO BE DONE SIMULTANEOUS WITH TANK CIP CYCLE.
3. DUCT SIZE, CIP FLOW AND NUMBER OF NOZZLES VARIES WITH FERMENTER SIZE AND DUCTING LAYOUT.
4. DRAIN FOR FERMENTER DURING FERMENTATION.
5. NOZZLES TO BE REMOVABLE FOR CLEANING AND MAINTENANCE.

E. & J. GALLO WINERY

TYPICAL FERMENTER DUCT CIP DETAIL FERMENTER VOC ABATEMENT

SK-30892-006

Eichleay

Appendix B

BACT Guideline 5.4.13 and Top Down BACT Analysis

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 5.4.13*

Last Update 10/6/2009

Wine Storage Tank

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

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

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

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

Top Down BACT Analysis for VOC Emissions

Wine Storage

Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse guideline 5.4.13, 1st quarter 2013, identifies achieved in practice BACT for wine storage tanks as follows:

1) Insulation or Equivalent**, Pressure Vacuum Relief Valve (PVRV) set within 10% of the maximum allowable working pressure of the tank; "gas-tight" tank operation; and continuous storage temperature not exceeding 75 degrees F, achieved within 60 days of completion of fermentation.
   ***Tanks made of heat-conducting materials such as stainless steel may be insulated or stored indoors (in a completely enclosed building, except for vents, doors and other essential openings) to limit exposure to diurnal temperature variations. Tanks made entirely of non-conducting materials such as concrete and wood (except for fittings) are considered self-insulating.*

The SJVUAPCD BACT Clearinghouse guideline 5.4.13, 1st quarter 2013, identifies technologically feasible BACT for wine storage tanks as follows:

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

Step 2 - Eliminate Technologically Infeasible Options

None of the above listed technologies are technologically infeasible.

Step 3 - Rank Remaining Control Technologies by Control Effectiveness

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

Step 4 - Cost Effectiveness Analysis

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

- 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.
- To expand the scope and generality of this BACT, the cost-effectiveness analysis will be based on a hypothetical "industry-typical" storage tank operation consisting of a battery of twelve (12) insulated storage tanks each with a capacity of 200,000 gallons (total capacity 12 x 200,000 = 2,400,000 gallons). Since this tank capacity exceeds the average wine tank size at The Wine Group, if it is determined that any particular control system is not cost effective for the 200,000 gallon tanks, it can be assumed to not be cost effective at The Wine Group due to economy of scale.
- Total potential annual throughput for the hypothetical tank battery is determined based on the District's model for calculating the PE for a winery operation. The following assumptions are applicable:

    - The winery production capacity is limited by total tank volume rather than by grape pressing or crushing capacity (typical for most wineries).
    - Each gallon of wine produced is transferred 8 times as a part of the post fermentation processing, blending and bottling (basic parameter in the District's PE model).
    - The winery produces 100% red wine (conservative assumption since red wine has a lower residence time requirement in the winery and thus a greater amount of red wine can be produced versus white wine when considering only the tank capacity as a limiting factor).
    - Maximum average annual ethanol content of produced wine is 16 volume % (basic parameter in the District's PE model).
    - The emission factor for wine in insulated tanks with 16 volume % ethanol is 0.143 lb-VOC/1000 gallons throughput (per District's FYI-114, Estimating Emissions from Winery Tanks.
    - The wine crush season is 120 days (basic parameter in the District's PE model).
    - The red wine residence time requirement is 45 days (basic parameter in the District's PE model).

Per the District's PE model, the wine production capacity associated with 3,000,000 gallons of tank capacity is:

$W4 = (V_T \times D_r) / R_{TS}$ (limited by overall tank processing)
D_r = days in a red wine crush season = 120 days
R_{TS} = Total winery retention time for red wine = 45 days
V_T = Effective Total Winery Cooperage (gal) for red wine
W4 = (2,400,000 x 120) / 45 = 6,400,000 gallons per year

Since each gallon is transferred 8 times, the total storage throughput is:

Throughput = 8 x 6,400,000 = 51,200,000 gallons per year

Storage tank emissions are calculated using the emission factor:

Emissions = 51,200,000 gal/year x 0.143 lb-VOC/1000 gallons
= 7,322 lb/year = 3.7 tons per year

- The emissions estimate above is based on insulated storage tanks equipped and operated in accordance with District Rule 4694 which represents current Achieved-in-Practice BACT. Since this tank configuration is almost universal in the San Joaquin Valley. This emission level is considered to be "industry standard" and will be considered to be the uncontrolled emissions from the tanks for purposes of this analysis.

Capture of VOCs with Thermal or Catalytic Oxidation/ Carbon Adsorption/Absorption or Condensation (Options 2,3,4, and 5)

A common feature of all of these options is that they require installation of a collection system for delivering the VOC's 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 below.

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 BACT Attachment 1.
- 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 250,000 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 (per applicant) 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.[5] 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.
- Linear feet of ducting required was extracted from the Eichleay Estimate for a similar system at Gallo-Livingston (see BACT Attachment 1).
- Costs for structural steel supports and foundations were extracted from the Eichleay Estimate for a similar system at Gallo-Livingston (see BACT Attachment 1).
- 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 & Timmerhaus[6].
- Capital costs taken from the Eichleay estimate are 2005 dollars. These are escalated to 2012 based on 2% overall escalation per year.

Fixed Capital Investment is summarized in the following table:

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

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

Fixed Capital Investment for Options 2, 3, 4 and 5									
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
Direct Cost									
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
Drilled Piers	32	ea.					$1,000	$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
Indirect Costs									
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 2012 @ 2%/year									$123,522
Fixed Capital Investment (2012 Cost)									$954,281

Annualized Capital Investment (based on ductwork):

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

Amortization Factor = 0.163 per District policy, amortizing over 10 years at 10%

Therefore,

Annualized Capital Investment = $954,281 x 0.163 = $155,500

Emission Reduction:

Option 2 is capable of a 98% reduction in 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.

Annual Emission Reduction = Uncontrolled Emissions x 0.98
= 3.7 tons-VOC/year x 0.98
= 3.6 tons-VOC/year

Cost Effectiveness

Cost Effectiveness = Annualized Cost/Annual Emission Reductions

Cost Effectiveness = $155,500/4.5 tons-VOC = $43,344/ton-VOC

As shown above, the cost of VOC reduction by capture of VOCs with thermal or catalytic oxidation, carbon adsorption, absorption or condensation would be greater than the $17,500/ton cost effectiveness threshold for VOC in the District BACT policy, based only on the direct cost required for the collection ducting. Therefore these options are not cost-effective and will not be considered for this project.

Step 5 - Select BACT

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

Attachments

BACT Attachment 1: Development of Direct Costs for Installation of a VOC Collection System on a Battery of Wine Storage Tanks
BACT Attachment 2: Plot Plan for Gallo-Livingston (Eichleay Study)
BACT Attachment 3: Ducting Costs for VOC-2 (Eichleay Study)
BACT Attachment 4: Structural Steel Costs for VOC-2 (Eichleay Study)
BACT Attachment 5: Foundation Costs for VOC-2 (Eichleay Study)

BACT Attachment 1

Development of Direct Costs for Installation of a VOC Collection System on a Battery of Wine Storage Tanks

Background

During the development of District Rule 4694 (Wine Fermentation and Storage Tanks), The Wine Institute commissioned a study by Eichleay Engineers of California to develop costs for installation of VOC controls on all wine fermentation tanks at the Gallo winery located at Livingston, CA. The SJVAPCD participated in development of the study and in the review of the final draft. The District reviewed this estimate (Eichleay study) in conjunction with the development of District Rule 4694 (see Appendix C, Final Draft Staff Report - Rule 4694, December 15, 2005). The District's review indicated that, although the District took issue with various scope elements of the overall estimate, the estimating methodology employed appears to be fundamentally sound and follows accepted practice in the engineering and construction industry, accurately estimating the material quantities required for the stated scope and applying reasonable unit rates and costs for materials and labor for development of direct costs.

The Eichleay study developed detailed direct cost estimates for four separate tank batteries at Gallo-Livingston; VOC-1, '-2, '-3 and '-4 (see plot diagram in BACT Attachment 2). The direct cost estimate scope for each battery included a stainless steel ducting manifold system connected to a VOC control device and structural steel ducting supports with associated foundations. VOC-2 is a tank battery consisting of twelve (12) 200,000 gallon capacity tanks, identical to the hypothetical "industry-typical" tank battery installation which forms the basis for the cost effectiveness calculations for this BACT determination. The estimates of ducting, steel supports and foundations prepared in the Eichleay study for VOC-2 can be used as a basis to establish costs for the cost effectiveness evaluation required by this BACT determination.

Approach and Estimate Basis

Ducting

BACT Attachment 3 is the detailed direct cost estimate from the Eichleay study for ducting for VOC-2 (annotated to indicate the required subtotals). Since VOC-2 at Gallo-Livingston consists of twelve fermentation tanks rather than storage tanks, the diameter of the estimated ductwork is larger than required for storage-only tanks due to the much larger vent rate from fermentation. However, since the tank sizes and layout considerations would not be affected by tank utilization, the Eichleay estimate of total linear footage and duct fittings ductwork can be utilized directly. The estimate details in BACT Attachment 3 are utilized in the following manner to develop ducting costs for the "industry typical" tank battery:

- Linear feet of ductwork required is taken directly from the Eichleay estimate for VOC-2 (BACT Attachment 3). Linear feet required for individual branch connections to each tank is given by the footage of 12" diameter ducting while the linear footage for the main header is represented by the balace of the ductwork for VOC-2. Based on this approach, 75 linear feet of ducting is required for branch connections to the tanks while 870 feet of ducting is required for the main headers and the ducting run to the control device. Since the "industry-typical" ducting for storage tanks has been determined to be 6" diameter for branch connections and 12" diameter for the main header, the following material requirements are established for the "industry-typical" storage tank battery:

6" diameter ducting: 75 linear feet
12" diameter ducting: 870 linear feet

- Unit direct cost ($ per foot) of 12" diameter ducting can be determined by adding the labor and material costs required and dividing by the total linear footage of the particular diameter of ducting included in the estimate. For the 75 linear feet of 12" diameter ducting included in the Eichleay estimate for VOC-2, total labor and material costs were estimated at $5,137 and $5,650 respectively. Dividing each fiqure by 75 yields the unit labor and material costs for 12" diameter ducting:

  Unit labor cost for 12" ducting: $68.49/ft
  Unit material cost for 12" ducting: $75.33/ft

- The Eichleay estimate did not include estimates of direct cost for 6" diameter duct. Therefore, it is necessary to develop a cost by approprate factoring of the 12" diameter cost. To adjust the direct cost to a 6" system, cost equations for stainless steel plate ductwork are taken from the EPA Air Pollution Control Manual, Section 2, Chapter 1, Table 1.9, which indicates a cost equation for stainless steel plate duct as follows:

  Duct Cost = 6.29 x $(\text{Duct Diameter}_{\text{inches}})^{1.23}$

  Using this equation form, it is apparent the relative cost of 6" duct versus 12" duct can be calculated as follows:

  6" Duct Cost = 12" Duct Cost x $(6/12)^{1.23}$

  Since the EPA cost manual develops total direct cost based on applying additional factors to the duct cost, the use of the above factor for adjustment of the total direct cost is consistent with EPA cost estimation methods.

  Therefore,

  Unit Labor Cost for 6" Duct = $\$68.49 \times (6/12)^{1.23} = \$29.20$/linear foot

  Unit Material Cost for 6" Duct = $\$75.33 \times (6/12)^{1.23} = \$32.11$/linear foot

Structural Steel

- Structural steel cost can be assumed to be the same for the "industry-typical" system as for VOC-2 since the heights and sizes of structure will be the same. BACT Attachment 4 is the Eichleay estimate of structural steel required for VOC-2, annotated to show required subtotal. Based on this approach, structural steel cost for the industry-typical" case is as follows:

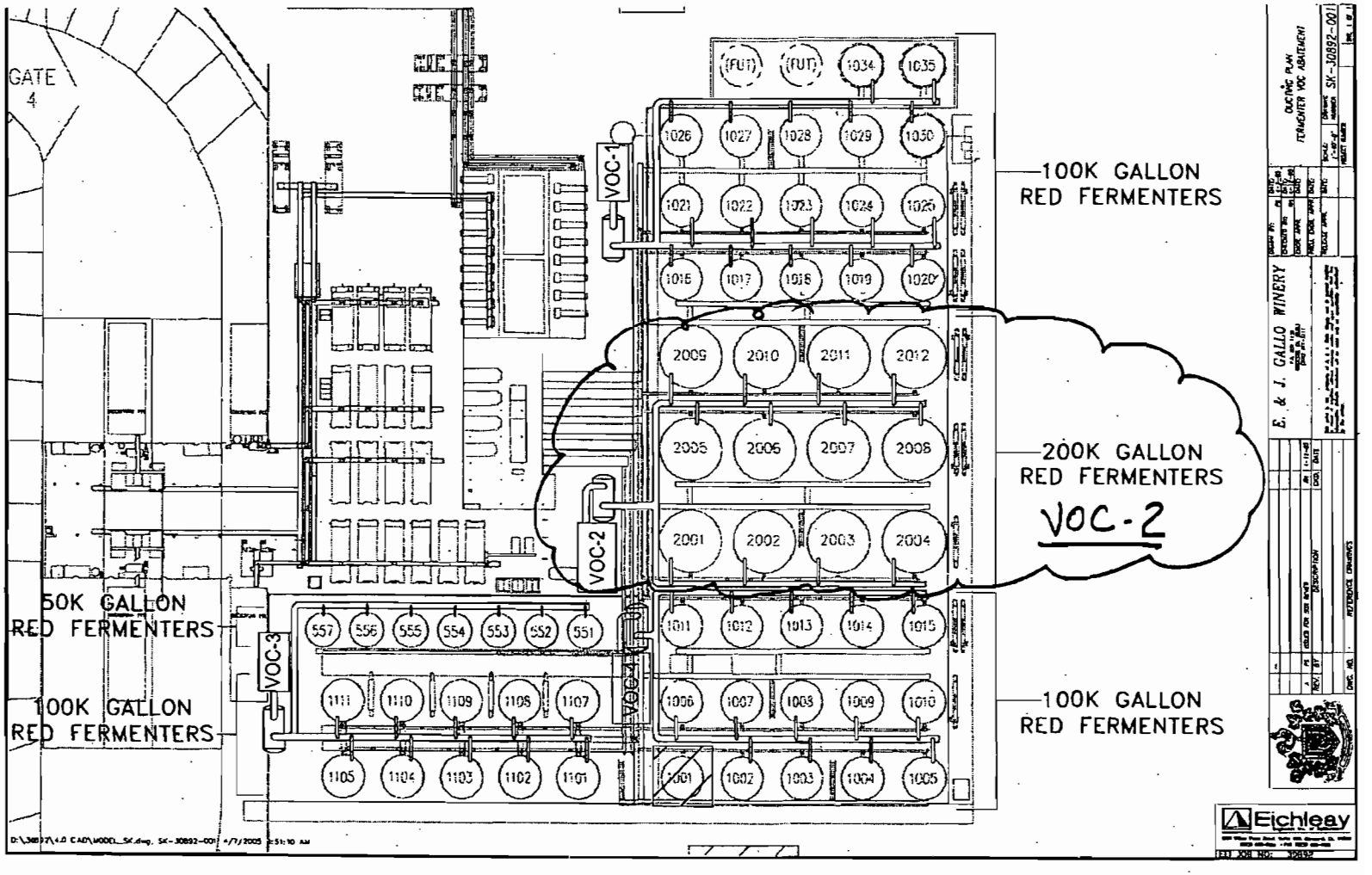
  Purchased Structural Steel : $287,630
  Labor for Erection of Structural Steel: $45,273

Foundations

- Cost for foundations for the structural steel towers can be assumed to be the same for the "industry-typical" system as for VOC-2 since the heights and sizes of structure are assumed to be the same. BACT Attachment 5 is the Eichleay estimate of the foundations required for VOC-2, annotated to show required subtotal. Pricing is based on a subcontract price including labor and materials. Based on this approach, 32 drilled concrete piers are required at a subcontract cost of $1,000 each.

BACT Attachment 2

Plot Plan for Gallo-Livingston (Eichleay Study)


GATE 4
VOC-1
VOC-2
VOC-3
VOC-4
100K GALLON RED FERMENTERS
200K GALLON RED FERMENTERS
VOC-2
50K GALLON RED FERMENTERS
100K GALLON RED FERMENTERS
E. & J. GALLO WINERY
FERMENTER VOC ABATEMENT
SK-30892-001
Eichleay

BACT Attachment 3

Ducting Costs for VOC-2 (Eichleay Study)

Eichleay Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 **Date:** 6/24/05

CODE	ITEM DESCRIPTION	QUANT.	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
1	Bolt up	100	ea	6.5	650	65.00			422.50	42,250			42,250
1	Handle	96	ea	7.2	691.2	65.00			468.00	44,928			44,928
1	Install	20	lot	3	60	65.00			195.00	3,900			3,900
	VOC-2												
2	12" Duct	75	ft				62.00		62.00		4,650		4,650
2	12" Duct misc. fittings	1	lot				1,000.00		1,000.00		1,000		1,000
2	Bolt up	21	ea	1.5	31.5	65.00			97.50	2,048			2,048
2	Handle	19	ea	2.08	39.52	65.00			135.20	2,569			2,569
2	Install	4	lot	2	8	65.00			130.00	520			520
2	18" Duct	65	ft				86.00		86.00		5,590		5,590
2	18" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
2	Bolt up	19	ea	3	57	65.00			195.00	3,705			3,705
2	Handle	17	ea	3.52	59.84	65.00			228.80	3,890			3,890
2	Install	3	lot	2	6	65.00			130.00	390			390
2	22" Duct	50	ft				99.00		99.00		4,950		4,950
2	22" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
2	Bolt up	15	ea	4	60	65.00			260.00	3,900			3,900
2	Handle	13	ea	4.6	59.8	65.00			299.00	3,887			3,887
2	Install	3	lot	3	9	65.00			195.00	585			585
2	24" Duct	35	ft				106.00		106.00		3,710		3,710
2	24" Duct misc. fittings	1	lot				3,000.00		3,000.00		3,000		3,000
2	Bolt up	11	ea	4	44	65.00			260.00	2,860			2,860
2	Handle	9	ea	4.6	41.4	65.00			299.00	2,691			2,691
2	Install	2	lot	3	6	65.00			195.00	390			390
2	28" Duct	15	ft				119.00		119.00		1,785		1,785
2	28" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
2	Bolt up	5	ea	5.5	27.5	65.00			357.50	1,788			1,788
2	Handle	4	ea	5.32	21.28	65.00			345.80	1,383			1,383

Labor & mat'l cost for 15' of 12" duct
5,650

5,137

Total Ducting > 12" dia = 870'

Eichleay Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 **Date:** 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
2	Install To previous page	1	lot	3	3	65.00			195.00	195			195
2	30" Duct	25	ft				128.00		128.00		3,200		3,200
2	30" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
2	Bolt up	8	ea	5.5	44	65.00			357.50	2,860			2,860
2	Handle	6	ea	5.32	31.92	65.00			345.80	2,075			2,075
2	Install	1	lot	3	3	65.00			195.00	195			195
2	32" Duct	265	ft				177.00		177.00		46,905		46,905
2	32" Duct misc. fittings	1	lot				4,500.00		4,500.00		4,500		4,500
2	Bolt up	68	ea	6	408	65.00			390.00	26,520			26,520
2	Handle	66	ea	6	396	65.00			390.00	25,740			25,740
2	Install	13	lot	3	39	65.00			195.00	2,535			2,535
2	42" Duct	415	ft				242.00		242.00		100,430		100,430
2	42" Duct misc. fittings	1	lot				25,000.00		25,000.00		25,000		25,000
2	Bolt up	115	ea	6.5	747.5	65.00			422.50	48,588			48,588
2	Handle	104	ea	7.12	740.48	65.00			462.80	48,131			48,131
2	Install	21	lot	4	84	65.00			260.00	5,460			5,460
	VOC-3												
3	6" Duct	25	ft				38.00		38.00		950		950
3	6" Duct misc. fittings	1	lot				500.00		500.00		500		500
3	Bolt up	7	ea	1	7	65.00			65.00	455			455
3	Handle	6	ea	1.4	8.4	65.00			91.00	546			546
3	Install	1	lot	1.5	1.5	65.00			97.50	98			98
3	10" Duct	35	ft				54.00		54.00		1,890		1,890
3	10" Duct misc. fittings	1	lot				1,000.00		1,000.00		1,000		1,000
3	Bolt up	11	ea	1.5	16.5	65.00			97.50	1,073			1,073
3	Handle	9	ea	1.72	15.48	65.00			111.80	1,006			1,006
3	Install	2	lot	2	4	65.00			130.00	260			260
3	12" Duct	70	ft				62.00		62.00		4,340		4,340

BACT Attachment 4

Structural Steel Costs for VOC-2 (Eichleay Study)

Eichleay Engineers Inc. of CA

PRELIMINARY ESTIMATE

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	VOC-2 Duct Section						Structural			Steel			
2	15 x 15 towers	4	ea	20	80	65.00	20,000.00		21,300.00	5,200	80,000		85,200
2	20' top level connection beams	6	ea	2	12	65.00	700.00		830.00	780	4,200		4,980
2	cross bracing on top open sections	3	ea	2	6	65.00	400.00		530.00	390	1,200		1,590
2	15 x 15 towers	3	ea	20	60	65.00	20,000.00		21,300.00	3,900	60,000		63,900
2	15' top level connection beams	4	ea	2	8	65.00	550.00		680.00	520	2,200		2,720
2	cross bracing on top open sections	2	ea	2	4	65.00	300.00		430.00	260	600		860
2	15 x 20 towers - shared vertical colums	2	ea	20	40	65.00	20,000.00		21,300.00	2,600	40,000		42,600
2	15 x 15 tower	1	ea	20	20	65.00	10,000.00		11,300.00	1,300	10,000		11,300
2	3' wide grating on walkway 3, 4' wide on walkway 4	945	sf	0.15	141.75	65.00	19.00		28.75	9,214	17,955		27,169
2	3' wide grating to tanks	360	sf	0.15	54	65.00	19.00		28.75	3,510	6,840		10,350
2	handrails	820	lf	0.3	246	65.00	75.00		94.50	15,990	61,500		77,490
2	grating to existing catwalks	165	sf	0.15	24.75	65.00	19.00		28.75	1,609	3,135		4,744
										45,273	287,630		
	VOC-3 Duct Section												
3	20 x 8 towers	3	ea	20	60	65.00	15,000.00		16,300.00	3,900	45,000		48,900
3	20' top level connection beams	6	ea	2	12	65.00	700.00		830.00	780	4,200		4,980
3	cross bracing on top open sections	3	ea	2	6	65.00	400.00		530.00	390	1,200		1,590
3	15 x 8 towers	1	ea	20	20	65.00	14,000.00		15,300.00	1,300	14,000		15,300
3	15 x 15 towers	5	ea	20	100	65.00	18,000.00		19,300.00	6,500	90,000		96,500
3	15' top level connection beams	8	ea	2	16	65.00	550.00		680.00	1,040	4,400		5,440
3	cross bracing on top open sections	4	ea	2	8	65.00	300.00		430.00	520	1,200		1,720
3	3' wide grating on walkway 6 & 7	810	sf	0.15	121.5	65.00	19.00		28.75	7,898	15,390		23,288
3	3' wide grating to tanks	510	sf	0.15	76.5	65.00	19.00		28.75	4,973	9,690		14,663
3	handrails	920	lf	0.3	276	65.00	75.00		94.50	17,940	69,000		86,940
3	grating to existing catwalks	60	sf	0.15	9	65.00	19.00		28.75	585	1,140		1,725

BACT Attachment 5

Foundation Costs for VOC-2 (Eichleay Study)

Eichler Engineers Inc. of CA

Client Name: Wine Institute
Job Number: 30913
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

PRELIMINARY ESTIMATE

Estimated By: P.H.M.
Checked By: R.H.
Rev. 2 **Date:** 6/24/05

O:\30913\5.0 Design Documents\Estimates\Rev. 2\Livin

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS $ / Hr	UNIT COSTS MAT'L	UNIT COSTS SUBCON.	UNIT COSTS TOTAL	TOTAL COSTS LABOR	TOTAL COSTS MAT'L	TOTAL COSTS SUBCON.	TOTAL
	030.- Concrete												
	VOC -1 Duct sections												
1	Install drilled piers (20) rack #1	20	ea					1,000.00	1,000.00			20,000	20,000
1	Install drilled piers (20) rack #2	20	ea					1,000.00	1,000.00			20,000	20,000
1	Install drilled piers (42) for main rack inside plant	42	ea					1,500.00	1,500.00			63,000	63,000
1	Install drilled piers (46) for main rack outside plant	46	ea					700.00	700.00			32,200	32,200
1	Install drilled piers (32) for main rack by VOC's	32	ea					700.00	700.00			22,400	22,400
1	Install foundation for VOC-1 & tank	110	cy					450.00	450.00			49,500	49,500
	VOC -2 Duct sections												
2	Install drilled piers (16) rack #3	16	ea					1,000.00	1,000.00			16,000	16,000
2	Install drilled piers (16) rack #4	16	ea					1,000.00	1,000.00			16,000	16,000
2	Install foundation for VOC-1 & tank	110	cy					450.00	450.00			49,500	49,500
	VOC -3 Duct sections												
3	Install drilled piers (16) rack #6	16	ea					1,000.00	1,000.00			16,000	16,000
3	Install drilled piers (20) rack #7	20	ea					1,000.00	1,000.00			20,000	20,000
3	Install foundation for VOC-1 & tank	110	cy					450.00	450.00			49,500	49,500
	VOC -4 Duct sections												
4	Install drilled piers (0) rack #4		ea					1,000.00	1,000.00				
4	Install drilled piers (20) rack #5	20	ea					1,000.00	1,000.00			20,000	20,000
4	Install foundation for VOC-1 & tank	110	cy					450.00	450.00			49,500	49,500
	Allowance for building pad	3	cy					450.00	450.00			1,350	1,350
	TOTAL - Concrete											444,950	444,950

drilled piers

Appendix C

Compliance Certification

1/23/2013

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-1130012**.

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,

Lon Nebiolini, General Manager
Franzia - Ripon

Appendix D

Certificate of Conformity

San Joaquin Valley
Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

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

COMPANY NAME: The Wine Group, LLC dba Franzia Winery	FACILITY ID: N-956
1. Type of Organization:[X] Corporation [ ] Sole Ownership [ ] Government [ ] Partnership [ ] Utility	
2. Owner's Name: The Wine Group, LLC dba Franzia Winery	
3. Agent to the Owner: Lon Nebiolini	

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

(1A) Based on information and belief formed after reasonable inquiry, the source identified in this application will continue to comply with the applicable federal requirement(s).

(1B) Based on information and belief formed after reasonable inquiry, the source identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.

(1C) Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.

(1D) Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

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

Lon Nebiolini
Signature of Responsible Official

1/8/2013
Date

Lon Nebiolini
Name of Responsible Official (please print)

GENERAL MANAGER - Ripon Winery
Title of Responsible Official (please print)

Appendix E

Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-956-319-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-1 WITH PRESSURE/VACUUM VALVE AND INSULATION

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

DRAFT

DAVID WARNER, Director of Permit Services
N-956-319-0 : Jan 22 2013 6:02PM -- TOMS : 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] Federally Enforceable Through Title V Permit

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

10. 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]

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

12. 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

13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month average basis, shall not exceed 581,212 lb. [District Rule 2201] Federally Enforceable Through Title V Permit

14. 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

15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit

16. The annual VOC wine storage emission factor for each wine or spirits 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 = -0.38194E-4, b = 0.97917E-2 and c = 0. [District Rule 2201] Federally Enforceable Through Title V Permit

17. Records of the 12-month rolling average total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

18. 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

19. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201, and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-956-320-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-2 WITH PRESSURE/VACUUM VALVE AND INSULATION

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

DRAFT

DAVID WARNER, Director of Permit Services
N-956-320-0 . Jan 22 2013 6:02PM – TOMS · 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] Federally Enforceable Through Title V Permit

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

10. 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]

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

12. 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

13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month average basis, shall not exceed 581,212 lb. [District Rule 2201] Federally Enforceable Through Title V Permit

14. 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

15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit

16. The annual VOC wine storage emission factor for each wine or spirits 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 = -0.38194E-4, b = 0.97917E-2 and c = 0. [District Rule 2201] Federally Enforceable Through Title V Permit

17. Records of the 12-month rolling average total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

18. 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

19. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201, and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-956-321-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-3 WITH PRESSURE/VACUUM VALVE AND INSULATION

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

DRAFT

DAVID WARNER, Director of Permit Services
N-956-321-0 : Jan 22 2013 6:02PM -- TOMS : 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] Federally Enforceable Through Title V Permit

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

10. 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]

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

12. 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

13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month average basis, shall not exceed 581,212 lb. [District Rule 2201] Federally Enforceable Through Title V Permit

14. 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

15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit

16. The annual VOC wine storage emission factor for each wine or spirits 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 = -0.38194E-4, b = 0.97917E-2 and c = 0. [District Rule 2201] Federally Enforceable Through Title V Permit

17. Records of the 12-month rolling average total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

18. 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

19. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201, and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-956-322-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-4 WITH PRESSURE/VACUUM VALVE AND INSULATION

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-956-322-0 : Jan 22 2013 6:02PM -- TOMS : 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] Federally Enforceable Through Title V Permit

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

10. 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]

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

12. 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

13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month average basis, shall not exceed 581,212 lb. [District Rule 2201] Federally Enforceable Through Title V Permit

14. 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

15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit

16. The annual VOC wine storage emission factor for each wine or spirits 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 = -0.38194E-4, b = 0.97917E-2 and c = 0. [District Rule 2201] Federally Enforceable Through Title V Permit

17. Records of the 12-month rolling average total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

18. 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

19. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201, and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-956-323-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-5 WITH PRESSURE/VACUUM VALVE AND INSULATION

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-956-323-0 Jan 22 2013 6:02PM – TOMS : 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] Federally Enforceable Through Title V Permit

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

10. 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]

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

12. 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

13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month average basis, shall not exceed 581,212 lb. [District Rule 2201] Federally Enforceable Through Title V Permit

14. 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

15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit

16. The annual VOC wine storage emission factor for each wine or spirits 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 = -0.38194E-4, b = 0.97917E-2 and c = 0. [District Rule 2201] Federally Enforceable Through Title V Permit

17. Records of the 12-month rolling average total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

18. 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

19. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201, and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-956-324-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-6 WITH PRESSURE/VACUUM VALVE AND INSULATION

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

DRAFT

DAVID WARNER, Director of Permit Services
N-956-324-0 : Jan 22 2013 6:02PM – TOMS : 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] Federally Enforceable Through Title V Permit

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

10. 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]

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

12. 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

13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month average basis, shall not exceed 581,212 lb. [District Rule 2201] Federally Enforceable Through Title V Permit

14. 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

15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit

16. The annual VOC wine storage emission factor for each wine or spirits 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 = -0.38194E-4, b = 0.97917E-2 and c = 0. [District Rule 2201] Federally Enforceable Through Title V Permit

17. Records of the 12-month rolling average total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

18. 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

19. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201, and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-956-325-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-7 WITH PRESSURE/VACUUM VALVE AND INSULATION

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-956-325-0 : Jan 22 2013 6:02PM – TOMS 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] Federally Enforceable Through Title V Permit

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

10. 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]

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

12. 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

13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month average basis, shall not exceed 581,212 lb. [District Rule 2201] Federally Enforceable Through Title V Permit

14. 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

15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit

16. The annual VOC wine storage emission factor for each wine or spirits 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 = -0.38194E-4, b = 0.97917E-2 and c = 0. [District Rule 2201] Federally Enforceable Through Title V Permit

17. Records of the 12-month rolling average total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

18. 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

19. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201, and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-956-326-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-8 WITH PRESSURE/VACUUM VALVE AND INSULATION

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-956-326-0 Jan 22 2013 6:02PM -- TOMS 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] Federally Enforceable Through Title V Permit

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

10. 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]

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

12. 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

13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month average basis, shall not exceed 581,212 lb. [District Rule 2201] Federally Enforceable Through Title V Permit

14. 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

15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit

16. The annual VOC wine storage emission factor for each wine or spirits 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 = -0.38194E-4, b = 0.97917E-2 and c = 0. [District Rule 2201] Federally Enforceable Through Title V Permit

17. Records of the 12-month rolling average total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

18. 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

19. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201, and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-956-327-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-9 WITH PRESSURE/VACUUM VALVE AND INSULATION

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-956-327-0 : Jan 22 2013 8:02PM -- TOMS . 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] Federally Enforceable Through Title V Permit

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

10. 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]

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

12. 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

13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month average basis, shall not exceed 581,212 lb. [District Rule 2201] Federally Enforceable Through Title V Permit

14. 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

15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit

16. The annual VOC wine storage emission factor for each wine or spirits 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 = -0.38194E-4, b = 0.97917E-2 and c = 0. [District Rule 2201] Federally Enforceable Through Title V Permit

17. Records of the 12-month rolling average total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

18. 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

19. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201, and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-956-328-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-10 WITH PRESSURE/VACUUM VALVE AND INSULATION

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-956-328-0 : Jan 22 2013 6:02PM -- TOMS : 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] Federally Enforceable Through Title V Permit

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

10. 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]

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

12. 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

13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month average basis, shall not exceed 581,212 lb. [District Rule 2201] Federally Enforceable Through Title V Permit

14. 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

15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit

16. The annual VOC wine storage emission factor for each wine or spirits 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 = -0.38194E-4, b = 0.97917E-2 and c = 0. [District Rule 2201] Federally Enforceable Through Title V Permit

17. Records of the 12-month rolling average total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

18. 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

19. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201, and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-956-329-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-11 WITH PRESSURE/VACUUM VALVE AND INSULATION

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-956-329-0 : Jan 22 2013 6:03PM – TOMS . 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] Federally Enforceable Through Title V Permit

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

10. 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]

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

12. 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

13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month average basis, shall not exceed 581,212 lb. [District Rule 2201] Federally Enforceable Through Title V Permit

14. 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

15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit

16. The annual VOC wine storage emission factor for each wine or spirits 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 = -0.38194E-4, b = 0.97917E-2 and c = 0. [District Rule 2201] Federally Enforceable Through Title V Permit

17. Records of the 12-month rolling average total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

18. 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

19. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201, and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-956-330-0

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-12 WITH PRESSURE/VACUUM VALVE AND INSULATION

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

DRAFT

DAVID WARNER, Director of Permit Services
N-956-330-0 : Jan 22 2013 6:03PM – TOMS : 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] Federally Enforceable Through Title V Permit

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

10. 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]

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

12. 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

13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month average basis, shall not exceed 581,212 lb. [District Rule 2201] Federally Enforceable Through Title V Permit

14. 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

15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit

16. The annual VOC wine storage emission factor for each wine or spirits 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 = -0.38194E-4, b = 0.97917E-2 and c = 0. [District Rule 2201] Federally Enforceable Through Title V Permit

17. Records of the 12-month rolling average total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

18. 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

19. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201, and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

DRAFT

PERMIT NO: N-956-331-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-13 WITH PRESSURE/VACUUM VALVE AND INSULATION

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

DRAFT

DAVID WARNER, Director of Permit Services
N-956-331-0 : Jan 22 2013 6:03PM – TOMS : 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] Federally Enforceable Through Title V Permit

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

10. 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]

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

12. 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

13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month average basis, shall not exceed 581,212 lb. [District Rule 2201] Federally Enforceable Through Title V Permit

14. 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

15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit

16. The annual VOC wine storage emission factor for each wine or spirits 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 = -0.38194E-4, b = 0.97917E-2 and c = 0. [District Rule 2201] Federally Enforceable Through Title V Permit

17. Records of the 12-month rolling average total fermentation and total storage emissions, including calculation methods and parameters used, shall be maintained and updated monthly. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit

18. 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

19. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201, and 4694] Federally Enforceable Through Title V Permit

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: N-956-332-0 **ISSUANCE DATE:** DRAFT

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.
MAILING ADDRESS: ATTN: A/P 2827
P O BOX 90
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120
RIPON, CA 95366

EQUIPMENT DESCRIPTION:
350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK #2013-14 WITH PRESSURE/VACUUM VALVE AND INSULATION

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-956-332-0 : Jan 22 2013 6:03PM -- TOMS : 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] 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 Rules 2201 and 4694] Federally Enforceable Through Title V Permit

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

10. 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]

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12. 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

13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility, calculated on a rolling 12-month average basis, shall not exceed 581,212 lb. [District Rule 2201] Federally Enforceable Through Title V Permit

14. 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

15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

19. 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