



San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT



MAY 08 2013

Mr. Davindra Singh
CBUS Ops Inc. (DBA Woodbridge Winery)
P.O. Box 1260
Woodbridge, CA 95258

Re: Proposed ATC / Certificate of Conformity (Significant Mod)
District Facility # N-2321
Project # N-1130204

Dear Mr. Singh:

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. This project is to install four 60,000 gallon (each) stainless steel wine fermentation and 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. Rupl Gill, Permit Services Manager, at (209) 557-6400.

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

Seyed Sadredin
Executive Director/Air Pollution Control Officer

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Bakersfield, CA 93308-9725
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Newspaper notice for publication in Stockton Record and for posting on valleyair.org

**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 CBUS Ops Inc. (DBA Woodbridge Winery) at 5950 East Woodbridge Road, Acampo, California. This project is to install four 60,000 gallon (each) stainless steel wine fermentation and storage tanks.

The District's analysis of the legal and factual basis for this proposed action, project #N-1130204, 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 (209) 557-6400. Written comments on the proposed initial permit must be submitted by June 10, 2013 to **DAVID WARNER, DIRECTOR OF PERMIT SERVICES, SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, 4800 ENTERPRISE WAY, MODESTO, CA 95356.**

San Joaquin Valley Air Pollution Control District Authority to Construct

Install 4 new fermentation/storage wine tanks

Facility Name: CBUS Ops Inc. (DBA Woodbridge Winery) Date: March 16, 2013
Mailing Address: P.O. Box 1260 Engineer: Wai-Man So
Woodbridge, CA 95258 Lead Engineer: Nick Peirce
Contact Person: Davindra Singh (Project Engineer)
Telephone: (209) 365 – 8048
Fax: (559) 661 – 3429
Email: davindra.singh@cbrands.com
Application #(s): N-2321-793-0 through -796-0
Project #: N-1130204
Deemed Complete: March 14, 2013

I. PROPOSAL

CBUS Ops Inc. (DBA Woodbridge Winery) hereinafter referred to as CBUS is requesting Authorities to Construct (ATC) to install four insulated 60,000 gallon (each) stainless steel wine tanks. These new tanks will be used for fermentation and storage of red and white wine.

CBUS has a facility-wide specific limiting condition (SLC) of 1,167,178 pounds of VOC per year for wine fermentation and storage operations. The applicant is not proposing any changes to this limit with the addition of these four tanks.

CBUS possesses a Title V permit. The proposed project is a Significant Modification to the Title V permit, as this project triggers a Federal Major Modification under Rule 2201. The applicant has requested to issue the ATCs with a Certificate of Conformity (COC), which is EPA's 45-day review of the project prior to the issuance of the final ATCs. This project will be published in the local newspaper, Stockton Record, for public review and comment. The public comment period will last 30-days from the date of publication. Both COC and public notice will run concurrently.

II. APPLICABLE RULES

District Rule 2201 New and Modified Stationary Source Review (04/21/11)
District Rule 2410 Prevention of Significant Deterioration (11/26/12)
District Rule 2520 Federally Mandated Operating Permits (06/21/01)
District Rule 4001 New Source Performance Standards (04/14/99)
District Rule 4002 National Emissions Standards for Hazardous Air Pollutants (05/02/04)
District Rule 4101 Visible Emissions (02/17/05)

District Rule 4102 Public Nuisance (12/17/92)
District Rule 4694 Wine Fermentation and Storage Tanks (12/15/05)
CH & SC 41700 Public Nuisance
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 5950 East Woodbridge Road in Acampo, California. The District has verified that this facility is not located within 1,000 feet of the outer boundary of any K-12 school. Therefore, the school noticing requirements of California Health and Safety Code, Section 42301.6 do not apply.

IV. PROCESS DESCRIPTION

CBUS 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 (CO₂) 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 no more than 20 percent by volume. Batch fermentation requires 5 days per batch for red wine and 1-2 weeks per batch for white wine. VOCs are emitted during the fermentation process along with the CO₂. The VOCs consist primarily of ethanol along with small quantities of other fermentation byproducts.

Following the completion of fermentation, white wine is transferred directly to storage tanks. Red wine is first directed to the presses for separation of solids and then routed to the storage tanks. All tanks in the winery typically operate as two separate emissions units:

(1) a fermentation operation during which the tank is vented directly to the atmosphere to release the evolved CO₂ byproduct from the fermentation reaction; and (2) a storage operation during which the tank is closed to minimize contact with air and refrigerated to preserve the wine. Post-fermentation operations such as cold stabilization, racking, and filtration are conducted in the tanks, resulting in a number of inter-tank transfers during the period between the end of fermentation and bottling or bulk shipment. Storage operations are conducted year-round. VOC emissions occur primarily as a result of the inter-tank transfers which are necessitated by the post fermentation operations.

V. EQUIPMENT LISTING

Pre-Project Equipment Description:

This facility currently has 734 red and white wine fermentation and storage tanks with a total capacity of 55,193,318 gallons¹.

Post-Project Equipment Description:

The draft ATCs includes the post-project equipment description with detail tank identification number.

Permit Unit	Equipment Description
N-2321-793-0 through -796-0 (4 tanks)	60,000 GALLON STAINLESS STEEL ENCLOSED TOP, RED AND WHITE WINE FERMENTATION AND WINE STORAGE TANK (1669 thru 1672) WITH PRESSURE/VACUUM RELIEF VALVE AND INSULATION

With the installation of 4 new tanks, the facility will have total of 738 red and white wine fermentation and storage tanks with a total capacity of 55,433,318 gallons (55,193,318 + 240,000).

VI. EMISSION CONTROL TECHNOLOGY EVALUATION

VOCs (ethanol) are emitted from the 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.

VOCs (ethanol) are emitted from the wine fermentation process. The proposed temperature-controlled tanks limit the emissions by requiring the maximum average

¹ This value was taken from engineering evaluation N-1092377.

fermentation temperature to 95°F, which is the achieved in practice control technologically for this type of operation.

VII. EMISSIONS CALCULATIONS

A. Assumptions

- VOC is the only pollutant concern associated to this project.
- The wine processed in the proposed tanks contains a maximum of 20% alcohol by volume.
- A daily storage tank throughput will not exceed 4 times the maximum nominal tank capacity for each tank (per applicant).
- An annual storage tank throughput will not exceed 920 times the maximum nominal tank capacity for each tank (per applicant).
- There will be a maximum of 24 fermentation cycles per year for each tank (per applicant).
- The fermentation tanks are subject to the fermentation tank emissions reduction measures of District Rule 4694. The actual production in each proposed 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.
- Other assumptions will be stated as they are made.

B. Emission Factors (EF)

Pre-Project Emission Factor (EF1)

N-2321-793-0 through -796-0

These tanks are new emissions units. Therefore, EF1 is equal to zero for each unit.

Post-Project Emission Factor (EF2)

N-2321-793-0 through -796-0

Fermentation Tank:

Emission factors are taken from District FYI-114, *VOC Emission Factors for Wine Fermentation and Storage Tanks (6/13/12)*, as follows:

Wine Type	EF2 (lb-VOC/1,000 gallon of wine)		Source
	Daily	Annual	
White	1.62	2.5	FYI-114
Red	3.46	6.2	FYI-114

In addition, per District Policy, fermentation tanks which are subject to the fermentation emission reduction requirements of Rule 4694 are considered to be controlled sources subject to 35% reduction in emissions. The uncontrolled annual emission factor for fermentation tanks is 2.5 lb-VOC/1,000 gallons for white wine and 6.2 lb-VOC/1,000 gallons for red wine respectively per Section 3.16 of Rule 4694.

For tanks controlled per Rule 4694, the annual emissions factors are thus determined to be:

$$\begin{array}{lcl}
 \text{EF}_{\text{White}} & = & 2.5 \text{ lb-VOC/1,000 gal} \times (1 - 0.35) = 1.6 \text{ lb-VOC/1,000 gallons} \\
 \text{EF}_{\text{Red}} & = & 6.2 \text{ lb-VOC/1,000 gal} \times (1 - 0.35) = 4.0 \text{ lb-VOC/1,000 gallons}
 \end{array}$$

Storage Tank:

Emission factors are taken from District FYI-114, *VOC Emission Factors for Wine Fermentation and Storage Tanks (6/13/12)*, for facility located in the Northern Region with ethanol concentration of 20% volume, as follows:

Wine Type	EF2 (lb-VOC/1,000 gallon of wine)		Source
	Daily	Annual	
White/Red	0.303	0.175	FYI-114, Table 1

C. Potential to Emit (PE)

1. Daily and Annual PE

Pre-Project Potential Emissions (PE1)

N-2321-793-0 through -796-0

These tanks are new emissions units. Therefore, PE1 is equal to zero for each unit.

Post-Project Potential Emissions (PE2)

N-2321-793-0 through -796-0

Fermentation Tank:

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

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

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

Permit Unit	Daily EF	Annual EF	Tank Capacity	Turnover rate	Turnover rate	Daily	Annual
	(lb-VOC/1,000 gal)		(gallon)	(tank/day)	(tank/yr)	(lb/day)	(lb/yr)
N-2321-793-0	3.46	4.0	60,000	1	24	207.6	5,760
N-2321-794-0			60,000			207.6	5,760
N-2321-795-0			60,000			207.6	5,760
N-2321-796-0			60,000			207.6	5,760

Storage Tank:

The potential daily and annual VOC emissions are determined as follows:

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

Permit Unit	Daily EF	Annual EF	Tank Capacity	Turnover rate	Turnover rate	Daily	Annual
	(lb-VOC/1,000 gal)		(gallon)	(tank/day)	(tank/yr)	(lb/day)	(lb/yr)
N-2321-793-0	0.303	0.175	60,000	4	920	72.7	9,660
N-2321-794-0			60,000			72.7	9,660
N-2321-795-0			60,000			72.7	9,660
N-2321-796-0			60,000			72.7	9,660

These four 60,000 gallon tanks will be used for both fermentation and storage of red and/or white wine. Therefore,

The daily PE of each tank is equal to the greater of the daily $PE_{Fermentation}$ or the daily $PE_{Storage}$.

As shown above, the daily $PE_{Fermentation}$ and daily $PE_{Storage}$ for each tank are calculated to 207.6 lb-VOC/day and 72.7 lb-VOC/day respectively. Therefore,

Daily PE for each tank = **207.6 lb-VOC/day**

As shown above, the annual $PE_{Fermentation}$ and annual $PE_{Storage}$ for each tank are calculated to 5,760 lb-VOC/year and 9,660 lb-VOC/year respectively. Therefore,

Annual PE for each tank = $[5,760 + 9,660]$ lb-VOC/year = **15,420 lb-VOC/year**

However, the facility currently has a SLC of 1,167,178 lb-VOC/year for wine fermentation and storage operations and the applicant is not proposing any changes to this limit.

2. Quarterly Emission Changes (Δ PE)

The Quarterly Emissions Changes (QEC) is calculated for each pollutant, for each unit, as the difference between the quarterly PE2 and the quarterly baseline emissions (BE). The annual emissions are evenly distributed throughout each quarter using the following equation:

$$\text{QEC (lb/quarter)} = [\text{Annual PE2} - \text{Annual PE1}] (\text{lb/year}) / 4 (\text{quarter/year})$$

No changes to the SLC of VOC for wine fermentation and storage operations are proposed. Therefore, QEC is equal to zero for each quarter for each permit unit.

3. Adjusted increase in Permitted Emissions (AIPE)

AIPE is used to determine if Best Available Control Technology (BACT) is required for emission units that are being modified.

These tanks are new emissions units. Therefore, AIPE calculations are not required.

D. Facility Emissions

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

Pursuant to District Rule 2201, § 4.9, 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 involves only VOC emissions, and the current VOC emissions from this facility are already above the Offset and Major Source Thresholds for VOC emissions. Therefore, SSPE1 calculations are not necessary.

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

Pursuant to District Rule 2201, § 4.10, 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 involves only VOC emissions, and the VOC emissions of this facility are already above the Offset and Major Source Thresholds for VOC emissions. Therefore, SSPE2 calculations are not necessary.

3. Stationary Source Increase in Permitted Emissions (SSIPE)

SSIPE calculations are used to determine if the project triggers public notice pursuant to District Rule 2201, § 5.4.5. If SSIPE results greater than 20,000 lb/yr for any one pollutant then project requires public notification. At this time, it is District Practice to define the SSIPE as the difference of SSPE2 to SSPE1.

This project involves only VOC emissions, and there is no change to the SLC of VOC for wine fermentation and storage operations as a result of this project. Therefore, SSIPE_{VOC} is equal to zero.

4. Major Source Determination

Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, Section 3.24, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purpose 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 this facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

SSPE1 values are taken from engineering evaluations N-1074105 and N-1120998.

Permit Number	Pollutant (lb/year)				
	NO _x	SO _x	PM ₁₀	CO	VOC
SSPE1	2,377	272	1,069	5,849	1,183,089
SSPE2	2,377	272	1,069	5,849	1,183,089
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Existing Major Source?	No	No	No	No	Yes

As seen in the table above, the facility is an existing Major Source for VOC 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:

As indicated above, the SSPE VOC emission before the proposal project is calculated to 1,183,089 pounds of VOC per year, equivalent to 591.5 tons of VOC per year.

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

PSD Major Source Determination (tons/year)	
	VOC
Facility PE before Project Increase	591.5
PSD Major Source Thresholds	250
PSD Major Source?	Yes

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.

5. Baseline Emissions (BE)

The BE calculation (in lb/year) is performed on a pollutant-by-pollutant basis to determine the amount of offsets required, where necessary, when the SSPE1 is greater than the offset threshold. Pursuant to section 3.8, baseline emissions shall be equal to the sum of:

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 3.23.

Since these are new emissions units, the baseline emissions are equal zero.

6. SB 288 Major Modification

SB 288 Major Modification calculation is to determine the following:

- a. Pursuant to District Rule 2201, section 4.1.3, if Best Available Control Technology (BACT) is triggered for a new or modified emission unit that results in a Major Modification; and
- b. Pursuant to District Rule 2201, section 5.4.1, if a public notification is triggered.

As shown in Section VII.D.4 of this document, this facility is an existing Major Source for VOC emissions. In order to determine whether a SB 288 Major Modification can be triggered, the Net Emissions Increase (NEI) is calculated and is compared with the SB 288 Major Modification threshold of 50,000 lb-VOC/year listed on Table 3-5 of Rule 2201, Section 3.36.

Tanks operating in a winery are not truly independent emissions units. Therefore, the potential annual emissions must be established with consideration of all the other associated tanks in the facility. The potential to emit from the new tanks (PE2_{New}) is therefore determined as the difference between the post project and the pre project

potential emissions from the wine production operation based on the collective physical capacity of the wine tanks at the facility. Thus,

$$NEI = \sum(PE2 - HE)$$

Since this project involves only new emissions units, and no change to the existing emission units. The historical emissions for these units are each equal to zero.

$$NEI = \sum(PE2 - HE)_{New}$$

Where:

$$HE_{New} = 0$$

$$NEI = \sum(PE2)_{New}$$

Based on the collective physical capacity of the wine tanks in this facility, $PE2_{New}$ is calculated to 3,456 pounds VOC per year. See detail potential emissions calculations in Appendix II of this document. Thus,

$$NEI = \sum(PE2)_{New} = 3,456 \text{ lb-VOC/yr}$$

SB 288 Major Modification Thresholds and Determination			
Pollutant	NEI (lb/year)	Thresholds (lb/year)	SB 288 Major Modification?
VOC	3,456	50,000	No

As indicated in above table, this project does not constitute an SB 288 Major Modification.

7. Federal Major Modification

Federal Major Modification is to determine the following:

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

This facility is an existing Major Source for VOC emissions. In order to determine whether a Federal Major Modification can be triggered, the Net Emissions Increase (NEI) is calculated and is compared with the significant threshold limit of 0 lb-VOC/year listed on Table 3-1 of Rule 2201, Section 3.18.1.4.

NEI can be calculated as the sum of the difference of the project actual emissions (PAE) and baseline actual emissions (BAE) for the emissions units involved in this project. Thus,

$$NEI = \sum(PAE - BAE)$$

Since this project involves only new emissions units, and no change to the existing emissions units. The baseline actual emissions for the new units are each equal to zero. Thus,

$$NEI = \sum(PAE - BAE)_{New}$$

Where:

$$BAE_{New} = 0$$

$$NEI = \sum(PAE)_{New}$$

As discussed above, emissions from the new tanks is calculated to 3,456 pounds VOC per year. Thus, NEI = 3,456 lb-VOC/yr.

Federal Major Modification Thresholds and Determination			
Pollutant	NEI (lb/year)	Thresholds (lb/year)	Federal Major Modification?
VOC	3,456	0	Yes

As indicated in the above table, this project constitutes a Federal Major Modification.

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

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

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

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

PSD Major Source Thresholds (tons/year)							
	NO2	VOC	SO2	CO	PM	PM10	CO2e
PSD Major Source Thresholds	250	250	250	250	250	250	100,000

As determined in Section VII.D.4 of this document, this facility is an existing PSD Major Source, so the proposed project will subject to PSD if the project results in a PSD significant increase.

The project is not located within 10 km of a Class 1 area; therefore, modeling of the emission increase is not required to determine if the project is subject to the requirements of Rule 2410.

The proposed project results in an increase of VOC and CO2 emissions due to wine fermentation and storage processes. VOC is a precursor for ozone, which is a non-attainment pollutant in the District; therefore, this project's VOC emissions are not subject to Rule 2410.

However, this project's CO2 emissions are subject to Rule 2410. The increase of CO2 emissions is determined as follows:

$$\text{CO}_2 \text{ (lb/year)} = \text{EF (lb-CO}_2\text{/1,000 gal-wine)} \times \text{annual fermentation throughput (gal/year)}$$

$$\text{EF} = 6,303 \times \text{VF}_{\text{EtOH}}^2$$

Where, VF_{EtOH} is the volume fraction of Ethanol in the wine (gal-ethanol/gal-wine)

As discussed in Section VII.C of this document, the ethanol content is equal to 20%, and the annual fermentation throughput for the addition of four tanks under this project is 5,760,000 gallons (4 x 60,000 x 24). Therefore,

$$\begin{aligned} \text{CO}_2 \text{ (lb/year)} &= 6,303 \times 0.20 \text{ (lb-CO}_2\text{/1,000 gal-wine)} \times 5,760,000 \text{ (gal-wine/year)} \\ &= 7,261,056 \text{ lb-CO}_2\text{/year} \\ &= 3,630.5 \text{ ton-CO}_2\text{/year} \end{aligned}$$

40 CFR 52.21(b)(23)(i) specifies PSD significant emission increase thresholds for regulated NSR pollutants, and 40 CFR 52.21(b)49(iii) specifies PSD significant emission increase threshold for GHGs pollutant. The PSD Significant Emission Increase thresholds are summarized in the following table.

PSD Significant Emission Increase Thresholds (tons/year)						
	NO2	SO2	CO	PM	PM10	CO2e
PSD Significant Emission Increase Thresholds	40	40	100	25	15	75,000

As demonstrated above, because the project has a total potential to emit from all new 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.

² Per <http://www.sbcapcd.org/eng/winery/WineryCO2Calcs.pdf>

VIII. COMPLIANCE

District Rule 2201 New and Modified Stationary Source Review Rule

1. Best Available Control Technology (BACT)

Pursuant to District Rule 2201, § 4.1.1, BACT requirements are triggered in a pollutant-by-pollutant basis for new emissions unit with a Potential to Emit (PE) exceeding 2.0 lb/day, unless the unit is otherwise exempt per section 4.2. Section 4.2.1 provides an exemption from BACT requirements for CO emissions if the facility is located in a CO attainment area and the SSPE_{2CO} is less than 200,000 lb/yr. As well, BACT may be triggered if the modification is an SB 288 Major Modification or Federal Major Modification per section 4.1.3.

N-2321-793-0 through -796-0

As shown in Section VII.C.1 of this document, PE of VOC emission from each fermentation tank exceeds 2.0 lb/day. In addition, as shown in Section VII.D.7, this project constitutes a Federal Major Modification. Therefore, BACT is triggered and required for each tank associated with this project.

Wine Storage Tanks:

BACT Guideline 5.4.13 lists VOC emissions control requirements for Wine Storage Tanks. The requirement is listed in the following table:

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible
VOC	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	<ol style="list-style-type: none"> 1. Capture of VOC and thermal or catalytic oxidation or equivalent (98% control) 2. Capture of VOC and carbon adsorption or equivalent (95% control) 3. Capture of VOC and absorption or equivalent (90% control) 4. Capture of VOC and condensation or equivalent (70% control)

The "Top-Down BACT Analysis" for VOC emissions is performed in Appendix III of this document.

Pursuant to the analysis, BACT for VOC emissions has been satisfied with the following: insulated or installed indoor, pressure vacuum valve set within 10% of the maximum allowable working pressure of the tank, "gas-tight" tank operation and continuous storage temperature not exceeding 75°F, achieved within 60 days of completion of fermentation.

The following conditions will be listed on each ATC to ensure compliance with the BACT requirements:

- *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 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]*
- *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]*

Wine Fermentation Tanks:

BACT Guideline 5.4.14 lists VOC emissions control requirements for Wine Fermentation Tanks. The requirement is listed in the following table:

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible
VOC	Temperature-Controlled Open Top Tank with Maximum Average Fermentation Temperature of 95 °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)

The "Top-Down BACT Analysis" for VOC emissions is performed in Appendix III of this document.

Pursuant to the analysis, BACT for VOC emissions has been satisfied with the following: Open tank vented to the atmosphere with the average fermentation temperature not exceeding 95 °F.

The following conditions will be listed on each ATC to ensure compliance with the BACT requirements:

- *The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95°F, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201]*
- *For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and the uncontrolled fermentation emissions and any fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rules 2201 and 4694]*

2. Offsets

Offsets are examined on a pollutant-by-pollutant basis, and are triggered for any pollutant with a SSPE2 equal to or greater than the values listed in § 4.5.3, table 4-1.

As discussed above, this facility is an existing Major Source for VOC emissions, and the SSPE2 of VOC exceeds the offsets threshold. Therefore, offset calculations are required, and pursuant to § 4.7.1, emission offset is calculated as the sum of differences between the PE2 and the BE of all the new and modified emissions units, plus all increases in Cargo Carrier emissions. The emissions offset are calculated as follow:

$$\text{Emission offset} = \Sigma (\text{PE2} - \text{BE}) \times \text{DOR} + \text{ICCE}$$

Where,
PE2 is post project potential to emit
BE is baseline emissions
DOR is the distance offset ratio determined under Rule 2201, § 4.8
ICCE is Increase in Cargo Carrier emissions

There are no increases in Cargo Carrier emissions as result of this project, and the proposed new emissions units are located in the same stationary source, which result DOR = 1.0. Then,

$$\text{Emission offset} = \Sigma (\text{PE2} - \text{BE}) \times 1.0 + 0$$

$$\text{Emission offset} = \Sigma (\text{PE2} - \text{BE})$$

According to engineering evaluation N-1120998, all existing tanks were considered Clean Emission Units since they meet the achieved-in-practice BACT requirements for wine storage and fermentation process. Thus, BE is set equal to PE1 for each existing tank. Thus,

$$\text{Emission offset} = \Sigma (\text{PE2} - \text{PE1})$$

The facility has an existing SLC of 1,167,178 pounds of VOC per year for wine fermentation and storage operations, and the applicant is not proposing any change to this limit as a result of this project. Therefore,

$$\begin{aligned} \text{Emission offset} &= (1,167,178 - 1,167,178) \text{ lb-VOC/year} \\ &= 0 \text{ lb-VOC/year} \end{aligned}$$

As indicated above, offsets are not required for this project.

3. Public Notification

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

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

The proposed project triggers Federal Major Modification under Rule 2201 and it involves new emission units with $\text{PE}_{\text{VOC}} > 100$ lb/day. Therefore, a 30-day public notice is required for this project.

4. Daily Emission Limits (DELs)

Daily Emissions Limitations (DELs) and other enforceable conditions are required by § 3.15 to restrict a unit's maximum daily emissions. Therefore, the following conditions will be listed on each permit:

- *The daily VOC emissions rate for wine fermentation shall not exceed 3.46 lb/1,000 gallons. [District Rule 2201]*
- *The ethanol content of wine stored in this tank shall not exceed 20 percent by volume. [District Rule 2201]*
- *When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed four times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201]*

5. Compliance Assurance

Source Testing

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

Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

Record Keeping

Recordkeeping is required to demonstrate compliance with the offsets, public notification, and daily emission limit requirements of Rule 2201. In addition, recordkeeping is also required for winery tanks per Rule 4694. Therefore, the following conditions will be listed on each permit:

- *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 Rule 4694, 6.4.1]*
- *Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 2201]*
- *{4659} The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rule 2201]*
- *{4660} If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201]*
- *{4661} Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 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 Rule 2201 and 4694]*

Reporting

No reporting is required to demonstrate compliance with Rule 2201.

6. Ambient Air Quality Analysis

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

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

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

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

Per section 4.15.1, Alternative Siting Analysis:

The current project occurs at an existing winery with a pre-project total wine tank volume of 55,193,318 gallons. The applicant proposes to install new winery tanks totaling 240,000 gallons in volume, which represents an increase of 0.43% of the existing total wine tank volume. 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.

Per section 4.15.2, Compliance Certification:

A source undergoing a Major Modification to demonstrate to the satisfaction of the District that all other Major Sources owned by such person and operating in California are in compliance or are on a schedule for compliance with all applicable emission limitations and standards.

This project constitutes a Federal Major Modification. Therefore, compliance certification is required, and a copy of compliance certification from the facility is included in Appendix IV of this document.

Therefore, compliance with the requirements of this Rule is expected.

District Rule 2410 Prevention of Significant Deterioration

The provisions of this rule shall apply to any source and the owner or operator of any source subject to any requirements under Title 40 Code of Federal Regulations (40 CFR) Part 52.21 as incorporated into this rule.

As demonstrated in Section VII.D.8 of this document, the proposed project is not subject to the requirements of Rule 2410; therefore no further discussion is required.

District Rule 2520 Federally Mandated Operating Permits

CBUS possesses a Title V permit. The proposed project is considered a Significant Modification to the Title V, and the applicant requested the ATCs be issued with Certificates of Conformity. Therefore, the following conditions will be listed on each permit:

- *{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 NSR Rule]*
- *{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]*

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

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

Section 5.3.4 of this rule requires the permittee shall file an application for administrative permit amendments prior to implementing the requested change except when allowed by the operational flexibility provisions of section 6.4 of this rule.

CBUS is expected to notify the District by filing TV Form-008 upon implementing the ATCs. Therefore, compliance with the requirements of this Rule is expected.

District 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 manufacturing operations.

District 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 manufacturing operations.

District Rule 4101 Visible Emissions

District Rule 4101, Section 5.0, indicates that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour, which is dark or darker than Ringlemann 1 or equivalent to 20% opacity. Therefore, the following conditions will be listed on each permit:

- *{15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]*

Compliance with the requirements of this Rule is expected.

District Rule 4102 Nuisance

Section 4.0 prohibits discharge of air contaminants, which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations provided the equipment is well maintained. Therefore, the following conditions will be listed on each permit:

- *{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 1905-1 (March 2, 2001) - 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 an HAP as defined by Section 44321 of the California Health and Safety Code. Therefore, a health risk assessment is not necessary and no further risk analysis is required.

Compliance with the requirements of this Rule is expected.

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 per year.

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 facility-wide permit N-2321-0-2, condition 42 enforces on-going compliance with this section.

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

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

Therefore, the following conditions will be listed on the permit for each storage tank with capacity greater than 5,000 gallons and not constructed of concrete or wood to ensure compliance with the requirements of this section:

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

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

The following conditions will be listed on the permit for each storage tank with capacity greater than 5,000 gallons and not constructed of concrete or wood to ensure compliance with the requirements of this section:

- *The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. 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.

The facility-wide permit N-2321-0-2, conditions 43 through 45 enforce on-going compliance with these sections.

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

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

Section 6.4.1 requires that records be kept for each fermentation batch. The following condition will be listed on each permit to ensure compliance with this section:

- *For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, uncontrolled*

fermentation emissions, and fermentation emissions 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]

Section 6.4.2 requires that weekly records be kept of wine volume and temperature in each storage tank. Therefore, the following conditions will be listed on the ATCs to ensure compliance with this section:

- *When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rule 4694]*
- *When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694]*

Section 6.4.3 requires that all monitoring be performed for any Certified Emission Reductions as identified in the facility's Three-Year Compliance Plan and that the records of all monitoring be maintained.

The facility-wide permit N-2321-0-2, condition 46 enforces on-going compliance with this section.

Compliance with the requirements of this Rule is expected.

California Health & Safety Code 42301.6 (School Notice)

As discussed in Section III of this document, the California Health and Safety Code 42301.6 requirement does not apply to this project.

California Environmental Quality Act (CEQA)

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

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and

- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas (GHG) Significance Determination

It is determined that no other agency has or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project. District FYI-260, *Greenhouse Gas Emissions from Wine Fermentation Processes*, establishes that for the purpose of calculating potential increases in greenhouse gas (GHG) emissions, CO₂ emissions from wine fermentation processes are considered carbon neutral. Therefore, the District concludes that the project would have a less than cumulatively significant impact on global climate change.

District CEQA Findings

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

IX. RECOMMENDATION

Compliance with all applicable rules and regulations is expected. Pending a successful NSR Public Noticing period, issue Authorities to Construct N-2321-793-0 through N-2321-796-0 subject to the permit conditions listed on the attached draft Authorities to Construct in Appendix I.

X. BILLING INFORMATION

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
N-2321-793-0 through N-2321-796-0 (total 4 tanks)	3020-05-D (50,000 or Greater but less than 100,000 gallon)	60,000 gallon	\$ 185 (each)

APPENDICES

- Appendix I: Draft Authorities to Construct (ATC)*
- Appendix II: Potential Emissions Calculations*
- Appendix III: BACT Guidelines & Top-Down BACT Analyses*
- Appendix IV: Compliance Certification*

Appendix I

Draft Authorities to Construct (ATC)

N-2321-793-0 through N-2321-796-0

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT
DRAFT

PERMIT NO: N-2321-793-0

LEGAL OWNER OR OPERATOR: CBUS OPS INC (DBA WOODBRIDGE WINERY)
MAILING ADDRESS: P O BOX 1260
WOODBRIDGE, CA 95258-1260

LOCATION: 5950 E WOODBRIDGE ROAD
ACAMPO, CA 95220

EQUIPMENT DESCRIPTION:

60,000 GALLON STAINLESS STEEL ENCLOSED TOP, RED AND WHITE WINE FERMENTATION AND WINE STORAGE TANK 1669 WITH PRESSURE/VACUUM RELIEF 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. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. The daily VOC emissions rate for fermentation shall not exceed 3.46 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
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, 5.2.1] 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.

Sayed Sadredin, Executive Director APCO

DAVID WARNER - Director of Permit Services

N-2321-793-0 Mar 16 2013 6:58PM - 60W Joint Inspection NOT Required

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, 5.2.1] 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, 5.2.2] Federally Enforceable Through Title V Permit
9. The ethanol content of wine stored in this tank shall not exceed 20 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
10. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed four times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rule 4694, 6.4.1]
12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694, 6.4.2] Federally Enforceable Through Title V Permit
13. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
14. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 1,167,178 lb/year, calculated on a twelve (12) month rolling basis. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (4.0 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (1.6 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor, calculated using the equation(s) specified within this permit, 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, calculated using the equation(s) specified within this permit, based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: $EF = a * P^2 + b * P + c$; where EF is the VOC emission factor in pounds of VOC per 1,000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume % (when the ethanol content of wine is 20 volume %, P is equivalent to 0.20), $a = -0.38194$, $b = 0.97917$ and $c = 0$. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

19. {4659} The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rule 2201] Federally Enforceable Through Title V Permit
20. {4660} If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit
21. {4661} Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit
22. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-2321-794-0

LEGAL OWNER OR OPERATOR: CBUS OPS INC (DBA WOODBRIDGE WINERY)
MAILING ADDRESS: P O BOX 1260
WOODBRIDGE, CA 95258-1260

LOCATION: 5950 E WOODBRIDGE ROAD
ACAMPO, CA 95220

EQUIPMENT DESCRIPTION:

60,000 GALLON STAINLESS STEEL ENCLOSED TOP, RED AND WHITE WINE FERMENTATION AND WINE STORAGE TANK 1670 WITH PRESSURE/VACUUM RELIEF 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. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. The daily VOC emissions rate for fermentation shall not exceed 3.46 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
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, 5.2.1] 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-2321-794-0 Mar 16 2010 6:56PM - SDW : Joint Inspection NOT Required

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, 5.2.1] 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, 5.2.2] Federally Enforceable Through Title V Permit
9. The ethanol content of wine stored in this tank shall not exceed 20 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
10. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed four times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rule 4694, 6.4.1]
12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694, 6.4.2] Federally Enforceable Through Title V Permit
13. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
14. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 1,167,178 lb/year, calculated on a twelve (12) month rolling basis. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (4.0 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (1.6 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor, calculated using the equation(s) specified within this permit, 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, calculated using the equation(s) specified within this permit, based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: $EF = a * P^2 + b * P + c$; where EF is the VOC emission factor in pounds of VOC per 1,000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume % (when the ethanol content of wine is 20 volume %, P is equivalent to 0.20), $a = -0.38194$, $b = 0.97917$ and $c = 0$. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit

DRAFT

CONDITIONS CONTINUE ON NEXT PAGE

19. {4659} The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rule 2201] Federally Enforceable Through Title V Permit
20. {4660} If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit
21. {4661} Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit
22. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-2321-795-0

LEGAL OWNER OR OPERATOR: CBUS OPS INC (DBA WOODBRIDGE WINERY)
MAILING ADDRESS: P O BOX 1260
WOODBRIDGE, CA 95258-1260

LOCATION: 5950 E WOODBRIDGE ROAD
ACAMPO, CA 95220

EQUIPMENT DESCRIPTION:

60,000 GALLON STAINLESS STEEL ENCLOSED TOP, RED AND WHITE WINE FERMENTATION AND WINE STORAGE TANK 1671 WITH PRESSURE/VACUUM RELIEF 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. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
4. The daily VOC emissions rate for fermentation shall not exceed 3.46 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
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, 5.2.1] 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-2321-795-0; Mar 10 2010 0:57PM - SCW : Joint Inspection NOT Required

Northern Regional Office • 4800 Enterprise Way • Modesto, CA 95356-8718 • (209) 557-6400 • Fax (209) 557-6475

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, 5.2.1] 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, 5.2.2] Federally Enforceable Through Title V Permit
9. The ethanol content of wine stored in this tank shall not exceed 20 percent by volume. [District Rule 2201] Federally Enforceable Through Title V Permit
10. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed four times the maximum nominal tank capacity stated in the equipment description. [District Rule 2201] Federally Enforceable Through Title V Permit
11. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rule 4694, 6.4.1]
12. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694, 6.4.2] Federally Enforceable Through Title V Permit
13. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201] Federally Enforceable Through Title V Permit
14. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 1,167,178 lb/year, calculated on a twelve (12) month rolling basis. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (4.0 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (1.6 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
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17. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: $EF = a * P^2 + b * P + c$; where EF is the VOC emission factor in pounds of VOC per 1,000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume % (when the ethanol content of wine is 20 volume %, P is equivalent to 0.20), $a = -0.38194$, $b = 0.97917$ and $c = 0$. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

19. {4659} The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rule 2201] Federally Enforceable Through Title V Permit
20. {4660} If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit
21. {4661} Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit
22. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: N-2321-796-0

LEGAL OWNER OR OPERATOR: CBUS OPS INC (DBA WOODBRIDGE WINERY)
MAILING ADDRESS: P O BOX 1260
WOODBRIDGE, CA 95258-1260

LOCATION: 5950 E WOODBRIDGE ROAD
ACAMPO, CA 95220

EQUIPMENT DESCRIPTION:
60,000 GALLON STAINLESS STEEL ENCLOSED TOP, RED AND WHITE WINE FERMENTATION AND WINE STORAGE TANK 1672 WITH PRESSURE/VACUUM RELIEF 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
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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
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Seyed Sadredin, Executive Director, APCO

DAVID WARNER, Director of Permit Services

N-2321-796-0 - Mar 19 2013 6:57PM - SDW - Joint Inspection NOT Required

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, 5.2.1] 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, 5.2.2] Federally Enforceable Through Title V Permit
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14. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 1,167,178 lb/year, calculated on a twelve (12) month rolling basis. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (4.0 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (1.6 lb-VOC/1000 gallons). [District Rule 2201] Federally Enforceable Through Title V Permit
16. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor, calculated using the equation(s) specified within this permit, 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, calculated using the equation(s) specified within this permit, based on the ethanol content of each batch. [District Rule 2201] Federally Enforceable Through Title V Permit
17. The annual VOC wine storage emission factor for each wine ethanol content shall be calculated using the following equation: $EF = a * P^2 + b * P + c$; where EF is the VOC emission factor in pounds of VOC per 1,000 gallons of wine throughput; and P is the volume percent ethanol of the wine being transferred. For concentrations up to and including 24 volume % (when the ethanol content of wine is 20 volume %, P is equivalent to 0.20), $a = -0.38194$, $b = 0.97917$ and $c = 0$. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 2201] Federally Enforceable Through Title V Permit

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CONDITIONS CONTINUE ON NEXT PAGE

19. {4659} The permittee shall maintain the following records: red wine and white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury; the volume and the ethanol concentration of each wine movement; and the calculated 12 month rolling VOC emission rate (lb-VOC per 12 month rolling period, calculated monthly). [District Rule 2201] Federally Enforceable Through Title V Permit
20. {4660} If the emissions calculated for any rolling 12-month period exceed the annual emissions limitations of this permit, in a crush season in which the start of the crush season (defined as the day on which the facility's seasonal crushing/fermentation operations commence) occurs less than 365 days after the start of the previous crush season, then no violation of the annual emissions limit for that rolling 12-month period will be deemed to have occurred so long as the calendar year emissions are below the annual emissions limitation. [District Rule 2201] Federally Enforceable Through Title V Permit
21. {4661} Records shall be maintained that demonstrate the date of each year's start of crush season. [District Rule 2201] Federally Enforceable Through Title V Permit
22. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 2201 and 4694] Federally Enforceable Through Title V Permit

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Appendix II

Potential Emissions Calculations

Potential Emissions Calculations

The purpose of the following calculations is solely to determine the proposed project will trigger SB 288 Major Modification and/or Federal Major Modification. The facility has an existing SLC of 1,167,178 pounds of VOC per year for wine fermentation and storage operations. This SLC will not be changed with the addition of 4 new tanks under this project.

1. Potential to Emit (existing tanks)

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

White Wine Fermentation

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

Where,

- C = grape crushing capacity
= 13,200 tons/day (per engineering evaluation N-1092377)
- D_w = days in a white wine crush season
= 120 days
- M = amount of juice produced per ton of grapes crushed
= 200 gal/ton
- P = pressing capacity
= 8,400 tons/day (per engineering evaluation N-1092377)
- W_{FW} = white fermentation period
= 10 days
- R_{TW} = total winery retention time for white wine
= 40 + 10
= 50 days
- V_{FW} = total volume of white wine fermenters
= 55,193,318 gal (per Section V of this document)
- V_T = total winery cooperage
= 55,193,318 gal (per Section V of this document)

Using the above parameters,

- W1 = $(13,200 \times 120 \times 200)$ = 316.80 Mega Gallon (MG)/year
- W2 = $(8,400 \times 120 \times 200)$ = 201.60 MG/year
- W3 = $(55,193,318 \times 120) / 10$ = 662.32 MG/year
- W4 = $(55,193,318 \times 120) / 50$ = 132.46 MG/year

CBUS is requesting to install 4 new tanks. These tanks will result an increase facility's storage and fermentation capacities, and no changes to the facility's crushing and pressing capacities. Therefore, crushing capacity and pressing capacity (W1 and W2) are not considered from the analysis. Only the fermenter volume and overall tank processing (W3 and W4) are compared.

$$\begin{aligned}W_W &= W4 \text{ (lesser of } W3, W4) \\ &= 132.46 \text{ MG/year}\end{aligned}$$

The potential white wine fermentation emissions would be:

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

Where:

$$\begin{aligned}E_{\text{fw}} &= \text{white wine emission factor} \\ &= 1.6 \text{ lb-VOC/1,000 gal (per Section VII.B of this document)}\end{aligned}$$

$$\begin{aligned}PE1_{\text{white}} &= (1.6 \text{ lb-VOC/1,000 gal}) \times (132.46 \times 10^6 \text{ gal/yr}) \\ &= 211,936 \text{ lb-VOC/year}\end{aligned}$$

White Wine Storage Emissions:

Storage emissions are calculated as follows:

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

Where,

E_s = wine storage emission factor based on District FYI-114 (6/13/12). The existing tanks allow them to store up to 20% alcohol by volume. Thus, E_s is equal to 0.175 lb-VOC/1,000 gal.

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

W_w = 132.46 MG/year (determined above)

$$\begin{aligned}PE1_{\text{white}} &= (0.175 \text{ lb-VOC/1,000 gal}) \times (8) \times (132.46 \times 10^6 \text{ gal/year}) \\ &= 185,444 \text{ lb-VOC/year}\end{aligned}$$

Total PE for White Wine Production:

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

$$\begin{aligned}PE1_{\text{white}} &= PE1_{\text{white fermentation}} + PE1_{\text{white storage}} \\ &= 211,936 \text{ lb-VOC/year} + 185,444 \text{ lb-VOC/year} \\ &= 397,380 \text{ lb-VOC/year}\end{aligned}$$

Red Wine Fermentation Emissions:

$$\begin{aligned}W1 &= C \times D_r \times M \text{ (limited by crusher capacity)} \\W2 &= P \times D_r \times M \text{ (limited by pressing capacity)} \\W3 &= (V_{FR} \times F \times D_r) / R_{FR} \text{ (limited by red fermenter volume)} \\W4 &= (V_T \times D_r) / R_{TS} \text{ (limited by overall tank processing)}\end{aligned}$$

Where,

C	= grape crushing capacity	= 13,200 tons/day
D _r	= days in a red wine crush season	= 120 days
F	= Fill factor for red wine fermentation	= 80%
M	= amount of juice produced per ton of grapes crushed	= 200 gal/ton
P	= pressing capacity	= 8,400 tons/day
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	= 55,193,318 gal
V _T	= total winery cooperage	= 55,193,318 gal

Using the above parameters,

$$\begin{aligned}W1 &= (13,200 \times 120 \times 200) &= & 316.80 \text{ MG/year} \\W2 &= (8,400 \times 120 \times 200) &= & 201.60 \text{ MG/year} \\W3 &= (55,193,318 \times 0.8 \times 120) / 5 &= & 1,059.71 \text{ MG/year} \\W4 &= (55,193,318 \times 120) / 45 &= & 147.18 \text{ MG/year}\end{aligned}$$

CBUS is requesting to install 4 new tanks. These tanks will result an increase facility's storage and fermentation capacities, and no changes to the facility's crushing and pressing capacities. Therefore, crushing capacity and pressing capacity (W1 and W2) are not considered from the analysis. Only the fermenter volume and overall tank processing (W3 and W4) are compared.

$$\begin{aligned}W_R &= W4 \text{ (lesser of } W3, W4) \\ &= 147.18 \text{ MG/year}\end{aligned}$$

The potential red wine fermentation emissions would be:

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

Where,

$$E_{fr} = \text{red wine emission factor} \\ = 4.0 \text{ lb-VOC/1,000 gal (per Section VII.B of this document)}$$

$$PE1_{red} = (4.0 \text{ lb-VOC/1,000 gal}) \times (147.18 \times 10^6 \text{ gal/yr}) \\ = 588,720 \text{ lb-VOC/year}$$

Red Wine Storage Emissions:

Storage emissions are calculated as follows:

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

Where:

E_s = wine storage emission factor based on District FYI-114 (6/13/12). The existing tanks allow them to store up to 20% alcohol by volume. Thus, E_s is equal to 0.175 lb-VOC/1,000 gal.

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

W_R = 147.18 MG/year (determined above)

$$PE1_{red} = (0.175 \text{ lb-VOC/1,000 gal}) \times (8) \times (147.18 \times 10^6 \text{ gal/yr}) \\ = 206,052 \text{ lb-VOC/year}$$

Total PE for Red Wine Production:

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

$$PE1_{red} = PE1_{red \text{ fermentation}} + PE1_{red \text{ storage}} \\ = 588,720 \text{ lb-VOC/year} + 206,052 \text{ lb-VOC/year} \\ = 794,772 \text{ lb-VOC/year}$$

Summary:

The facility's emissions potential for fermentation and storage operations is then taken to be the greater of the white or red emissions potential determined above.

$$PE1 = \text{greater of } PE1_{white} \text{ or } PE1_{red} \\ = 794,772 \text{ lb-VOC/year}$$

2. Potential to Emit (existing plus new tanks)

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

White Wine Fermentation

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

Where,

$$\begin{aligned} C &= \text{grape crushing capacity} \\ &= 13,200 \text{ tons/day} \\ D_w &= \text{days in a white wine crush season} \\ &= 120 \text{ days} \\ M &= \text{amount of juice produced per ton of grapes crushed} \\ &= 200 \text{ gal/ton} \\ P &= \text{pressing capacity} \\ &= 8,400 \text{ tons/day} \\ W_{FW} &= \text{white fermentation period} \\ &= 10 \text{ days} \\ R_{TW} &= \text{total winery retention time for white wine} \\ &= 40 + 10 \\ &= 50 \text{ days} \\ V_{FW} &= \text{total volume of white wine fermenters} \\ &= 55,433,318 \text{ gal} \\ V_T &= \text{total winery cooperage} \\ &= 55,433,318 \text{ gal} \end{aligned}$$

Using the above parameters,

$$\begin{aligned} W1 &= (13,200 \times 120 \times 200) &= & 316.80 \text{ MG/year} \\ W2 &= (8,400 \times 120 \times 200) &= & 201.60 \text{ MG/year} \\ W3 &= (55,433,318 \times 120) / 10 &= & 665.20 \text{ MG/year} \\ W4 &= (55,433,318 \times 120) / 50 &= & 133.04 \text{ MG/year} \end{aligned}$$

CBUS is requesting to install 4 new tanks. These tanks will result an increase facility's storage and fermentation capacities, and no changes to the facility's crushing and pressing capacities. Therefore, crushing capacity and pressing capacity (W1 and W2) are not considered from the analysis. Only the fermenter volume and overall tank processing (W3 and W4) are compared.

$$\begin{aligned} W_w &= W4 \text{ (lesser of W3, W4)} \\ &= 133.04 \text{ MG/year} \end{aligned}$$

The potential white wine fermentation emissions would be:

$$PE2_{\text{white}} = E_{\text{fw}} \times W_{\text{w}}$$

Where:

$$\begin{aligned} E_{\text{fw}} &= \text{white wine emission factor} \\ &= 1.6 \text{ lb-VOC/1,000 gal (per Section VII.B of this document)} \end{aligned}$$

$$\begin{aligned} PE2_{\text{white}} &= (1.6 \text{ lb-VOC/1,000 gal}) \times (133.04 \times 10^6 \text{ gal/yr}) \\ &= 212,864 \text{ lb-VOC/year} \end{aligned}$$

White Wine Storage Emissions:

Storage emissions are calculated as follows:

$$PE2_{\text{white}} = E_{\text{s}} \times T \times W_{\text{w}}$$

Where,

E_{s} = wine storage emission factor based on District FYI-114 (6/13/12). The existing tanks allow them to store up to 20% alcohol by volume. Thus, E_{s} is equal to 0.175 lb-VOC/1,000 gal.

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

W_{w} = 133.04 MG/year (determined above)

$$\begin{aligned} PE2_{\text{white}} &= (0.175 \text{ lb-VOC/1,000 gal}) \times (8) \times (133.04 \times 10^6 \text{ gal/year}) \\ &= 186,256 \text{ lb-VOC/year} \end{aligned}$$

Total PE for White Wine Production:

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

$$\begin{aligned} PE2_{\text{white}} &= PE2_{\text{white fermentation}} + PE2_{\text{white storage}} \\ &= 212,864 \text{ lb-VOC/year} + 186,256 \text{ lb-VOC/year} \\ &= 399,120 \text{ lb-VOC/year} \end{aligned}$$

Red Wine Fermentation Emissions:

$$\begin{aligned}W1 &= C \times D_r \times M \text{ (limited by crusher capacity)} \\W2 &= P \times D_r \times M \text{ (limited by pressing capacity)} \\W3 &= (V_{FR} \times F \times D_r) / R_{FR} \text{ (limited by red fermenter volume)} \\W4 &= (V_T \times D_r) / R_{TS} \text{ (limited by overall tank processing)}\end{aligned}$$

Where,

$$\begin{aligned}C &= \text{grape crushing capacity} \\&= 13,200 \text{ tons/day} \\D_r &= \text{days in a red wine crush season} \\&= 120 \text{ days} \\F &= \text{Fill factor for red wine fermentation} \\&= 80\% \\M &= \text{amount of juice produced per ton of grapes crushed} \\&= 200 \text{ gal/ton} \\P &= \text{pressing capacity} \\&= 8,400 \text{ tons/day} \\R_{FR} &= \text{red fermentation period} \\&= 5 \text{ days} \\R_{TS} &= \text{total winery retention time for red wine,} \\&= 40 + 5 \\&= 45 \text{ days} \\V_{FR} &= \text{total volume of red wine fermenters} \\&= 55,433,318 \text{ gal} \\V_T &= \text{total winery cooperage} \\&= 55,433,318 \text{ gal}\end{aligned}$$

Using the above parameters,

$$\begin{aligned}W1 &= (13,200 \times 120 \times 200) &= & 316.80 \text{ MG/year} \\W2 &= (8,400 \times 120 \times 200) &= & 201.60 \text{ MG/year} \\W3 &= (55,433,318 \times 0.8 \times 120) / 5 &= & 1,064.32 \text{ MG/year} \\W4 &= (55,433,318 \times 120) / 45 &= & 147.82 \text{ MG/year}\end{aligned}$$

CBUS is requesting to install 4 new tanks. These tanks will result an increase facility's storage and fermentation capacities, and no changes to the facility's crushing and pressing capacities. Therefore, crushing capacity and pressing capacity (W1 and W2) are not considered from the analysis. Only the fermenter volume and overall tank processing (W3 and W4) are compared.

$$\begin{aligned}W_R &= W4 \text{ (lesser of } W3, W4) \\&= 147.82 \text{ MG/year}\end{aligned}$$

The potential red wine fermentation emissions would be:

$$PE2_{red} = E_{fr} \times W_R$$

Where,

$$E_{fr} = \text{red wine emission factor} \\ = 4.0 \text{ lb-VOC/1,000 gal (Per Section VII.B of this document)}$$

$$PE2_{red} = (4.0 \text{ lb-VOC/1,000 gal}) \times (147.82 \times 10^6 \text{ gal/yr}) \\ = 591,280 \text{ lb-VOC/year}$$

Red Wine Storage Emissions:

Storage emissions are calculated as follows:

$$PE2_{red} = E_s \times T \times W_R$$

Where:

E_s = wine storage emission factor based on District FYI-114 (6/13/12). The existing tanks allow them to store up to 20% alcohol by volume. Thus, E_s is equal to 0.175 lb-VOC/1,000 gal.

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

W_R = 147.82 MG/year (determined above)

$$PE2_{red} = (0.175 \text{ lb-VOC/1,000 gal}) \times (8) \times (147.82 \times 10^6 \text{ gal/yr}) \\ = 206,948 \text{ lb-VOC/year}$$

Total PE for Red Wine Production:

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

$$PE2_{red} = PE2_{red \text{ fermentation}} + PE2_{red \text{ storage}} \\ = 591,280 \text{ lb-VOC/year} + 206,948 \text{ lb-VOC/year} \\ = 798,228 \text{ lb-VOC/year}$$

Summary:

The facility's emissions potential for fermentation and storage operations is then taken to be the greater of the white or red emissions potential determined above.

$$PE2 = \text{greater of } PE2_{white} \text{ or } PE2_{red} \\ = 798,228 \text{ lb-VOC/year}$$

3. Potential to Emit (new tanks)

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

Potential Emissions Based on Physical Capacity of Wine Processing Equipment			
Category	Fermentation (lb-VOC/yr)	Storage (lb-VOC/yr)	Total (lb-VOC/yr)
Pre Project	588,720	206,052	794,772
Post Project	591,280	206,948	798,228
PE2 _N	2,560	896	3,456

Appendix III

BACT Guidelines & Top-Down BACT Analyses

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 of 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 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 VOCs from Wine Storage Operations

Step 1 - Identify All Possible Control Technologies

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

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

***Tanks made of 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.*

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	Option	Control	Overall Capture & Control Efficiency ³
1	2	Capture of VOCs and thermal or catalytic oxidation	98 %
2	3	Capture of VOCs and carbon adsorption	95 %
3	4	Capture of VOCs and absorption.	90 %
4	5	Capture of VOCs and condensation	70 %
5	1	Insulated tank, pressure/vacuum valve set within 10% of the maximum allowable working pressure of the tank, "gas tight" tank operation and 75°F tank temperature control as defined in District Rule 4694. (Achieved in Practice and Industry Standard)	0 %

³ Relative to "industry standard"

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 Delicato. 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) storage tanks each with a capacity of 200,000 gallons. Total annual throughput for the hypothetical tank battery is 39.6 million gallons per year based on an individual annual throughput of 3,300,000 gallons per year each (equivalent to almost 17 turns per year of each storage tank versus an estimated industry average of 6 turns per tank⁴). Total throughput subject to VOC control by a common VOC control device is thus 39.6 MMgal/year. Based on economies of scale, it is obvious that any control found to not be cost-effective at this level of throughput would be even less cost-effective at lower capacities (such as proposed for this project with a total annual throughput of 3.32 million gallons per year).

Industry Standard

During the development of District Rule 4694, it was determined that use of pressure/vacuum valves and some level of refrigeration on wine storage tanks is a standard operation for large wineries in the San Joaquin Valley. Additionally, essentially all storage tanks are insulated. This was directly confirmed with four large wineries: Mission Bell (Madera), Gallo-Livingston, Bronco, and Robert Mondavi. Based on this, the wine storage tank VOC control requirements of District Rule 4694 and tank insulation are also determined to be "industry standard".

The emission factor for "industry standard" operation is determined based on Table 1 of the District's FYI-114 (6/13/12), Estimating Emissions from Wine Storage Tanks, for an insulated storage tank located in Northern region with up to 20% ethanol content in the wine being stored:

E_f (industry standard) = 0.175 lb-VOC/1000 gal of wine throughput

Uncontrolled emissions for Twelve-Tank Battery

Uncontrolled Emissions = Gallons Throughput/year × 0.175 lb-VOC/1000 gallons
= (39.6 × 10⁶ gal/year) × (0.175 lb-VOC/1000 gal)
Uncontrolled Emissions = 6,930 lb/year

⁴ Per discussions with the Wine Institute (Bob Calvin of Constellation Wines) during Rule 4694 development (8/16/05)

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

a. Control Efficiency

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.

$$\begin{aligned}\text{Annual Emission Reduction} &= \text{Uncontrolled Emissions} \times 0.98 \\ &= 6,930 \text{ lb-VOC/year} \times 0.98 \\ &= 6,791 \text{ lb-VOC/year} \\ &= 3.40 \text{ tons-VOC/year}\end{aligned}$$

b. 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 200,000 gallon tanks to a common manifold system which ducts the combined vent to the common control device. The cost of dampers and isolation valving, installed in the ductwork, will not be included in the cost estimate.
- A minimum duct size is established at 6 inches diameter at each tank to ensure minimal backpressure of the tank during filling operations and to provide adequate strength for spanning between supports. The main header is 12" diameter to handle the potential for simultaneously venting all tanks based on a potential fill rate of 1000 gpm for each tank (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 piperack 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 in project C1090293).
- Costs for structural steel supports and foundations were extracted from the Eichleay Estimate for a similar system at Gallo-Livingston (See BACT Attachment 1 in project C1090293).
- Sales tax of 8% was applied to all materials.
- Indirect costs include Engineering, Construction Expense and Contractor's Fee and Contingency. Factors for these costs are taken from Peters & Timmerhaus⁶.
- Capital costs taken from the Eichleay estimate are 2005 dollars. These are escalated to 2013 based on 3% overall escalation per year.

Capital Investment (for ductwork and steel supports)

Fixed Capital Investment is summarized in the following table:

⁵ Eichleay 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.					\$1,000.00	\$32,000	\$32,000
Structural Steel Supports	1	lot	\$45,273	\$287,630	\$45,273	\$45,273			\$332,903
Direct Cost Subtotals				\$355,575		\$107,049		\$32,000	\$494,624
Sales Tax				\$28,446					\$28,446
Total Direct Cost				\$384,021		\$107,049		\$32,000	\$523,070
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 2013 @ 3%/year									\$221,662
Fixed Capital Investment (2013 Cost)									\$1,052,380

Annualized Capital Investment and Cost Effectiveness (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 = \$1,052,380 × 0.163 = \$171,538

Cost Effectiveness = Annualized Cost/Annual Emission Reductions

Cost Effectiveness = \$171,538/3.76 tons-VOC = \$50,452/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°F within 60 days of completion of fermentation. These BACT requirements will be placed on the ATC as enforceable conditions.

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 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 for Fermentation Operations

The following VOC emission control technologies are listed in BACT guideline 5.4.14, 1st quarter of 2013 for Wine Fermentation Tank:

Step 1 - Identify all control technologies

Achieved in Practice or contained in the SIP:

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

Technologically Feasible:

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

Alternate Basic Equipment:

There is no alternate basic equipment listed on this guideline.

Step 2 - Eliminate technologically infeasible options

None of the above listed technologies are technologically infeasible.

Step 3 - Rank remaining options by control effectiveness

Rank by Control Effectiveness			
Rank	Option	Control	Overall Capture & Control Efficiency
1	2	Capture of VOCs and thermal oxidation	88%
2	3	Capture of VOCs and carbon adsorption	86%
3	4	Capture of VOCs and absorption.	81%
4	5	Capture of VOCs and condensation	81%
5	1	Temperature-controlled open top tank with maximum average fermentation temperature of 95°F	0 %

Step 4 - Cost Effectiveness Analysis

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

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

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

As a conservative assumption, the District will use an inflation rate of 3% per year to the above evaluated cost values to estimate the 2013 cost effectiveness values as follow:

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

Where, i is the inflation rate of 3%
n is the number of year

$$\text{IM}_{2009-2013} = (1 + 0.03)^4 = 1.1255$$

In 2013, the effectiveness costs for each control device are calculated and summarized below:

$$\text{Effectiveness cost}_{2013} = \text{Effectiveness cost}_{2009} \times \text{IM}_{2009-2013}$$

Control Device	Thermal Oxidize	RTO	Refrigerated Cond.	Water Scrubber	Carbon Adsorption
Cost Effectiveness (\$/ton)	23,298	21,497	26,224	25,662	20,822

As shown above, the updated lowest evaluated value of \$20,822/ton exceeds the District's current cost effectiveness threshold of \$17,500/ton of VOC. Therefore, none of these technologies are cost-effective, and are not required at this time.

Step 5 - Select BACT

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

Appendix IV

Compliance Certification

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Permits Services
SJVAPCD

San Joaquin Valley
Unified Air Pollution Control District

TITLE V MODIFICATION - COMPLIANCE CERTIFICATION FORM

I. TYPE OF PERMIT ACTION (Check appropriate box)

- SIGNIFICANT PERMIT MODIFICATION
- MINOR PERMIT MODIFICATION
- ADMINISTRATIVE AMENDMENT

COMPANY NAME: CBUS OPS INC (dba WOODBRIDGE WINERY)	FACILITY ID: N - 2321
1. Type of Organization: <input checked="" type="checkbox"/> Corporation <input type="checkbox"/> Sole Ownership <input type="checkbox"/> Government <input type="checkbox"/> Partnership <input type="checkbox"/> Utility	
2. Owner's Name: CONSTELLATION BRANDS, INC	
3. Agent to the Owner: DAVINDRA SINGH	

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

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

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

Jim Crandell
Signature of Responsible Official

2/27/2013
Date

Jim CRANDELL
Name of Responsible Official (please print)

Facilities Director
Title of Responsible Official (please print)