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September 14, 2017

Via Federal Express and E-Mail

Ms. Sara Hunt
HuntS@sbcapcd.org
Clerk of the Hearing Board
Santa Barbara County Air Pollution Control District
260 North San Antonio Road, Suite A
Santa Barbara, California 93110

Re: Petition for Review
Central Coast Wine Services
Final Authority to Construct 15044
FID 11042; SSID 10834

Dear Ms. Hunt:

I am writing on behalf of Wine Institute to submit the enclosed Petition for Review and to request a public hearing pursuant to California Health and Safety Code Section 42302.1 and SBCAPCD Rules 501-519 regarding the above-referenced Authority to Construct (ATC) permit issued to Central Coast Wine Services (CCWS) on August 18, 2017.

At your request, ten copies of the petition and attachments are enclosed with this letter. A complete copy of the permit that is the subject of the petition is attached to the petition.

You advised by phone yesterday that service by Federal Express was acceptable in lieu of mail service. Therefore, copies have been served by Federal Express on the Air Pollution Control Officer and the permit holder, Central Coast Wine Services. Electronic copies have also been emailed to you, Ms. Genet, and the permit holder, for your convenience. A proof of service accompanies each copy of the petition.

A check in the amount of $686.00 is enclosed, payable to the Santa Barbara County Air Pollution Control District, in compliance with SBCAPCD Rules 210 and 502.

As Dave Metres of our office advised you by phone yesterday, to the extent that it may be waived by the parties, our client will waive the 30-day deadline in Health & Safety Code Section 42302.1 to conduct a hearing on the petition. If the District determines that the 30-day deadline may be waived, then we understand that the petition will be set for hearing on November 1,

2017, or on another mutually agreeable date. Please advise us if the hearing will be conducted on a date, time or place different from those set forth on the caption.

If you have any questions or need additional information, please contact me at the above address or by telephone at (415) 228-5460.

Very truly yours,

R. Morgan Gilhuly

RMG/cgd

cc: Air Pollution Control Officer Aeron Arlin Genet
Richard Mather, Central Coast Wine Services

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Attorneys for Petitioner
Wine Institute

BEFORE THE HEARING BOARD OF THE AIR POLLUTION CONTROL DISTRICT

COUNTY OF SANTA BARBARA

IN RE: PETITION OF WINE INSTITUTE FOR REVIEW OF ATC ISSUED TO CENTRAL COAST WINE SERVICES FINAL AUTHORITY TO CONSTRUCT 15044; FID 11042; SSID 10834.	H.B. Case No. _____ **PETITION FOR REVIEW** **Health & Safety Code Section 42302.1** Date: November 1, 2017 Time: 9:30 a.m. Place: Board of Supervisors Hearing Room 105 E. Anapamu Street, 4th Floor Santa Barbara, California

Executive Summary

Wine Institute submits this petition for review and requests a public hearing pursuant to California Health and Safety Code Section 42302.1 regarding the above-referenced Authority to Construct (ATC) permit issued to Central Coast Wine Services (CCWS) on August 18, 2017.

Under federal and state law, certain facilities must apply "Best Available Control Technology" (BACT) to reduce emissions of air pollutants. In order to be considered BACT, an emissions control system must meet certain requirements. One of those requirements is that the system has been "achieved in practice."

Wine Institute's petition is focused on a narrow issue—whether the emissions control requirements imposed on CCWS with respect to volatile organic chemical (VOC) emissions from wine fermentation tanks have been "achieved in practice" and therefore qualify as BACT. For the reasons set forth below, the NohBell and EcoPAS emissions control systems (the "Emissions Control Systems" or "ECS") required under the permit have not been "achieved in practice" and are therefore not BACT.

Wine Institute has no objection to the issuance of an ATC to CCWS, and has no objection to CCWS implementing the Emissions Control Systems voluntarily at its facility, to whatever extent it deems advisable, to comply with emissions limits imposed by the District. However, the ATC issued to CCWS must be revised to remove any reference to the Emissions Control Systems as being "achieved in practice" or BACT, because those statements are not supported by law or fact.

To be "achieved in practice," District policy requires that the Emissions Control Systems must have a "proven track record of reliability" over all operating ranges to which they will be applied. The Emissions Control Systems do not have this "proven track record of reliability" because they have not been used over a full wine fermentation cycle, as required by the ATC, or in all of the wine-fermentation applications covered by the permit.

District policy also requires that the permit specify a performance standard for the Emissions Control Systems. The District has not yet collected the data necessary to develop, nor developed, a legally-defensible performance standard for the Emissions Control Systems. Instead, the District has estimated an average performance standard based on the ECS manufacturers' representations, and proposes to adjust that standard during operation of the permit. This ad hoc process demonstrates that the ECS have never been applied as the District proposes to apply them in the permit, and are therefore not "achieved in practice."

Finally, the District has failed to apply source testing protocols to the Emissions Control Devices to determine BACT as required by District policy. The District argues that, instead of conducting source testing, it is appropriate to substitute a mass-balance calculation relying on

estimates of average emissions, but this argument, too, simply demonstrates that the ECS are not "achieved in practice." If they were "achieved in practice," the District would not need to rely on estimates, averages, or manufacturer representations.

In 2015 and 2016, the San Joaquin Valley APCD conducted a comprehensive review of all of the existing applications of the ECS in order to determine whether those systems were "achieved in practice." The San Joaquin Valley APCD found that "none" of the installations using the ECS, including those at CCWS, were "achieved in practice." District staff have discounted this study, but it remains the only state-wide study of the use of the ECS, and it demonstrates that the ECS have not been used or tested in a manner that would allow the District to conclude that they have been "achieved in practice."

Wine Institute submits this petition because the District's finding that the Emissions Control Systems are achieved-in-practice BACT is not supported and would likely cause harm to Wine Institute's members. If the District's finding is allowed to stand, this District, and other APCDs, may rely on that finding to impose requirements to use the ECS at other wineries, with potentially devastating economic and operational impacts on wineries across California. Wine Institute is the largest advocacy and public policy association for California wineries, and its members would be severely harmed by an improper "achieved in practice" finding.

This petition fulfills the requirements of Santa Barbara County Air Pollution Control District (District) Rule 503 regarding the contents of petitions for review. By submitting its comment letter dated June 20, 2017, Wine Institute fulfilled the requirements of District Rule 209 and California Health and Safety Code Section 42302.1 that it "appear[], submit[] written testimony, or otherwise participate[]" in the District's permitting process as a precondition to requesting a public hearing regarding CCWS's permit. Wine Institute has paid the filing fee required by District Rules 210 and 502. The following sections provide information required by District Rule 503.

A. Petitioner

Petitioner is Wine Institute, located at 425 Market Street, Suite 1000, San Francisco, California 94105, telephone number (415) 512-0151. Counsel for Wine Institute, R. Morgan Gilhuly, Barg Coffin Lewis & Trapp, LLP, 350 California Street, 22nd Floor, San Francisco, California 94104, telephone (415) 228-5400, is authorized to receive service of notices for Wine Institute, and Wine Institute requests that all notices served by the District be directed to counsel.

B. Petitioner's Corporate Status

Wine Institute is a non-profit corporation organized under the laws of the State of California. Wine Institute has the following officers, all located at 425 Market Street, Suite 1000, San Francisco, California 94105:

- Chief Executive Officer Robert P. Koch
- Secretary Maluri Fernandez
- Chief Financial Officer Steve Hayes

C. Activity Involved

The focus of Wine Institute's petition is the Final Authority to Construct Permit No. 15044 issued to CCWS for modifications to 400 series tanks, installation of a barrel room, and use of BACT at CCWS's winemaking facility located at 2717 Aviation Way, Suite 101, Santa Maria, California 93455.

D. Brief Description of Equipment

The ATC authorizes fermentation of red and white wines in previously installed 400 series tanks (Device IDs: 388059, 388060, 388061, and 388062) and installation of a new barrel room. To satisfy BACT requirements, the ATC requires the use of either NohBell's NoMoVo or EcoPAS LLC's EcoPAS wine emission capture and control systems.

E. Petition Filed under California Health and Safety Code 42302.1 and District Rule 206

This petition is filed pursuant to California Health and Safety Code 42302.1, which governs the filing of a petition and a request for a public hearing regarding the District's action to

approve the ATC. Wine Institute also seeks review of the conditional granting of the ATC to CCWS under District Rules 503 and 206.

F. Authorized Signature

R. Morgan Gilhuly, counsel for Petitioner, has executed this Petition on behalf of Wine Institute. Mr. Gilhuly has been duly authorized by Wine Institute to sign this Petition on its behalf.

G. Facts and Argument Supporting the Petition

1. Background.

CCWS is a custom-crush winery. Although one of the larger wine-making facilities within the District, CCWS is small by comparison with large wineries in California. The ATC covers emissions from approximately 148 storage and fermentation tanks with capacities in the range of 350 to 21,200 gallons, plus an oak barrel storage room. The Emissions Control Systems have been used on a non-continuous basis for portions of the fermentation process at CCWS since 2013. CCWS uses two NohBell NoMoVo systems and one EcoPAS system. The NoMoVo systems are portable and may be moved from tank to tank. The EcoPAS system is not portable but is manifolded to multiple tanks and may be connected or disconnected from any of those tanks by opening or closing manifold valves.

CCWS has used the ECS to maintain its daily emissions below its permitted daily emission limit of 54.99 pounds of VOCs. When daily uncontrolled emissions fell below that threshold, the ECS were not used. When daily emissions were likely to exceed that threshold, CCWS used the ECS on tanks of its choosing, sometimes using the systems for a day or two during a fermentation cycle, and sometimes using the ECS for longer periods.

Under its current permit and for the purposes of preparing its application for ATC 15044, CCWS estimates its emissions by using emission factors for wine fermentation and then subtracting the amount of ethanol captured by the ECS. However, CCWS has not recorded how much ethanol has been captured by the ECS from any single tank. Nor has CCWS reported to the District which tanks were connected to the ECS, on what dates, and under what circumstances.

CCWS's records reflect only the results of non-continuous use of the systems on a series of unspecified tanks at unspecified times across the entire facility.

The draft ATC stated that "CCWS proposed the use of the NoMoVo and EcoPAS emission capture and control systems as BACT for this project,"[1] but that statement is not accurate. As CCWS's permit application states, "The District ... has given instructions that CCWS should consider these technologies as BACT for this project."[2] Only with those instructions did CCWS propose a permit using the Emissions Control Systems as BACT.

2. The BACT Requirements.

Under State law, District Rule 802, and the District's Policy No. 6100.064.2017, BACT for any stationary source in a nonattainment area (which the District refers to as "NAR BACT") is determined using the most stringent of three alternative standards. In this case, the District has determined that the Emissions Control Systems are BACT under the Policy because they are:

> The most effective emission control device, emission limit, or technique which has been **achieved in practice** for the type of equipment comprising such stationary source; ....[3]

This particular definition of BACT does not incorporate any consideration of economic or technical feasibility because "[t]he fact that a particular control technology is 'achieved-in-practice' implies its inherent economic and technological feasibility."[4] It is thus of paramount importance that, before a finding of "achieved in practice" is made, the control technology has been implemented and used successfully under real-world conditions under all of the conditions to which it will be applied because, once determined to be "achieved in practice," NAR BACT will apply to all future facilities that use the same processes. There will be no further consideration of economic, energy, or environmental considerations.

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[1] *See* Exhibit A, Final Authority to Construct 15044 (August 18, 2017), Permit Evaluation for Authority to Construct 15044, sections 1.1 and 2.7, at p.2 and p.5.

[2] *See* Exhibit B, Central Coast Wine Services, Authority to Construct Application, Process Description (April 26, 2017) at 2.

[3] *See* Exhibit C, Policy No. 6100.064.2017, § 3.1 (emphasis added).

[4] *Id.* at § 5.0.

As the District's Policy recognizes, to be considered "achieved in practice," emissions controls must have "a proven 'track-record' of reliability."[5] They must also be "effective overall [sic] operating ranges."[6] "If BACT is required, then the permit must have a BACT permit condition. ... The condition should ... state that the specified BACT must be in place at all times of operation during the life of the project/permit."[7]

BACT emissions controls must be implemented through the specification of a "performance standard" and not "solely through the specification of the BACT control technology being employed."[8] The performance standard must be stated as a concentration, rate, removal efficiency or other applicable, enforceable, numerical standard.[9]

3. The Emissions Control Systems Have Not been "Achieved in Practice."

The permit requires "[a]ll fermentation tanks at [the CCWS] facility ... to be controlled by" the ECS "during wine fermentation."[10] Thus, the permit requires the use of the ECS throughout the fermentation process. The ECS, however, do not have a "proven track-record of reliability" because they have never been used over an entire fermentation cycle at CCWS. The ECS have not been used consistently over all operating ranges at CCWS, and their effectiveness has not been documented on even a single tank. In short, there is no track record. Instead, the permit relies on rolling averages and off-the-shelf estimates of emissions, not a track record anchored in real-world data from actual operations.

The way to prove such a track record would be straight-forward: (1) attach the ECS to closed fermentation tanks before fermentation begins, (2) measure all inputs and outputs from the closed systems (including waste products), (3) analyze the resulting data to develop a performance standard, (4) conduct repeated tests of the systems under all likely conditions of

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[5] *Id.* at § 5.1.

[6] *Id.* at § 8.1.

[7] *Id.* at § 8.8.

[8] *Id.* at § 8.1.

[9] *Id.*

[10] *See* Exhibit A, Authority to Construct 15044 at 1.

use—including with different types of grapes and styles of wine—in order to validate the performance standard, and (5) document the testing. The ATC contains no documentation indicating that these steps have ever been performed. As a result, the ECS have not been shown to be "effective over all operating ranges."

a. No Reliable Performance Standard

Neither CCWS nor the District has any basis for accurately establishing a performance standard for the ECS. As noted above, CCWS estimates its emissions by using emission factors for wine fermentation to estimate total emissions from its facility, and then subtracting the amount of ethanol captured by the ECS. Although this mass-balance approach is adequate for documenting compliance with permit conditions, it is not adequate to demonstrate the actual performance of the ECS. Uncontrolled emission rates from fermentation tanks may vary by factors of two or more, and therefore off-the-shelf emissions factors provide at best average emissions, and not actual emissions, from any specific tank.

But even if the District had reliable data on uncontrolled emissions, there is no data regarding which tanks were subject to emissions controls, how much ethanol was captured from them, or the time periods that any controls were in place—essential information for assessing whether emissions reductions were achieved and quantifying those reductions. Thus, there is no data from which a performance standard can be accurately determined for the ECS as applied to a tank over a complete fermentation cycle.

The District argues that the problem of establishing a performance standard can be solved by using a 30-day rolling average of emissions. The District also implies, as discussed below, that the performance standard can be revised as necessary during operations under the permit. But the District's proffered solution is simply an acknowledgement that the actual control efficiency of the ECS is unknown, and that the equipment has never before been used in the manner that the District proposes to require it to be used at CCWS.

b. The Purported "Proven Track Record of Reliability" Relies on Estimates and Averages, Not Real World Data from Actual Operations

The absence of actual performance information is especially significant for a facility such as CCWS, which provides winemaking services to multiple different vineyards and winemakers, producing wine from different varieties of grapes and in different styles. The emissions from these multiple types of wine have been shown to vary significantly. The District admits this variation, but contends that it is accounted for by "utilizing an averaging basis for the emission standard."[11] But the District has no data on which to base even an average performance standard for the ECS, which the District aptly describes as "first generation control system[s]." The systems have never been applied to an entire fermentation cycle, and have never been applied to red wine fermentation in the 400 series tanks at the CCWS facility.

CCWS's application for the draft ATC frankly acknowledges the lack of any data to support a BACT determination. Although the manufacturers of the ECS have guaranteed that they will meet a 67 percent performance standard over an entire fermentation cycle, the EcoPAS guarantee does not apply to the first quarter of a fermentation cycle—EcoPAS specifically disclaims that its system will be effective during that period—and only applies in a specified vapor flow range. As the application notes in the BACT Analysis Summary Form for the EcoPAS system, the "Performance Standard" is "To Be Determined":

> EcoPAS has provided CCWS with a performance guarantee of 67%. **However this control efficiency has not been validated**. Limitations of the capture system were not taken into consideration. **Only with proper validation can a real control efficiency be assigned to this combination of vapor capture and ethanol extraction from the vapor stream**....[12]

The application also notes that "This technology is not effective over all operating ranges" (and therefore fails to meet one of the key requirements of the District's policy) and that "BACT will

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[11] *See* Exhibit A, Authority to Construct 15044, Attachment M, District Responses to Wine Institute Comments on Draft Permit, Comment 2-8.

[12] *See* Exhibit B, Central Coast Wine Services, Authority to Construct Application, Attachment B, at 1 (emphasis added).

not be achievable during non-standard operations."[13] Under "Operating Constraints," the application states, "[t]o be determined."[14]

The EcoPAS system has been used at various times on twenty fermentation tanks, including both older, smaller 100 series red wine fermentation tanks and larger 400 series white wine fermentation tanks (tanks 401-405 and 411-415). Because multiple tanks were manifolded together, identifying the control efficiency achieved at any individual fermentation tank is impossible. Thus, the CCWS EcoPAS data reflects a mix of fermentation tank sizes and configurations as well as contents. There is no record of any use whatsoever on 400 series tanks used for red wine fermentation, nor any "proven track record of reliability" that demonstrates the EcoPAS's system's efficiency on any single tank containing red or white wine, in either 100 series or 400 series tanks. Without any "proven track record," there is no justification for finding that the EcoPAS system has been "achieved in practice."

The capture efficiency of the NohBell NoMoVo system is similarly uncertain. NohBell presents a range of possible capture efficiencies from 45% to over 90%. The application notes that the Performance Standard of the NoMoVo system is uncertain:

> Performance Standard: To be Determined – NohBell has provided CCWS with a performance guarantee of 67.5%. **However this control efficiency has not been validated**. Limitations of the capture system were attempted to be taken into consideration. **Only with proper validation can a real control efficiency be assigned to this combination of vapor capture and ethanol extraction from the vapor stream be assessed.**
>
> ....
>
> The performance of this technology is not consistent over the entire duration of a fermentation cycle. Absorption performance can vary from 45% to 90+% depending upon the timing of the fermentation cycle. Compound that variability with the normal insistent operations of the capture manifold, and **the actual variability of the control efficiency across all operating ranges [is] indeterminable.**[15]

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[13] *Id.* at 2.

[14] *Id.*

[15] *Id.*, Attachment C, at 1-2 (emphasis added).

Just as with the EcoPAS system, the application notes that "Operating Constraints" are "[t]o be determined."[16]

Further, the NoMoVo control system has not been applied to all of the wine-making operations at CCWS. It has reportedly been used for white wine fermentation, and for red wine fermentation in 100 series tanks. But there is no record of its use on red wine fermentation in larger 400 series tanks. Moreover, none of the data on the NoMoVo system show the control efficiency with respect to any specific tank. Again, aggregated data obtained from some tanks over portions of a fermentation cycle does not constitute a "proven track record of reliability."

c. Adjustments During the Source Compliance Demonstration Period Are No Substitute for a Performance Standard.

Neither the District, nor CCWS, nor the vendors of the ECS, are able to establish a performance standard based on source testing. CCWS candidly acknowledges that the purported performance guarantees "have not been validated." The District down plays the absence of source testing and has set, as a performance standard, a 30-day rolling average that covers up the real variability of the actual performance. This "standard," which the District candidly admits may need to be revised, is simply an acknowledgement that the District has not determined what the actual performance will be.[17]

In its response to the draft permit, CCWS noted that the District agreed that the performance standard in the draft permit was essentially a placeholder, and that the actual control efficiency would be determined during the Source Compliance Demonstration Period:

> "[I]t was also understood from our discussions with the District during the pre-application meeting that if the control efficiency that was presented in our application was not achievable during the Source Compliance Demonstration

[16] *Id.*, Attachment C, at 2.

[17] "A 30-day rolling average addresses these constraints, and is a reasonable approach to enable the BACT process to move forward *without being bogged down by excessive analytical roadblocks*." *See* Exhibit A, Authority to Construct 15044, Attachment M, District Responses to Wine Institute Comments on Draft Permit, Comment 2-9 (emphasis added). The analytical roadblock in this case is measuring the actual performance of the Emissions Control Systems.

Period ..., CCWS would be allowed to petition the District ... to adjust this value appropriately."[18]

In other words, the District decided to require the ECS so that their efficacy could be demonstrated by CCWS during its operations under the permit. If the ECS were "achieved in practice," then their effectiveness would have been demonstrated and the control efficiency would be known. If the efficiency of the ECS cannot even be reasonably estimated before implementation, those systems do not have a "proven track-record" and are not "achieved in practice."

Although the District seeks to minimize the importance of a readjustment during the Source Compliance Demonstration Period by arguing that it is standard operating procedure to work out bugs, that "this situation is special since it is a first generation BACT determination,"[19] and that the control efficiency can be changed by modifying the ATC permit, these arguments simply highlight the fact that the ECS do not have a proven standard of performance.

4. The SJVAPCD has Thoroughly Analyzed Whether the Emissions Control Systems Have been "Achieved in Practice" and Has Concluded that They have Not.

The San Joaquin Valley APCD has conducted a thorough analysis of whether the Emissions Control Systems are "achieved in practice" and has concluded that they are not. In February 2015 and May 2016, the SJVAPCD published a memorandum on the subject "Achieved in Practice Analysis for Emission Control Technologies Used to Control VOC Emissions from Wine Fermentation Tanks." The SJVAPCD's memorandum is the only written analysis that thoroughly examines publicly available information on the use of the ECS at California wineries to determine whether they are "achieved in practice." The SJVAPCD concludes that the ECS are not "achieved in practice."

[18] *See* Exhibit A, Authority to Construct 15044, Attachment J, CCWS Comments on Draft Permit at 1.

[19] *See* Exhibit A, Authority to Construct 15044, Attachment M, District Responses to Wine Institute Comments on Draft Permit, Comment 2-10.

The SJVAPCD's memorandum specifically examines the use of the ECS at the CCWS facility. The SJVAPCD concludes that the use of the ECS at CCWS has not shown those systems to be achieved in practice because:

- "The permit does not require continuous operation of the [ECS]."
- "The effectiveness of the [system] has only been estimated using ... a theoretical calculation of the quantity of ethanol that would be emitted if the tanks were uncontrolled. Inlet and outlet air quality testing has not been performed for this particular installation."
- "[T]he overall effectiveness of the system, including any ethanol re-emitted into the atmosphere during [waste] disposal, has yet to be sufficiently determined."
- "[T]he control technology has not been demonstrated to operate in a manner that would be required by BACT...."[20]

All of these critiques are valid today and preclude the District from finding that the ECS have been "achieved in practice."

In its responses to Wine Institute's comments, the District argues that the SJVAPCD's memorandum is out of date because it preceded two September and October 2016 letters from EPA opining that fermentation with the ECS constitutes the "Lowest Achievable Emission Rate" (LAER) under federal law. But EPA had previously stated the same opinions regarding the ECS in four letters to the SJVAPCD; the SJVAPCD's memorandum was a detailed rebuttal to EPA's conclusory opinions. EPA's September and October 2016 letters do not rebut the facts on which the SJVAPCD based its analysis.

The District also argues that the term "achieved in practice" is subject to interpretation by each APCD, and that the District is not bound by the interpretations of other agencies. But the SJVAPCD's letter applies the same standard and conducts the same analysis that the District must conduct in determining NAR BACT, and its analysis was made on the very same Emissions Control Systems as those covered by the ATC permit. The SJVAPCD's analysis is therefore

[20] *See* Exhibit A, Authority to Construct 15044, Attachment L, Wine Institute Comments on Draft Permit, SJVAPCD Memo re: Achieved in Practice Analysis for Emission Control Technologies Used to Control VOC Emissions from Wine Fermentation Tanks (Feb. 9, 2015, revised May 9, 2016) at 11-13.

directly applicable and relevant to the District's BACT determination for CCWS.

5. The District's Policies and Procedures Require Source Testing to Determine BACT.

The District's Policy and Procedure No. 6100.064.2017, Section 8.4, provides in part that "Source testing is *required* to ensure that the BACT performance standards and hourly mass emission rates are in compliance."[21] This policy is subject to exceptions only in situations where other specified means of compliance may be used. Thus, to qualify for BACT, a technology must be subject to source testing or other equivalent means of demonstrating compliance.

The District has recognized that a "mass-balance" approach is not equivalent to a "source test" to demonstrate the effectiveness of the ECS. In a March 1, 2017 email, the Manager of the District's Engineering Division wrote to CCWS:

> Just wanted to share with you a conversation I had with EPA recently regarding winery emission control source testing. In particular, we discussed the CCWS question and options, including a potential EPA study to evaluate source testing methodologies (a longer term project). In the meantime, EPA provided us guidance that source testing using the mass balance calculations currently in place would be an acceptable compliance tool in lieu of traditional inlet/outlet source testing. Once complete, we would utilize EPA's test method for new projects. ...[22]

The District's email implicitly acknowledges that source testing is feasible, because EPA apparently plans to perform such testing and the District plans to use EPA's method when it is developed. The District's email also recognizes that "mass balance calculations" are a stop-gap until inlet/outlet source testing is conducted. Once that testing is conducted, the District will use the source testing for "new projects."

The manufacturers of the ECS also recognize that source testing should be performed. As recently as January 2017, EcoPAS proposed that the District support EPA funding of source testing and admitted that "a solid assessment of actual emissions factors and inventory is long overdue."[23]

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[21] *See* Exhibit C, Policy No. 6100.064.2017, § 8.4 (emphasis added).

[22] *See* Exhibit D, Email from M. Goldman (District) to R. Mather (CCWS) re: Source Testing (March 1, 2017).

[23] *See* Exhibit E, Email from P. Thompson (EcoPAS) to M. Goldman (SBCAPCD) re: EPA Position on Winery VOCs (Jan. 6, 2017).

If source testing will be performed in the future to demonstrate the effectiveness of the ECS, that testing should be done before concluding that the systems are effective and achieved in practice, as required by District Policy. Indeed, as the SJVAPCD notes, NohBell and EcoPAS's refusal to conduct source testing raises significant questions and concerns regarding their control efficiency claims:

> The refusal of the control vendors to demonstrate the actual control efficiency raises significant questions and concerns over the vendors' control efficiency claims. The Valley Air District cannot, in good faith, require controls which the vendors refuse to validate. The District's concern is that, if the vendors of this technology are aware that claims of the control efficiency are potentially overstated, but they also know that EPA is about to require their technology to be installed on a widespread basis, they gain no advantage by demonstrating their actual control efficiency. Since the effectiveness was yet again not demonstrated in 2015, and for the reasons stated in the 2013 evaluation of the use of controls at CCWS, the criteria of Achieved in Practice have yet to be satisfied for these installations.[24]

The "mass-balance" calculations that the District proposes to use in place of source testing to estimate the effectiveness of the ECS are subject to considerable variability and should not be the basis for a determination that the ECS have been "achieved in practice." As EPA has noted, emissions factors for wineries "are generalized. There is a great deal of variation in parameters and emissions. Actual emissions may be much higher or lower."[25] To establish a performance standard and demonstrate that the ECS are "achieved in practice," a source test should be performed.

6. No Proven Track Record With Respect to Wine Quality or Costs

Neither CCWS nor the District has developed any data regarding the effect of the ECS on the quality of the wine produced. The District responded to Wine Institute's comments that there have been no reports of wine quality issues, but this response flips the "achieved in practice" determination on its head.[26] The question is not whether there have been complaints about wine

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[24] *See* Exhibit A, Authority to Construct 15044, Attachment L, SJVAPCD Memo at 13

[25] US EPA, Inventory Guidance and Evaluation Section, VOC Emissions from Wineries (March 10, 1992).

[26] *See* Exhibit A, Authority to Construct 15044, Attachment M, District Responses to Wine Institute Comments on Draft Permit, Comment 2-7.

quality given CCWS's irregular use of the ECS but whether the ECS have been demonstrated not to affect wine quality when used over an entire fermentation cycle. Neither CCWS nor the District has conducted any testing on this issue.

Similarly, the District has not considered the costs of installing and operating the ECS. To determine whether the ECS are feasible controls for wine-making, the District must determine the costs of the controls and whether they are reasonable both in relation to the their control efficiency and for the affected businesses. The District has conducted no such analysis.

7. Conclusion

The District's own policies acknowledge that an "achieved in practice" determination is a substitute for a determination that a particular control technology is both economically and technically feasible: "The fact that a particular control technology is 'achieved-in-practice' implies its inherent economic and technological feasibility."[27] In this case, it is plain that the ECS have not been "achieved in practice." The ECS have never been used on all tanks throughout the fermentation cycle at CCWS, nor has the District demonstrated their use in that manner at any other facility. There is no source testing data from which to develop a performance standard, and as a result the District has been forced to use a rolling average based on estimates that it concedes may require revision. The ECS have never been used in the manner that the District proposes to require them to be used at CCWS. The SJVAPCD has comprehensively reviewed the use of the ECS statewide and has concluded that they have not been "achieved in practice." The regulated community should not be required to use technology that has never been used under the same conditions as BACT and has not been demonstrated to be effective.

Wine Institute has no objection to the District's issuing an ATC to CCWS that permits the proposed facilities and that provides, with CCWS's agreement, for the use of the ECS. However, those systems have not been "achieved in practice" and are not BACT, and all references to such systems as "achieved in practice" or BACT should be removed from the permit.

[27] *See* Exhibit C, Policy No. 6100.064.2017, § 5.0.

Wine Institute hereby requests that the District hold a public hearing on this Petition and order staff to revise the permit to delete references to the Emissions Control Systems being BACT or "achieved in practice."

Dated: September 14, 2017

BARG COFFIN LEWIS & TRAPP, LLP

By: _____
R. MORGAN GILHULY
Counsel for Wine Institute

PROOF OF SERVICE

I am a resident of the State of California, over the age of eighteen years, and not a party to the within action. My business address is Barg Coffin Lewis & Trapp, LLP, 350 California Street, 22nd Floor, San Francisco, California 94104-1435. On September 14, 2017, I served the following document:

Petition For Review
Health & Safety Code Section 42302.1

☐ by transmitting via facsimile the document(s) listed above to the fax number set forth below on this date before 5:00 p.m.

☒ by causing personal delivery overnight delivery by Federal Express of the document(s) listed above to the person at the address set forth below.

☐ by dispatching a messenger from my place of business with instructions to hand-carry the above and make delivery to the following during normal business hours, by leaving a true copy thereof with the person whose name is shown or the person who was apparently in charge of that person's office or residence.

☐ by placing the document(s) listed above in a sealed envelope with postage thereon fully prepaid, in the United States mail at San Francisco, California addressed as set forth below.

☐ by transmitting via email the document(s) listed above to the email address(es) set forth below on this date before 5 p.m.

Richard Mather Central Coast Wine Services 2717 Aviation Way, Suite 101 Santa Maria, CA 93455 T: (805) 318-6500 F: (805) 928-5629	Aeron Arlin Genet Air Pollution Control Officer Santa Barbara County APCD 260 N San Antonio Rd, Suite A Santa Barbara, CA 93110-1315 T: (805) 961-8853

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed on September 14, 2017, at San Francisco, California.

Carlotta Datanagan

August 18, 2017

Certified Mail
Return Receipt Requested

Richard Mather
Central Coast Wine Services
2717 Aviation Way, Suite 101
Santa Maria, CA 93455

FID: 11042
Permit: A 15044
SSID: 10834

Re: Final Authority to Construct 15044
Fee Due: $ 3,725

Dear Mr. Mather:

Enclosed is the final Authority to Construct (ATC) No. 15044 for a modification to the 400 series tanks, installation of a barrel room, and use of Best Available Control Technology at you winemaking facility at 2717 Aviation Way, Suite 101 in Santa Maria.

THIS IS NOT YOUR PERMIT TO OPERATE. PLEASE READ ALL PERMIT CONDITIONS CAREFULLY.

Please carefully review the enclosed documents to ensure that they accurately describe your facility and that the conditions are acceptable to you. Note that your permitted emission limits may, in the future, be used to determine emission fees.

You should become familiar with all District rules pertaining to your facility. This permit does not relieve you of any requirements to obtain authority or permits from other governmental agencies.

This permit requires you to:

- Pay a **fee** of $3,725, which is due immediately and is considered late after 30 calendar days from the date stamped on the permit. Pursuant to District Rule 210.IV.B, no appeal shall be heard unless all fees have been paid. See the attached invoice for more information.
- Follow the conditions listed on your permit. Pay careful attention to the recordkeeping and reporting requirements.
- Mail us the enclosed Start-up Notification postcard once you have completed construction of the permitted equipment and are ready to operate it.
- Apply for and obtain a Permit to Operate prior to commencing routine equipment operation.
- Ensure that a copy of the enclosed permit is posted or kept readily available near the permitted equipment.
- Promptly report changes in ownership, operator, or your mailing address to the District.

If you are not satisfied with the conditions of this permit, **you have thirty (30) days from the date of this issuance to appeal this permit to the Air Pollution Control District Hearing Board** (ref: California Health and Safety Code, §42302.1). Any contact with District staff to discuss the terms of this permit will not stop or alter the 30-day appeal period.

Please include the facility identification (FID) and permit numbers as shown at the top of this letter on all correspondence regarding this permit. If you have any questions, please contact Kevin Brown of my staff at (805) 961-8826.

Sincerely,

Michael Goldman, Manager
Engineering Division

enc: Final ATC 15044
Final Permit Evaluation
Invoice # A 15044
Air Toxics "Hot Spots" Fact Sheet District Form 12B
Start-up Notification Postcard

cc: Central Coast Wine Services 11042 Project File
Engr Chron File
Accounting (Invoice only)
Kevin Brown (Cover letter only)

\\Nt\shares\Groups\ENGR\WP\Wineries\Central Coast Wine Services\ATC 15044\Final Permit\ATC 15044 - Final Letter - 8-18-2017.docx

Santa Barbara County
Air Pollution Control District
260 N San Antonio Rd, Suite A
Santa Barbara, CA 93110-1315

Invoice: A 15044
Date: AUG 18 2017
Terms: Net 30 Days

350150/6600/3280

INVOICE

BILL TO:	FACILITY:
Richard Mather Central Coast Wine Services (103930) 2717 Aviation Way, Suite 101 Santa Maria, CA 93455	Central Coast Wine Services 11042 2717 Aviation Way, Suite 101 Santa Maria

Permit: Authority to Construct (ATC) No. 15044

Fee Type: Permit Evaluation Fee (see the Fee Statement in your permit for a breakdown of the fees)

Amount Due: $ 3,725

REMIT PAYMENTS TO THE ABOVE ADDRESS
Please indicate the invoice number A 15044
on your remittance.

IF YOU HAVE ANY QUESTIONS REGARDING YOUR INVOICE PLEASE CONTACT
OUR ADMINISTRATION DIVISION AT (805) 961-8800

The District charges $25 for returned checks. Other penalties/fees may be incurred as a result of returned checks and late payment (see District Rule 210). Failure to pay this Invoice may result in the cancellation or suspension of your permit. Please notify the District regarding any changes to the above information

Santa Barbara County
Air Pollution Control District

Authority to Construct 15044

EQUIPMENT OWNER:

Central Coast Wine Services

EQUIPMENT OPERATOR:

Central Coast Wine Services

EQUIPMENT LOCATION:

2717 Aviation Way, Suite 101, Santa Maria

STATIONARY SOURCE/FACILITY:

Central Coast Wine Services

SSID: 10834
FID: 11042

AUTHORIZED MODIFICATION:

This permit authorizes fermentation of red and white wines in all of the previously installed 400 series tanks (Device IDs: 388059, 388060, 388061, and 388062), the installation of a new barrel room with a capacity of 2,500 barrels, and an associated increase to the daily mass emission limitations. The potential to emit of this project triggers Best Available Control Technology (BACT) requirements. Central Coast Wine Services will use NohBell's NoMoVo and EcoPAS LLC's EcoPAS wine emission capture and control systems to satisfy BACT requirements for wine fermentation. All fermentation tanks at this facility are required to be controlled by one of these two systems during wine fermentation.

EQUIPMENT DESCRIPTION:

The equipment subject to this permit is listed in the table at the end of this permit.

PROJECT/PROCESS DESCRIPTION:

Central Coast Wine Services (CCWS) is a winery that receives and crushes fruit for winemaking, ferments and ages wine, bottles wine, warehouses cases of bottled wine, and ships cases of bottled wine. CCWS is a federally licensed and bonded winery that allows other licensed wineries to lease or rent space for winemaking (called Lessee Operators and Alternating Proprietors).

This permit is solely for the CCWS and Alternating Proprietor (AP) operations in the "Main CCWS Operations Building". It does not cover the Lessee operations housed in the "Lessee Building". Lessee operations are not controlled by CCWS and are handled under separate permit(s) or exemption(s) by the District.

The wine fermentation process results in the release of reactive organic compounds (ROC) and carbon dioxide (CO_2) emissions. The ROC emissions are primarily ethanol. NoMoVo and EcoPAS capture and control systems are operated at the facility to control ROC emissions from all tanks during fermentation. The NoMoVo system uses a wet scrubber to entrain the ethanol in water prior to the exhaust being released to the atmosphere. The EcoPAS system uses a glycol chiller to condense the ethanol vapors prior to the exhaust being released to the atmosphere. These systems are defined as BACT and must be operated on all fermentation tanks during active fermentation.

CONDITIONS:

1. **Emission Limitations.** The mass emissions from the equipment permitted herein shall not exceed the values listed in Table 1. Compliance shall be based on the operational, monitoring, recordkeeping, and reporting conditions of this permit. Compliance with the total daily emission limit shall be based on the daily emissions calculated according to the requirements of the District-approved *Monitoring, Recordkeeping, and Reporting Plan.* Compliance with the annual emission limits shall be based on compiling the daily ROC emissions records for the year.

2. **Operational Restrictions.** The equipment permitted herein is subject to the following operational restrictions:

    a. The total red and/or white wine produced by fermentation as well as the amount of red and/or white wine stored in oak barrels at this facility may be adjusted based on the business needs of CCWS. Notwithstanding this allowance, the total emissions from this facility shall not exceed the limitations specified in Table 1. Compliance with this condition shall be based on the reports submitted according to the District-approved *Monitoring, Recordkeeping, and Reporting Plan.*

    b. No CCWS/AP fermentation or aging/storage operations shall occur in the "Lessee Building" located on the eastern side of the property. Lessee operations housed in the "Lessee Building" are not authorized by this permit.

c. Except as allowed by Condition 2.n, all tanks subject to this permit shall be closed and vented to a capture and control system during fermentation activities. The NoMoVo and/or EcoPAS control systems shall be operational at all times during fermentation operations in any tanks connected to the control equipment.

d. Collectively, the capture and control systems shall achieve a minimum combined capture and control efficiency of 67.0% (mass basis) based on a 30-day rolling average. Compliance with this condition shall be based on weekly reporting during fermentation as specified in Condition 11.

e. All NoMoVo and EcoPAS manifold piping shall be vapor tight and downslope to the associated capture and control system.

f. ROC emission reductions from the EcoPas and NoMoVo systems shall only be quantified based on the mass of captured and controlled ethanol from the previous 24 hour period.

g. All slurry/condensate drained from the NoMoVo and EcoPAS systems shall be treated or disposed per a District-approved method.

h. Each time a NoMoVo system slurry reservoir is recharged, the slurry shall be completely drained and replaced with fresh water.

i. The NoMoVo system slurry reservoir shall be drained every 24 hours when any tank connected to the system is actively fermenting.

j. The EcoPAS condensate collection vessels (Device ID: 388032) shall be vapor tight and vented back into the system's manifold except when condensate volume measurements and samples are being taken. All condensate shall be transferred to the stainless steel tote (Device ID: 388033) after being sampled and measured.

k. The EcoPAS condensate collection vessels (Device ID: 388032) shall be drained every 24 hours when any tank connected to the system is actively fermenting.

l. The EcoPAS stainless steel tote (Device ID: 388033) shall be vapor tight and only be opened when condensate is being transferred.

m. Prior to the opening of a closed top fermentation tank hatch or manway, the manifold inlet valve shall be closed.

n. Any fermentation tank undergoing active fermentation shall only be open to the atmosphere during the following non-standard operations: visual inspections, tank pump-overs, red wine cap breakups, delastage (rack and return), and wine additions. The time to perform these non-standard operations shall be minimized to the maximum extent possible.

o. Immediately following the completion of any non-standard operation authorized by Condition 2.n, the permittee shall ensure the tank hatch or manway is closed and vapor tight, the manifold inlet valve is opened, and the tank is vented to an operational capture and control system.

p. In the event of a foam-over, the permittee shall inspect and clean all capture and control system components downstream of the foam-over tank.

3. **Monitoring.** The equipment permitted herein is subject to the following monitoring requirements:

a. The permittee shall track the amount of red and white wine produced by fermentation and aged/stored in oak barrels on a daily basis (in units of gallons), as specified in the District-approved *Monitoring, Recordkeeping, and Reporting Plan*. This shall include CCWS and AP operations.

b. The permittee shall monitor Alternating Proprietor operator activities, as specified in the District-approved *Monitoring, Recordkeeping, and Reporting Plan*, to ensure that each operator provides accurate data and that their winery operations comply with this permit and District rules.

c. All fruit received for fermentation (both CCWS and AP operations) shall be weighed on CCWS' certified scale, and weight records shall be maintained.

d. The permittee shall measure the initial volume in each NoMoVo system slurry tank every time it is refilled with fresh water (in units of gallons).

e. The permittee shall measure the final volume in each NoMoVo system slurry tank every time the slurry is drained (in units of gallons).

f. The permittee shall gather a sample of slurry from each NoMoVo system's sample port every 24 hours when any tank connected to the system is actively fermenting. This sample shall be taken at the same time the slurry tank is drained. The sample shall be analyzed using a method approved by the District to determine the ethanol volume fraction. The ethanol volume fraction shall be used to quantify the captured and controlled ethanol in the daily emission spreadsheet.

g. Immediately prior to the beginning of each collection period, all EcoPAS collection vessels shall be completely empty of condensate.

h. The permittee shall measure the total captured condensate volume from the EcoPAS collection vessels every 24 hours when any tank connected to the system is actively fermenting. The measured volume shall be used to quantify the captured and controlled ethanol in the daily emission spreadsheet.

i. The permittee shall gather a sample of the condensate collected in the EcoPAS system collection vessels every 24 hours when any tank connected to the system is actively fermenting. This sample shall be taken at the same time the EcoPAS collection vessels are emptied. The sample shall be analyzed using a method approved by the District to determine the ethanol volume fraction. The ethanol volume fraction shall be used to quantify the captured and controlled ethanol in the daily emission spreadsheet.

j. The permittee shall monitor the collective capture and control efficiency of the NoMoVo and EcoPAS systems using a 30-day rolling average, as specified in the District-approved *Monitoring, Recordkeeping, and Reporting Plan.*

4. **Recordkeeping.** The permittee shall record and maintain the following information. This data shall be maintained for a minimum of three (3) years from the date of each entry and made available to the District upon request:

a. The daily wine fermentation and aging/storage records required by the District-approved *Monitoring, Recordkeeping, and Reporting Plan.*

b. The amount of wine fermented each month (summed from the daily wine fermentation records required by the District-approved *Monitoring, Recordkeeping, and Reporting Plan*). This data shall be recorded for the CCWS and AP operations, listed separately and combined.

c. The monthly US Department of Treasury Alcohol and Tobacco Tax and Trade Bureau (TTB) "*Report of Wine Premises Operations*" reports for CCWS operations shall be maintained on site and shall be made available to the District upon request.

d. The monthly US Department of Treasury Alcohol and Tobacco Tax and Trade Bureau (TTB) "*Report of Wine Premises Operations*" reports for AP operations shall be maintained on site by each AP and shall be made available to the District upon request.

e. The annual (calendar year) amount of red wine produced by fermentation, white wine produced by fermentation, red wine aged/stored in oak barrels, and white wine aged/stored in oak barrels shall be summarized from the data required by the District-approved *Monitoring, Recordkeeping, and Reporting Plan.* These records shall be maintained in a clear and legible spreadsheet in units of gallons. This data shall be recorded for the CCWS and AP operations, listed separately and combined.

f. A current inventory of the total amount of red and white wine aged/stored in oak barrels shall be maintained onsite and made available to the District during inspections. This shall include the CCWS and AP inventories, listed separately and combined.

g. The data associated with the operation of each NoMoVo capture and control system shall be recorded in a log. Each entry shall be signed by the CCWS or NohBell employee who entered it. This data shall include:

i. The date and time each instance that fresh water is added to a NoMoVo system.

ii. The initial volume in each NoMoVo system slurry tank every time fresh water is added in units of gallons.

iii. The date and time each instance that slurry is drained from a NoMoVo system.

iv. The final volume in each NoMoVo system slurry tank every time that slurry is drained in units of gallons.

v. The date and time when a slurry sample is taken.

vi. The ethanol volume fraction in the slurry at the end of every 24 hour period when any tank connected to the system is actively fermenting.

vii. The slurry disposal or treatment method.

viii. The calculated mass of ethanol captured and controlled in pounds per day.

ix. The third party sample analysis results, performed annually as specified in Condition 7 of this permit.

h. The data associated with the operation of the EcoPAS capture and control system shall be recorded in a log. Each entry shall be signed by the CCWS or EcoPAS employee who entered it. This data shall include:

i. The date and time of the condensate collection vessel volume measurements.

ii. The daily volume of condensate in each individual collection vessel in units of gallons.

iii. The total daily volume of the captured condensate in units of gallons.

iv. The date and time when a condensate sample is taken.

v. The ethanol volume fraction of the condensate at the end of every 24 hour period when any tank connected to the system is actively fermenting.

vi. The daily volume of condensate sent to the laboratory for analysis in units of milliliters.

vii. The condensate disposal or treatment method.

viii. The calculated mass of ethanol captured and controlled in pounds per day.

ix. Confirmation that the condensate collection vessels were empty when reattached to the EcoPAS system.

x. The third party sample analysis results, performed annually as specified in Condition 7 of this permit.

i. The collective capture and control efficiency of the NoMoVo and EcoPAS systems using 30-day rolling average, as specified in the District-approved *Monitoring, Recordkeeping, and Reporting Plan*.

5. **Reporting.** By March 1 of each year, a written report documenting compliance with the terms and conditions of this permit for the previous calendar year shall be provided by the permittee to the District (Attn: *Winery Project Manager*). The report shall contain information necessary to verify compliance with the emission limits and other requirements of this permit. The report shall be in a format approved by the District. All logs and other basic source data not included in the report shall be made available to the District upon request. The report shall include the following information:

a. The daily wine fermentation and aging/storage information required by the District-approved *Monitoring, Recordkeeping, and Reporting Plan*.

b. The annual (calendar year) amount of red wine produced by fermentation, white wine produced by fermentation, red wine aged/stored in oak barrels and white wine aged/stored in oak barrels in units of gallons for CCWS and AP operations.

c. The monthly US Department of Treasury Alcohol and Tobacco Tax and Trade Bureau (TTB) "*Report of Wine Premises Operations*" reports for CCWS operations.

d. The monthly US Department of Treasury Alcohol and Tobacco Tax and Trade Bureau (TTB) "*Report of Wine Premises Operations*" reports for AP operations.

e. A completed *Annual Winery Emissions Worksheet* (using the most current version). The worksheet may be downloaded at http://www.ourair.org/wineries/.

f. The most current tank equipment list and tank location map as the facility is configured on December 31st of each year. This shall include the CCWS and AP equipment.

g. The most current list of Alternating Proprietors operating at the facility on December 31st of each year.

h. The most current list of Lessees operating at the facility on December 31st of each year.

i. The data associated with the operation of the NoMoVo capture and control systems. Each entry shall be signed by the CCWS or NohBell employee who entered it. This data shall include:

   i. The date and time each instance that fresh water is added to a NoMoVo system.

   ii. The initial volume in each NoMoVo system slurry tank every time fresh water is added in units of gallons.

   iii. The date and time each instance that slurry is drained from a NoMoVo system.

   iv. The final volume in each NoMoVo system slurry tank every time that slurry is drained in units of gallons.

   v. The date and time when a slurry sample is taken.

   vi. The ethanol volume fraction in the slurry at the end of every 24 hour period when any tank connected to the system is actively fermenting.

   vii. The slurry disposal or treatment method.

   viii. The calculated mass of ethanol captured and controlled in pounds per day.

   ix. The third party sample analysis results, performed annually as specified in Condition 7 of this permit.

j. The data associated with the operation of the EcoPAS capture and control system. Each entry shall be signed by the CCWS or EcoPAS employee who entered it. This data shall include:

   i. The date and time of the condensate collection vessel volume measurements.

   ii. The daily volume of condensate in each individual collection vessel in units of gallons.

   iii. The total daily volume of the captured condensate in units of gallons.

   iv. The date and time when a condensate sample is taken.

   v. The ethanol volume fraction of the condensate at the end of every 24 hour period when any tank connected to the system is actively fermenting.

   vi. The daily volume of condensate sent to the laboratory for analysis in units of milliliters.

vii. The condensate disposal or treatment method.

viii. The calculated mass of ethanol captured and controlled in pounds per day.

ix. Confirmation that the condensate collection vessels were empty when reattached to the EcoPAS system.

x. The third party sample analysis results, performed annually as specified in Condition 7 of this permit.

k. The collective capture and control efficiency of the NoMoVo and EcoPAS capture and control systems using 30-day rolling average, as specified in the District-approved *Monitoring, Recordkeeping, and Reporting Plan.*

6. **Best Available Control Technology (BACT).** The permittee shall apply emission control technology and plant design measures that represent Best Available Control Technology (BACT) to the operation of the equipment/facilities as described in this permit and the District's Permit Evaluation for this permit. Table 3 and the *Emissions Limitations, Operational Restrictions, Monitoring, Recordkeeping and Reporting* Conditions of this permit define the specific control technology and performance standard emission limits for BACT. BACT shall be in place, and shall be operational at all times for the life of the project. BACT related monitoring, recordkeeping and reporting requirements are defined in those specific permit conditions.

7. **Sampling.** A qualified third-party individual shall obtain and analyze one sample from the NoMoVo and EcoPAS systems once per year. This sample analysis shall be completed in conjunction with the permittee's sample analysis and compared to the permittee's results.

8. **Expedited Tank Changes.** The permittee may install fermentation tanks and aging/storage tanks to the current tank inventory at this facility using the Interim Permit Approval Process (IPAP) Program. To obtain an IPAP approval for expedited tank installation, the permittee shall submit the following:

a. District Form -01

b. District Form -50

c. Revised Tank Location Map showing the location of each tank by ID number on a Plot Plan for the facility.

d. Application Filing Fee

Once the permit application has been deemed complete, the permittee may install the new tanks in accordance with the conditions of the IPAP Approval Letter and Program Agreement.

9. **Source Compliance Demonstration Period (SCDP).** Equipment permitted herein is allowed to operate temporarily during a 90-day SCDP. Initial operations of the permitted equipment (defined as the commencement of any activities applied for and authorized by this permit) define the start of the SCDP. Within 14 days of initial operations, the permittee shall provide the District written notification of the SCDP start date (using the attached yellow SCDP notification card or by e-mail notification to engr@sbcapcd.org). During the SCDP, the permittee shall comply with all operational, monitoring, recordkeeping and reporting requirements as specified in this permit.

   Prior to the start of the SCDP, the permittee shall:

   a. Submit and obtain District approval of a revised *Monitoring, Recordkeeping, and Reporting Plan*. This plan update shall address all the permit monitoring, recordkeeping and reporting requirements associated with the EcoPAS and NoMoVo systems. This shall include the capture and control efficiency calculation methodology to determine the 30-day rolling average.

   During the SCDP, the permittee shall:

   b. Begin the monitoring and recordkeeping as specified in the Monitoring and Recordkeeping Conditions of this permit;

   c. Arrange for District inspection not more than fourteen (14) calendar days (or other mutually agreed to time period) after the SCDP begins. A minimum of five calendar days advance notice shall be given to the District. This inspection is required to verify that the equipment and its operation are in compliance with District Rules and Permit Conditions;

   d. Submit a Permit to Operate (PTO) application and the appropriate filing fee not more than 60 calendar days after the SCDP begins pursuant to District Rule 201.E.2. Upon the District's determination that the permit application is "complete", the permittee may continue temporary operations under the SCDP until such time the PTO is issued final or one year from the date of PTO application completeness, whichever occurs earlier.

   SCDP extensions may be granted by the District for good cause. Such extensions may be subject to conditions. When good cause cannot be demonstrated, no administrative extension is available and the permittee shall cease operations or the permittee may submit an application to revise the ATC permit. A written request to extend the SCDP shall be made by the permittee at least seven days prior to the SCDP expiration date.

10. **Alternating Proprietors.** Central Coast Wine Services shall be responsible for updating the list of Alternating Proprietors included in Table 2 of this permit. Updates to Table 2 shall be made annually by March 1st.

11. **Weekly Reporting During Fermentation.** The permittee shall submit the information listed below on a weekly basis while fermentation is taking place at the facility. The first report shall be submitted within fourteen (14) days of initial fermentation each year. The subsequent reports shall be submitted seven (7) days after each previous report submittal until the fermentation season has finished. The submittals shall include the following:

    a. The amount of wine fermented each week (summed from the daily wine fermentation records required by the District-approved *Monitoring, Recordkeeping, and Reporting Plan*). This data shall be recorded for the CCWS and AP operations, listed separately and combined.

    b. The total amount of red and white wine aged/stored in oak barrels at the facility. This data shall be recorded for the CCWS and AP operations, listed separately and combined.

    c. The daily amount of ethanol captured and controlled in each NoMoVo and EcoPAS system in pounds per day.

    d. The collective capture and control efficiency of the NoMoVo and EcoPAS systems based on a 30-day rolling average.

    The weekly update frequency may be revised based on District discretion.

12. **Boiler/Large Water Heater Compliance.** The permittee shall comply with the District's boiler and large water heaters rules as summarized below:

    a. *Rule 360* - Any boiler or hot water heater rated at or less than 2.000 MMBtu/hr and manufactured after October 17, 2003 shall be certified per the provisions of Rule 360. An ATC/PTO permit shall be obtained prior to installation of any grouping of Rule 360 applicable boilers or hot water heaters whose combined system design heat input rating exceeds 2.000 MMBtu/hr.

    b. *Rule 361* - Any boiler or hot water heater rated more than 2.000 MMBtu/hr and less than 5.000 MMBtu/hr shall comply with the requirements of Rule 361. An ATC permit shall be obtained prior to the installation or modification of any Rule 361 applicable boiler or hot water heater.

    c. *Rule 342* - Any hot-water or steam boiler rated at 5.000 MMBtu/hr or greater shall comply with the requirements of Rule 342. An ATC permit shall be obtained prior to the installation or modification of any Rule 342 applicable boiler.

13. **Lessee Permits.** All future contracts between CCWS and Lessees shall include language that requires Lessees to obtain all necessary licenses and permits to comply with county and local regulations including District permit(s) or exemption(s).

14. **Consistency with Analysis.** Operation under this permit shall be conducted consistent with all data, specifications and assumptions included with the application and supplements thereof (as documented in the District's project file) and the District's analyses under which this permit is issued as documented in the Permit Analyses prepared for and issued with the permit.

15. **Equipment Maintenance.** The equipment listed in this permit shall be properly maintained and kept in good condition at all times. The equipment manufacturer's maintenance manual, maintenance procedures and/or maintenance checklists (if any) shall be kept on site.

16. **Compliance.** Nothing contained within this permit shall be construed as allowing the violation of any local, state or federal rules, regulations, air quality standards or increments.

17. **Severability.** In the event that any condition herein is determined to be invalid, all other conditions shall remain in force.

18. **Conflict Between Permits.** The requirements or limits that are more protective of air quality shall apply if any conflict arises between the requirements and limits of this permit and any other permitting actions associated with the equipment permitted herein.

19. **Access to Records and Facilities.** As to any condition that requires for its effective enforcement the inspection of records or facilities by the District or its agents, the permittee shall make such records available or provide access to such facilities upon notice from the District. Access shall mean access consistent with California Health and Safety Code Section 41510 and Clean Air Act Section 114A.

20. **Equipment Identification.** Identifying tag(s) or name plate(s) shall be displayed on the equipment to show manufacturer, model number, and serial number. The tag(s) or plate(s) shall be affixed to the equipment in a permanent and conspicuous position.

21. **Emission Factor Revisions.** The District may update the emission factors for any calculation based on USEPA AP-42, CARB or District emission factors at the next permit modification or permit reevaluation to account for USEPA, CARB and/or District revisions to the underlying emission factors.

22. **Nuisance.** Except as otherwise provided in Section 41705 of the California H&SC, no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

23. **Grounds for Revocation.** Failure to abide by and faithfully comply with this permit or any Rule, Order, or Regulation may constitute grounds for revocation pursuant to California Health & Safety Code Section 42307 *et seq.*

24. **Transfer of Owner/Operator.** This permit is only valid for the owner and operator listed on this permit unless a *Transfer of Owner/Operator* application has been applied for and received by the District. Any transfer of ownership or change in operator shall be done in a manner as specified in District Rule 203. District Form –01T and the appropriate filing fee shall be submitted to the District within 30 days of the transfer.

25. **Documents Incorporated by Reference.** The documents listed below, including any District-approved updates thereof, are incorporated herein by reference and shall have the full force and effect of a permit condition for this permit. These documents shall be implemented for the life of the Project and shall be made available to District inspection staff upon request.

    a. *Monitoring, Recordkeeping, and Reporting Plan* (to be updated)

    b. *Sampling Plan* (approved August 6, 2015)

    If at any time the District determines that the Plan(s) are not effective for determining compliance, the District may request an update to the Plan(s) to be submitted for District approval within 30 days of written notification from the District. Any District-approved updates shall be enforceable under this permit.

AIR POLLUTION CONTROL OFFICER

AUG 18 2017

DATE

Attachments:

- Table 1 – Permitted Emission Limits
- Table 2 – Alternating Proprietors
- Table 3 – Best Available Control Technology
- Permit Equipment List(s)
- Permit Evaluation for Authority to Construct 15044

Notes:

- This permit is valid for one year from the date stamped above if unused.
- If used, this permit supersedes PTO 14696

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TABLE 1 - Permitted Emissions
ATC 15044
Central Coast Wine Services

Process	ROC	
	lb/day	ton/yr
Total Facility Emissions (CCWS and AP Operations)[1,2]	**174.98**	**9.99**

Notes:
1. The total daily emissions limit includes fermentation and aging/storage of red and white wine.
2. The total annual emissions limit includes fermentation and/or aging/storage of red and white wine.

TABLE 2 - Alternating Proprietors
ATC 15044
Central Coast Wine Services

Alternating Proprietors (as of January 1, 2017)
1 Alapay Cellars, Inc.
2 BWSC, Inc dba Club W
3 Costa de Ora
4 DV8 Cellars
5 K&E Consulting, LLC
6 Kunin Wines
7 Maurice and Susan Wedell dba Wedell Cellars
8 Moro Vintners
9 Nagy Wines
10 Nipomo Wine Group
11 No Limits Wines, LLC
12 Olive House, Inc. dba Feeley Wines
13 Paul Lato Wines, LLC
14 Peacock Cellars, Inc.
15 Runaway Vineyards
16 Sans Liege Wines
17 Shirah Wine Company
18 Stone Pine Estate
19 Tatomer, Inc.
20 Timeless Palates
21 Turn Key Wine Brands, LLC
22 Wine Apothecary
23 Zinke Family Wines, LLC

TABLE 3 - Best Available Control Technology
ATC 15044
Central Coast Wine Services

Emission Source	Pollutant	BACT Technology	BACT Performance Standard
Wine Fermentation Tanks	ROC	NoMoVo and EcoPAS winery emission capture and control systems	Combined capture and control efficiency of 67.0% (mass basis) based on a 30-day rolling average

PERMIT EQUIPMENT LIST - TABLE A

ATC 15044 / FID: 11042 Central Coast Wine Services / SSID: 10834

A PERMITTED EQUIPMENT

1 Steel Tanks 111-114

Device ID #	**111915**	*Device Name*	**Steel Tanks 111-114**
Rated Heat Input		*Physical Size*	10,480 Gallons
Manufacturer		*Operator ID*	111-114
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Four tanks. Each tank is 10,480 gallons, dimensions: 9.96' D x 19.04' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

2 Steel Tanks 115-118

Device ID #	**111916**	*Device Name*	**Steel Tanks 115-118**
Rated Heat Input		*Physical Size*	10,420 Gallons
Manufacturer		*Operator ID*	115-118
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Four tanks. Each tank is 10,420 gallons, dimensions: 9.92' D x 19.04' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

3 **Steel Tanks 119, 221, 321-322**

Device ID #	**111903**	***Device Name***	**Steel Tanks 119, 221, 321-322**
Rated Heat Input		*Physical Size*	1,610 Gallons
Manufacturer		*Operator ID*	119, 221, 321-322
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Four tanks. Each tank is 1,610 gallons, dimensions: 5.92' D x 7.94' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

4 **Steel Tanks 121-126**

Device ID #	**111917**	***Device Name***	**Steel Tanks 121-126**
Rated Heat Input		*Physical Size*	20,701 Gallons
Manufacturer		*Operator ID*	121-126
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Six tanks. Each tank is 20,701 gallons, dimensions: 13.92' D x 19.96' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

5 **Steel Tank 127**

Device ID #	**388054**	***Device Name***	**Steel Tank 127**
Rated Heat Input		*Physical Size*	4,571 Gallons
Manufacturer		*Operator ID*	127
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Dimensions: 8.00' D x 12.38' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

6 **Steel Tanks 128, 138**

Device ID #	**388055**	***Device Name***	**Steel Tanks 128, 138**
Rated Heat Input		*Physical Size*	4,540 Gallons
Manufacturer		*Operator ID*	128, 138
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Two tanks. Each tank is 4,540 gallons, dimensions: 7.92' D x 12.35' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

7 **Steel Tanks 131-132, 141-142**

Device ID #	**111918**	***Device Name***	**Steel Tanks 131-132, 141-142**
Rated Heat Input		*Physical Size*	14,472 Gallons
Manufacturer		*Operator ID*	131-132, 141-142
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Four tanks. Each tank is 14,472 gallons, dimensions: 13.92' D x 15.17' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

8 **Steel Tanks 133-137, 143-147**

Device ID #	**111919**	***Device Name***	**Steel Tanks 133-137, 143-147**
Rated Heat Input		*Physical Size*	15,006 Gallons
Manufacturer		*Operator ID*	133-137, 143-147
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Ten tanks. Each tank is 15,006 gallons, dimensions: 13.19' D x 16.00' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

9 **Steel Tanks 148**

Device ID #	**111937**	***Device Name***	**Steel Tanks 148**
Rated Heat Input		*Physical Size*	1,261 Gallons
Manufacturer		*Operator ID*	148
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Dimensions: 5.42' D x 7.60' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

10 **Steel Tanks 149, 158, 323**

Device ID #	**388680**	***Device Name***	**Steel Tanks 149, 158, 323**
Rated Heat Input		*Physical Size*	1,703 Gallons
Manufacturer		*Operator ID*	149, 158, 323
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Three tanks. Each tank is 1,703 gallons, dimensions: 5.92' D x 8.58' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

11 **Steel Tanks 151-152, 161-162**

Device ID #	**111920**	***Device Name***	**Steel Tanks 151-152, 161-162**
Rated Heat Input		*Physical Size*	21,232 Gallons
Manufacturer		*Operator ID*	151-152, 161-162
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Four tanks. Each tank is 21,232 gallons, dimensions: 14.71' D x 17.79' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

12 Steel Tanks 153-156, 163-166

Device ID #	**111921**	***Device Name***	**Steel Tanks 153-156, 163-166**
Rated Heat Input		*Physical Size*	20,125 Gallons
Manufacturer		*Operator ID*	153-156, 163-166
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Eight tanks. Each tank is 20,125 gallons, dimensions: 14.08' D x 18.46' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

13 Steel Tanks 157, 324-325

Device ID #	**111938**	***Device Name***	**Steel Tanks 157, 324-325**
Rated Heat Input		*Physical Size*	2,026 Gallons
Manufacturer		*Operator ID*	157, 324-325
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Three tanks. Each tank is 2,026 gallons, dimensions: 6.46' D x 8.54' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

14 Steel Tank 167

Device ID #	**111925**	***Device Name***	**Steel Tank 167**
Rated Heat Input		*Physical Size*	3,030 Gallons
Manufacturer		*Operator ID*	167
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Dimensions: 7.35' D x 9.73' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

15 **Steel Tanks 171-173, 181-183**

Device ID #	**111922**	*Device Name*	**Steel Tanks 171-173, 181-183**
Rated Heat Input		*Physical Size*	7,296 Gallons
Manufacturer		*Operator ID*	171-173, 181-183
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Six tanks. Each tank is 7,296 gallons, dimensions: 11.21' D x 11.00' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

16 **Steel Tanks 174-176, 184-186**

Device ID #	**388679**	*Device Name*	**Steel Tanks 174-176, 184-186**
Rated Heat Input		*Physical Size*	7,311 Gallons
Manufacturer		*Operator ID*	174-176, 184-186
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Six tanks. Each tank is 7,311 gallons, dimensions: 11.21' D x 11.00' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

17 **Steel Tanks 211-213**

Device ID #	**111923**	*Device Name*	**Steel Tanks 211-213**
Rated Heat Input		*Physical Size*	6,272 Gallons
Manufacturer		*Operator ID*	211-213
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Three tanks. Each tank is 6,272 gallons, dimensions: 9.79' D x 11.50' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

18 Steel Tank 214

Device ID #	**111924**	***Device Name***	**Steel Tank 214**
Rated Heat Input		*Physical Size*	5,787 Gallons
Manufacturer		*Operator ID*	214
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Dimensions: 9.92' D x 9.98' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

19 Steel Tanks 215-220

Device ID #	**111936**	***Device Name***	**Steel Tanks 215-220**
Rated Heat Input		*Physical Size*	3,030 Gallons
Manufacturer		*Operator ID*	215-220
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Six tanks. Each tank is 3,030 gallons, dimensions: 7.35' D x 9.73' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

20 Steel Tanks 331-332

Device ID #	**111905**	***Device Name***	**Steel Tanks 331-332**
Rated Heat Input		*Physical Size*	3,111 Gallons
Manufacturer		*Operator ID*	331-332
Model		*Serial Number*	
Location Note	Outside by Bottling		
Device Description	Two tanks. Each tank is 3,111 gallons, dimensions: 6.71' D x 11.58' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

21 Steel Tanks 333-334, 345-346

Device ID #	**111901**	*Device Name*	**Steel Tanks 333-334, 345-346**
Rated Heat Input		*Physical Size*	3,544 Gallons
Manufacturer		*Operator ID*	333-334, 345-346
Model		*Serial Number*	
Location Note	Outside by Bottling		
Device Description	Four tanks. Each tank is 3,544 gallons, dimensions: 6.92' D x 13.21' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

22 Steel Tanks 341-343

Device ID #	**111902**	*Device Name*	**Steel Tanks 341-343**
Rated Heat Input		*Physical Size*	1,031 Gallons
Manufacturer		*Operator ID*	341-343
Model		*Serial Number*	
Location Note	Outside by Bottling		
Device Description	Three tanks. Each tank is 1,031 gallons, dimensions: 4.71' D x 8.17' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

23 Steel Tank 344

Device ID #	**111899**	*Device Name*	**Steel Tank 344**
Rated Heat Input		*Physical Size*	4,432 Gallons
Manufacturer		*Operator ID*	344
Model		*Serial Number*	
Location Note	Outside by Bottling		
Device Description	Dimensions: 7.71' D x 13.5' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

24 400 Series Tanks

24.1 Steel Tanks 401-405, 411-415

Device ID #	**388059**	*Device Name*	**Steel Tanks 401-405, 411-415**
Rated Heat Input		*Physical Size*	14,980 Gallons
Manufacturer		*Operator ID*	401-405, 411-415
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Ten tanks. Each tank is 14,980 gallons, dimensions: 11.25' D x 21.05' H, closed roof, steel, insulated, fermentation and storage use, equipped with PRV		

24.2 Steel Tanks 421, 423-424, 452

Device ID #	**388060**	*Device Name*	**Steel Tanks 421, 423-424, 452**
Rated Heat Input		*Physical Size*	14,980 Gallons
Manufacturer		*Operator ID*	421, 423-424, 452
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Four tanks. Each tank is 14,980 gallons, dimensions: 11.25' D x 21.05' H, closed roof, 304 2B stainless steel, insulated, fermentation and storage use, equipped with PRV		

24.3 Steel Tanks 422, 431-434, 441-444, 451, 453-454

Device ID #	**388061**	*Device Name*	**Steel Tanks 422, 431-434, 441-444, 451, 453-454**
Rated Heat Input		*Physical Size*	20,736 Gallons
Manufacturer		*Operator ID*	422, 431-434, 441-444, 451, 453-454
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Twelve tanks. Each tank is 20,736 gallons, dimensions: 13.25' D x 20.99' H, closed roof, 304 2B stainless steel, insulated, fermentation and storage use, equipped with PRV		

24.4 Steel Tanks 461-465, 471-475, 481-484

Device ID #	**388062**	*Device Name*	**Steel Tanks 461-465, 471-475, 481-484**
Rated Heat Input		*Physical Size*	7,527 Gallons
Manufacturer		*Operator ID*	461-465, 471-475, 481-484
Model		*Serial Number*	
Location Note	Tank Room		
Device Description	Fourteen tanks. Each tank is 7,527 gallons, dimensions: 10.25' D x 13.05' H, closed roof, 304 2B stainless steel, insulated, fermentation and storage use, equipped with PRV		

25 Steel Tanks 601-604

Device ID #	**111934**	*Device Name*	**Steel Tanks 601-604**
Rated Heat Input		*Physical Size*	1,130 Gallons
Manufacturer		*Operator ID*	601-604
Model		*Serial Number*	
Location Note	Breezeway		
Device Description	Four tanks. Each tank is 1,130 gallons, dimensions: 5.50' D x 6.79' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

26 Steel Tanks 605-608

Device ID #	**111935**	***Device Name***	**Steel Tanks 605-608**
Rated Heat Input		*Physical Size*	1,614 Gallons
Manufacturer		*Operator ID*	605-608
Model		*Serial Number*	
Location Note	Breezeway		
Device Description	Four tanks. Each tank is 1,614 gallons, dimensions: 5.75' D x 8.75' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

27 Steel Tank PTC1

Device ID #	**111939**	***Device Name***	**Steel Tank PTC1**
Rated Heat Input		*Physical Size*	351 Gallons
Manufacturer		*Operator ID*	PTC1
Model		*Serial Number*	
Location Note	Portable		
Device Description	Dimensions: 3.61' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV, portable		

28 Steel Tanks PTC2-PTC4

Device ID #	**111940**	***Device Name***	**Steel Tanks PTC2-PTC4**
Rated Heat Input		*Physical Size*	450 Gallons
Manufacturer		*Operator ID*	PTC2-PTC4
Model		*Serial Number*	
Location Note	Portable		
Device Description	Three tanks. Each tank is 450 gallons, dimensions: 4.48' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV, portable		

29 **Steel Tanks PTC5-PTC6**

Device ID #	**111941**	***Device Name***	**Steel Tanks PTC5-PTC6**
Rated Heat Input		*Physical Size*	550 Gallons
Manufacturer		*Operator ID*	PTC5-PTC6
Model		*Serial Number*	
Location Note	Portable		
Device Description	Two tanks. Each tank is 550 gallons, dimensions: 5.47' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV, portable		

30 **Steel Tanks PTC9-PTC12**

Device ID #	**111943**	***Device Name***	**Steel Tanks PTC9-PTC12**
Rated Heat Input		*Physical Size*	680 Gallons
Manufacturer		*Operator ID*	PT9-PT12
Model		*Serial Number*	
Location Note	Portable		
Device Description	Four tanks. Each tank is 680 gallons, dimensions: 4.71' D x 5.35' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

31 **Steel Tanks PTC21-PTC24**

Device ID #	**111942**	***Device Name***	**Steel Tanks PTC21-PTC24**
Rated Heat Input		*Physical Size*	550 Gallons
Manufacturer		*Operator ID*	PTC21-PTC24
Model		*Serial Number*	
Location Note	Portable		
Device Description	Four tanks. Each tank is 550 gallons, dimensions: 5.42' H, closed roof, steel, not insulated, fermentation and storage use, equipped with PRV		

32 NoMoVo Wine Emission Capture and Control System

Device ID #	**386512**	*Device Name*	**NoMoVo Wine Emission Capture System**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	TBD
Model		*Serial Number*	TBD
Location Note			
Device Description	Up to six wine emission capture and control units, connected to fermentation tanks, each system contains a wet scrubber with continuously recycled slurry tank, equipped with sample port, manufacturer guarantee of 67.% combined capture/control efficiency		

33 EcoPAS Wine Emission Capture and Control System

Device ID #	**388029**	*Device Name*	**EcoPAS System**
Rated Heat Input		*Physical Size*	
Manufacturer	EcoPAS LLC	*Operator ID*	TBD
Model		*Serial Number*	TBD
Location Note			
Device Description	Operational pressure of 4.5" water column, maximum flow of 350 scfm, equipped with pressure, temperature, flow, and VOC sensors, near horizontal orientation, manufacturer guarantee of 67.0% combined capture/control efficiency		

33.1 Condensate Collection Vessels

Device ID #	**388032**	*Device Name*	**Condensate Collection Vessels**
Rated Heat Input		*Physical Size*	15 Gallons
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Three vessels, 15 gallons each, stainless steel, used to collect condensate from the EcoPAS system, set up at various capture points in the system, captured condensate is gravity fed		

33.2 Stainless Steel Tote

Device ID #	**388033**	***Device Name***	**Stainless Steel Tote**
Rated Heat Input		*Physical Size*	250 Gallons
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Holds captured condensate after measurements are taken from the condensate collection vessels		

34 Barrel Storage Room

Device ID #	**388058**	***Device Name***	**Barrel Storage Room**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Directly to the north of the Tank Room, capacity of 2,500 barrels		

B EXEMPT EQUIPMENT

1 Glycol System

Device ID #	**388030**	*Device Name*	**Glycol System**
Rated Heat Input		*Physical Size*	
Manufacturer	York	*Operator ID*	
Model	YVAA0273DGV46	*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:* 201.A No Potential To Emit Air Contaminants	
Location Note			
Device Description	Twin screw compressor, circulates glycol to temperature control tanks and condense ethanol vapor in the EcoPAS system		

2 Glycol Backup System

Device ID #	**388031**	*Device Name*	**Glycol Backup System**
Rated Heat Input		*Physical Size*	
Manufacturer	Trane	*Operator ID*	
Model	RTAA 1004XF01A1COKBDFN	*Serial Number*	U96D33776
Part 70 Insig?	No	*District Rule Exemption:* 201.A No Potential To Emit Air Contaminants	
Location Note			
Device Description	Backup system, rotary screw, two compressors, circulates glycol to temperature control tanks and condense ethanol vapor in the EcoPAS system		

Santa Barbara County
Air Pollution Control District

PERMIT EVALUATION FOR
AUTHORITY TO CONSTRUCT 15044

1.0 BACKGROUND

1.1 General: Central Coast Wine Services is a winery that receives and crushes fruit for winemaking, ferments and ages wine, bottles wine, warehouses cases of bottled wine, and ships cases of bottled wine. Central Coast Wine Services is a federally licensed bonded winery that allows other licensed wineries known as Alternating Proprietors (AP) and Lessee Operators to lease or rent space for winemaking. Emissions occur from the fermentation and the aging/storage of wine in oak barrels.

Central Coast Wine Services (CCWS) was issued an Authority to Construct/Permit to Operate (ATC/PTO) for a wine processing facility at 2717 Aviation Way in Santa Maria on June 5, 2009. This permit was issued to bring existing equipment at the wine center under permit and to ensure compliance with District rules and regulations. This was the first permit for this facility.

On August 5, 2013, CCWS submitted an application for ATC 14257 to install a single NoMoVo system to capture and control ethanol emissions from fermentation activities at the wine center. This capture and control system operated at CCWS' discretion to allow CCWS to keep their daily emissions under the NSR offsets threshold of 55 pounds per day. A final ATC was issued for the NoMoVo system on September 23, 2013. The system first operated on September 30, 2013 and successfully captured and controlled ethanol emissions throughout the 2013 fermentation season. A final Permit to Operate was issued on December 13, 2013.

On July 21, 2015, an application for ATC 14696 was submitted for the installation of a single EcoPAS system, up to six NoMoVo systems, and the forty 400 series tanks. Of the forty 400 series tanks, ten where permitted for white fermentation and wine storage and the remaining thirty were permitted exclusively for wine storage. Similar to the existing NoMoVo systems, CCWS was permitted to use the EcoPAS system at their discretion; again to keep their daily emissions under the NSR offsets threshold of 55 pounds per day. A final ATC for this project was issued on July 24, 2015. This system first operated on August 29, 2015.

Since the initial NoMoVo system was installed four years ago and the EcoPAS system was installed two years ago, each system has consistently proven to be effective in capturing and controlling ethanol emissions from wine fermentation. This has allowed CCWS to increase the daily wine production at the facility without exceeding the permitted emission limits.

Central Coast Wine Services submitted the application for ATC 15044 on April 26, 2017 and the District deemed the application complete on May 11, 2017. This permit authorizes red or white wine fermentation and storage in the existing 400 series tanks (Device IDs: 388059, 388060, 388061, and 388062) and the installation of a new barrel room. Additionally, this permit increases the daily potential to emit of the facility by 119.99 pounds per day. No increase to the annual permitted emission limit was requested for this project. The District's BACT threshold of 25 pounds per day was exceeded as a result of this change. CCWS proposed the use of the NoMoVo and EcoPAS emission capture and control systems as BACT for this project. In addition, to simplify their operations and allow for maximum operational flexibility, CCWS has elected to also install these BACT capture and control systems on all the fermentation tanks at the facility. Upon use, this permit will supersede PTO 14696.

1.2 Permit History:

PERMIT	FINAL ISSUED	PERMIT DESCRIPTION
ATC/PTO 12733	06/05/2009	Initial facility permit.
ATC/PTO Mod 12733-01	10/09/2009	Revise operational conditions.
ATC/PTO Mod 12733-02	09/08/2010	Revise emission and operational conditions.
Reeval 12733-R1	05/11/2012	Triennial permit renewal.
ATC 14257	09/23/2013	Installation of a single NoMoVo control system
PTO 14257	12/13/2013	Operating permit for the NoMoVo control system.
ATC 14350	07/28/2014	Installation for new tanks and control systems. Permit not used.
ATC Mod 14350-01	09/23/2014	Added barrel room to ATC 14350. Permit not used.
Reeval 12733 R2	06/25/2015	Triennial permit renewal.
ATC 14696	07/24/2015	Installation of EcoPAS capture control system.
PTO 14696	03/23/2016	Permit to Operate for ATC 14696.

1.3 Compliance History:

VIOLATION TYPE	NUMBER	ISSUE DATE	DESCRIPTION OF VIOLATION
NOV	9094	05/21/2008	Installation and operation of a winery without a permit.
NOV	9111	01/16/2009	Installation and operation of spark-ignited engines without a permit.
NOV	11141	05/02/2017	Exceeded daily ROC emissions.

2.0 ENGINEERING ANALYSIS

2.1 Equipment/Processes: Harvested grapes are trucked from the vineyards in bins containing between one quarter and five tons of fruit. The grapes are weighed and removed from the bins at the winery. Fruit is then processed through either a de-stemmer to remove the berries from the grape cluster stems or a grape press to extract the juice from the berries. Dates that grapes are received vary depending on weather and grape ripening conditions, but traditionally the harvest season is early September to mid-November.

The action of yeast, called fermentation, converts the grape juice to wine. Red wine is produced from the fermentation of whole grapes to allow the extraction of red pigment from the grape skins. White wine is produced through the fermentation of grape juice without the grape skins. Yeast activity converts the sugars in the juice to ethanol, and produces heat and CO_2 during the fermentation process. The wine fermentation process results in the release of ROC (mainly ethanol) and CO_2 emissions. The temperature of fermentation is controlled by the use of refrigeration. When fermentation is complete, wine is drained from the fermentation vessel and the grape skins are pressed to remove the remaining wine. The new wine is allowed to sit in tanks or barrels to allow the yeast to settle. The wine above the settled yeast is decanted (racked) off. Wine is stored in tanks or barrels to allow the development of flavors, and for further clarification and/or blending.

Grape skins and stems (pomace) are removed from the facility on a regular basis and are composted locally. The compost is returned to the vineyards as a natural product to nourish the grape vines.

2.2 Emission Controls: The ROC emissions from wine fermentation process are captured through the use of closed top fermentation tanks. The captured fermentation emissions are controlled by either a NoMoVo or EcoPAS capture and control system. Both the NoMoVo and EcoPAS systems use a piping manifold connected to the closed top fermentation tanks to capture and route fermentation exhaust gases to the control system. The release of gas from wine fermentation is used to drive the exhaust toward the control systems. No fans, motors or compressors are utilized to increase the manifold flow rates. The enclosed tanks at the facility are connected to a manifold via flex hoses. Each tank-to-manifold connection is equipped with a bypass valve, pressure relief valve, and mesh screen. All the manifold piping is slightly down sloped toward a NoMoVo or EcoPAS system. This downslope is designed to prevent any liquid traps in the piping manifold.

If being routed to a NoMoVo system, fermentation exhaust gases pass through a wet scrubber, which captures ethanol in a slurry tank. The exhaust gases are then released to the atmosphere. Prior to ethanol saturation, and at least once per day, the slurry is drained from the scrubber and shipped offsite to a District-approved facility for treatment or disposal. The NoMoVo system is guaranteed by the manufacturer to achieve a 67.5% (mass basis) capture and control efficiency, averaged over a complete fermentation batch cycle.

When routed to the EcoPAS system, the fermentation exhaust gases make multiple passes through a glycol chilled tube-in-shell condenser. Ethanol and water vapor condense due the decreased temperature. The condensate is collected in stainless steel vessels at three locations in the system. It is then shipped offsite to a District-approved facility for treatment or disposal. The EcoPAS system is guaranteed by the manufacturer to achieve a 67.0% (mass basis) capture and control efficiency in the last three quarters of a fermentation cycle and if the fermentation exhaust flow rate is between 50 and 300 scfm, and the system pressure does not exceed five inches of water column.

The emissions from the aging and storage of wine in oak barrels are uncontrolled.

2.3 Emission Factors: Emission factors are documented in the District's spreadsheet titled "*Winery Calculations (ver 2.4).xlsx*". Fermentation emissions are based on a 2005 reference from the California Air Resources Board. Oak barrel aging/storage losses are based on mass balance techniques developed by the District using an assumed annual wine loss rate (due to evaporation). Per the San Joaquin Valley United Air Pollution Control District RACT report on wineries, typical wine loss ranges from 1 to 5 percent. The District's default wine loss value is 3 percent.

2.4 Reasonable Worst Case Emission Scenario: Based on simultaneous red wine fermentation in all the tanks at the facility (1,438,226 gallons of capacity) and a combined capture and control efficiency of 67.0%, the controlled potential to emit of the facility is 420.37 pounds per day. However, the worst-case total daily emissions are limited to 174.98 pounds per day. This limit was selected since it is a 119.99 pounds per day potential to emit increase from the daily emissions limit found in PTO 14696. This potential to emit increase was selected by CCWS in order to not trigger the Air Quality Impact Analysis threshold of 120 pounds per day. Worst-case annual emissions are limited to 9.99 tons per year. Both the daily and annual emissions limits allow for a flexible combination of red wine fermentation and white wine fermentation as well as oak barrel wine aging and storage.

2.5 Emission Calculations: CCWS calculates daily and total annual fermentation and aging/storage emissions according to the District-approved *Monitoring, Recordkeeping, and Reporting Plan*. This method is used to more accurately calculate actual peak daily emissions. The fermentation and aging/storage emissions will be calculated using the District emission factors documented in Attachments A. CCWS will report daily and annual emissions according to the District-approved *Monitoring, Recordkeeping, and Reporting Plan.*

During active fermentation, CCWS obtains a sample from the NoMoVo system's dedicated sample port every 24 hours and analyzes the ethanol concentration via a portable density meter. Additionally, the permittee records the initial volume in each NoMoVo system's slurry tank every time fresh water is added as well as the final volume in the slurry tank every time the slurry is drained. This information is used to calculate the mass of the daily captured and controlled ethanol using the equation presented in Attachment B.

CCWS measures the total volume of the captured condensate in the EcoPAS stainless steel collection vessels (Device ID: 388032) every 24 hours when any tank connected to the system is actively fermenting. A daily sample of the condensate is analyzed by a District-approved laboratory to determine the sample's ethanol content. These results are used calculate mass of the daily captured and controlled ethanol using the equation presented in Attachment B.

The uncontrolled emissions are calculated using the emission factors that are documented in the "*Winery Calculations (ver 2.4).xlsx*" spreadsheet. The daily controlled emissions are equal to the calculated uncontrolled emissions minus the daily mass of the captured and controlled ethanol.

2.6 Special Calculations: The permittee will calculate the rolling 30-day combined capture and control efficiency for the NoMoVo and EcoPAS systems using the equation below. Note that Day 1 is the first point in the data set (i.e. 29 days ago) and Day 30 is the current day.

$$CCE = \{[(C_{NoMoVo-Day\,1} + C_{NoMoVo-Day\,2} + \ldots + C_{NoMoVo-Day\,30}) + (C_{EcoPAS-Day\,1} + C_{EcoPAS-Day\,2} + \ldots + C_{EcoPAS-Day\,30})] \div (U_{Day\,1} + U_{Day\,2} + \ldots + U_{Day\,30})\} \times 100$$

Where:

- CCE = Combined capture and control efficiency for the NoMoVo and EcoPAS systems for a 30 day rolling average, %
- $U_{Day\,1}, U_{Day\,2}, \ldots, U_{Day\,30}$= Daily uncontrolled wine emissions, lbs
- $C_{NoMoVo-Day\,1}, C_{NoMoVo-Day\,2}, \ldots, C_{NoMoVo-Day\,30}$ = NoMoVo system's daily captured and controlled wine emissions, lbs
- $C_{EcoPAS-Day\,1}, C_{EcoPAs-Day\,2}, \ldots, C_{EcoPAS-Day\,30}$ = EcoPAS system's daily captured and controlled wine emissions, lbs

2.7 BACT Analyses: This project triggers BACT for ROC since the uncontrolled potential to emit of the project exceeds the District's BACT threshold of 25 pounds per day. CCWS has proposed the NoMoVo and EcoPAS wine emission capture and control systems as BACT for this project. The NoMoVo system has been in operation at the facility since the 2013 fermentation season, and the EcoPAS system has been in operation at the facility since the 2015 fermentation system. Both systems have proven to reliably capture and control ethanol emissions from wine fermentation since being installed.

In a letter to SJVAPCD, dated September 30, 2016, the U.S. EPA Region IX stated that they consider the control systems in use at CCWS to be achieved in practice control technologies for wine fermentation. A copy of this letter may be found in Attachment F of this permit evaluation. In a follow-up letter to SJVAPCD, dated October 7, 2016, the U.S. EPA Region IX raised concerns that four winery permits proposed in their jurisdiction do not represent BACT. A copy of this letter may be found in Attachment G of this permit evaluation. The District concurs that both control technologies are achieved in practice. Section D.2.a of Rule 802 defines BACT as "*The most effective emission control device, emission limit, or technique which has been achieved in practice for the type of equipment comprising such stationary source.*" Therefore, the District concludes that the proposed control technologies are achieved in practice BACT pursuant to our New Source Review Rule.

The District's achieved in practice determination is consistent with the our Policy & Procedure 6100.064.2017 for making Nonattainment Review (NAR) BACT determinations. One essential aspect to classifying a control technology as achieved in practice is that the technology has a proven "track-record" of reliability. As noted above, both the NoMoVo and EcoPAS emission control systems have an established track record of reducing ROC emissions from wine fermentation operations (in fact from the CCWS winery in particular). To document this proven track record, the District previously posted these emission capture and control systems used at CCWS to the California Air Resources Board's Best Available Control Technology (BACT) Clearinghouse. The database classifies both the NoMoVo and EcoPAS emission control devices "*Not yet a BACT*

Determination – Considered AIP" (Achieved in Practice). Upon issuance of this ATC permit, the District will update these database entries to denote the classification as "BACT".

In response to comments on the draft permit from the Wine Institute, the District performed a thorough evaluation of the emission control technologies currently in use at wineries in Santa Barbara County. This analysis, titled *Memorandum: Achieved in Practice Determination for Wine Fermentation Emission Control Technologies,* determined that all three control technologies currently in use in Santa Barbra County (NoMoVo, EcoPAS, and the packed bed scrubber system at Terravant Wine Company) meet our achieved in practice criteria. This analysis may be found in Attachment E of this permit evaluation.

Both control systems have been guaranteed by their respective manufacturers to meet a combined capture and control efficiency of 67.0% over the course of a complete fermentation batch cycle. In order to minimize the monitoring, recordkeeping and reporting requirements, a combined capture and control efficiency for both systems is used for compliance purposes. Due to the varying nature of wine fermentation cycles and to minimize the impact of non-standard operations, the calculated collective capture and control efficiency will be based on a 30-day rolling average.

Condition 6 of the permit requires the implementation of the BACT requirements list in Table 3 of the permit. BACT documentation for the NoMoVo and EcoPAS systems can be found in Attachment D of this evaluation. While the District only requires BACT to be installed for the 400 series tanks, CCWS has elected to install BACT on all the fermentation tanks at the facility to simplify their operations and allow for maximum operational flexibility.

2.8 Enforceable Operational Limits: The permit has enforceable operating conditions that ensure the equipment is operated properly. The permit limits total emissions from wine produced by fermentation and wine aged/stored in oak barrels for CCWS and AP operations. Total daily emissions are restricted to 174.98 pounds per day and total annual emissions are restricted to 9.99 tons per year. This permit requires the NoMoVo or EcoPAS system to capture and control emissions from all fermentation operations. In order to ensure the NoMoVo and EcoPAS systems are operated effectively, the permit requires the various system components to be vapor tight, inlet valves to be closed prior to opening a closed tank hatch or manway, and minimize periods when the closed tank hatch or manway is open. The time to perform non-standard operations including visual inspections, tank pump-overs, red wine cap breakups, delastage (rack and return), and wine additions are required to be minimized to the maximum extent possible. Lessee operations are not authorized by this permit.

2.9 Monitoring Requirements: Monitoring of the equipment's operational limits are required to ensure that these are enforceable. CCWS is required to track the amount of red and white wine produced by fermentation and aged/stored in oak barrels on a daily and annual basis. The permittee is also required to monitor operations associated with the NoMoVo and EcoPAS systems. CCWS is required follow the District-approved *Monitoring, Recordkeeping, and Reporting Plan* to track emissions and usage data. CCWS will monitor the AP activities to ensure that they provide accurate data and that their operations comply with this permit and District rules.

2.10 Recordkeeping and Reporting Requirements: The permit requires the data that is monitored to be recorded and reported to the District. CCWS will follow the District-approved *Monitoring, Recordkeeping, and Reporting Plan* to track daily wine fermentation and storage data, as well as the data necessary to quantify emission reductions from the NoMoVo and EcoPAS systems.

3.0 REEVALUATION REVIEW (not applicable)

4.0 REGULATORY REVIEW

4.1 Partial List of Applicable Rules:

Rule 201.	Permits Required
Rule 202.	Exemptions to Rule 201
Rule 205.	Standards for Granting Permits
Rule 301.	Circumvention
Rule 302.	Visible Emissions
Rule 303.	Nuisance
Rule 801.	New Source Review- Definitions and General Requirements
Rule 802.	New Source Review
Rule 809.	Federal Minor Source New Source Review
Rule 810.	Federal Prevention of Significant Deterioration

4.2 Rules Requiring Review:

4.2.1 *Rule 802 – New Source Review*: This rule applies to any applicant for a new or modified stationary source which emits or may emit any affected pollutant.

BACT - The BACT threshold is exceeded for ROC since the uncontrolled potential to emit of the project exceeds the Rule 802 threshold of 25 pounds per day. For this permit, all the operational restrictions from the 400 series tanks have been removed. This change allows CCWS to ferment and store red or white wine in any of these tanks. The worst case scenario emissions for this project is the simultaneous fermentation of red wine in all the 400 series tanks. The daily uncontrolled potential to emit from these tanks under this permit is 499.48 pounds per day as documented in Attachment A. See Section 2.7 for a complete discussion regarding the BACT requirements.

AQIA - The Air Quality Impact Analysis (AQIA) requirements under Section F are not triggered for this project, as the permitted emissions increase is below the Rule 802 AQIA threshold of 120 pounds per day.

Offsets - Emission offsets per Section E are not triggered for this project, as the permitted emissions increase is below the Rule 802 offsets thresholds of 240 pounds per day and 25 tons per year.

5.0 AQIA

The project is not subject to the Air Quality Impact Analysis requirements of Regulation VIII.

6.0 OFFSETS/ERCs

6.1 Offsets: The emission offset thresholds of Regulation VIII are not exceeded.

6.2 ERCs: This source does not generate emission reduction credits.

7.0 AIR TOXICS

An air toxics health risk assessment was not required for this permitting action.

8.0 CEQA / LEAD AGENCY

The District is the lead agency under CEQA for this project, and has prepared a Notice of Exemption. Pursuant to Section 15061(b)(3) of the California Environmental Quality Act (CEQA) Guidelines, the proposed modifications authorized under this permit are exempt from CEQA because the project does not have the potential for causing a significant effect on the environment. Further, no cross-media impacts are projected. A copy of the final Notice of Exemption is filed with the Santa Barbara County Clerk of the Board.

9.0 SCHOOL NOTIFICATION

A school notice pursuant to the requirements of Health and Safety Code Section 42301.6 was not required.

10.0 PUBLIC and AGENCY NOTFICATION PROCESS/COMMENTS ON DRAFT PERMIT

10.1 This project was not subject to public notice.

10.2 The District issued a draft permit to Central Coast Wine Services on May 31, 2017. Central Coast Wine Services submitted comments on the draft permit on June 7, 2017. CCWS's comment letter can be found in Attachment J and the District's responses to these comments can be found in Attachment K. In addition, Barg Coffin Lewis & Trapp, LLP, representing the Wine Institute, submitted comments on the draft permit on June 20, 2017. The Wine Institute's comment letter can be found in Attachment L and the District's responses to these comments can be found in Attachment M.

11.0 FEE DETERMINATION

Fees for the District's work efforts are assessed on a fee basis. The Project Code is *350150* (*Wineries*). See Attachment I for the fee calculations.

12.0 RECOMMENDATION

It is recommended that this permit be granted with the conditions as specified in the permit.

Kevin Brown	August 18, 2017		8/18/17
AQ Engineer/Technician	Date	Supervisor	Date

13.0 ATTACHMENT(S)

A. Project Potential to Emit Calculations
B. Controlled Emission Calculations
C. IDS Tables
D. BACT Documentation
E. Achieved in Practice Determination for Wine Fermentation Emission Control Technologies Memo
F. September 30, 2016 U.S. EPA Letter to SJVAPCD
G. October 7, 2016 U.S. EPA Letter to SJVAPCD
H. Facility Maps
I. Fee Statement
J. CCWS Comments on Draft Permit
K. District Responses to CCWS Comments on Draft Permit
L. Wine Institute Comments on Draft Permit
M. District Responses to Wine Institute Comments on Draft Permit

Authority to Construct 15044

ATTACHMENT A
Project Potential to Emit Calculations

Project Name: ATC 15044 - 400 Series Tanks Daily PTE
Date: May 16, 2017

ver 2.4

Daily Data Input

Input Data	Data	Units
400 Series Tanks Maximum Red Wine Fermented [1]	563,930	gallons (based on the total capacity of the 400 series tanks)
400 Series Tanks Maximum White Wine Fermented [1]	0	gallons
Fermentation Cycle - Red Wine	7	days
Fermentation Cycle - White Wine	15	days
Gal/Case =	2.378	
% Red Fermenting Daily =	30%	basis: District default
% White Fermenting Daily =	30%	basis: District default
% Red Oak Aging Daily =	40%	basis: District default
% White Oak Aging Daily =	25%	basis: District default

Notes:
1. Daily throughputs for fermentation show n in this table are included for the purposes of calculating the reasonable w orst case emissions only. The permit limits total daily emissions instead of daily fermentation and aging throughputs in order to provide flexibility to CCWS.

ATTACHMENT A
Project Potential to Emit Calculations

Project Name: ATC 15044 - 400 Series Tanks Daily PTE
Date: May 16, 2017

ver 2.4

District Wine Production Emission Factors

	Red	White	Units	Reference
Fermentation	6.20	2.50	lb/1000 gal	CARB, March 2005
Aging/Storage	27.83	25.83	lb/1000 gal-yr	District

Notes:

1. Aging emission factor based on % loss w ine per year in oak cooperage.
2. ETOH = ethanol
3. Aging EF = (gal w ine evap/gal w ine) * (lb w ine evap/gal w ine evap) * (lb ETOH/lb w ine evap) * 1000

SG ETOH =	0.79		MSDS
Density of Water =	8.34	lb/gal	standard
Density ETOH =	6.59	lb/gal	calculated
ETOH Vol % Red =	14.00%	gal/gal w ine	assumption
ETOH Vol % White =	13.00%	gal/gal w ine	assumption
ETOH Wt % Red =	11.40%	lb/lb w ine	calculated
ETOH Wt % White =	10.56%	lb/lb w ine	calculated
Density (Red Wine) =	8.14	lb/gal	calculated
Density (Wt Wine) =	8.16	lb/gal	calculated
% Wine Loss by Vol =	3.0%	gal/gal w ine	District (loss of w ine)

Notes:

- brow n cells are calculations
- black cells are APCD default values

ATTACHMENT A
Project Potential to Emit Calculations

Project Name: ATC 15044 - 400 Series Tanks Daily PTE
Date: May 16, 2017

ver 2.4

400 Series Tanks Daily Wine Fermentation PTE (ethanol)

Process	Red Usage [3]	White Usage [3]	Usage Units	Red Wine Emission Factor	White Wine Emission Factor	Emission Factor Units
400 Series Tanks: Fermentation	563,930	0	gal/cycle	6.20	2.50	lb/1000 gal

Red Fermentation PTE (lb/day)	White Fermentation PTE (lb/day)	Total PTE (lb/day) [4]
499.48	0.00	***499.48***

Notes:

1. Brown cells are calculations
2. Dark blue cells are data fields from other sheets
3. Daily usage values for fermentation shown in this table are for calculation purposes only and do not represent enforceable usage values. The permit limits daily emissions only and does not contain daily usage limits.
4. The total daily emissions due to the fermentation process are equal to the daily white or red wine fermentation emissions and are not the sum of the daily red and white fermentation emissions. In order to provide flexibility to Central Coast Wine Services, this permit limits the total daily emissions to 174.98 lbs/day.

Authority to Construct 15044

ATTACHMENT B
Controlled Emission Calculations

NoMoVo System

Mass balance over one cycle of NoMoVo system:

$$\Delta M = Vapor_{in} - Vapor_{out} - Slurry_{out}$$
$$\Delta M = M_f - M_i$$
$$where \quad M_f = V_f \times ETOH_f \times 6.6\frac{lb}{gal}$$
$$M_i = V_i \times ETOH_i \times 6.6\frac{lb}{gal}$$
$$\Rightarrow Vapor_{out} = Vapor_{in} - Slurry_{out} - \Delta M$$
$$\because Assume\ Slurry_{out} = 0$$
$$\because Assume\ V_f = V_i$$
$$\because \Delta M = M_f - M_i = (V_f \times ETOH_f - V_i \times ETOH_i) \times 6.6\frac{lb}{gal}$$
$$\therefore Vapor_{out} = Vapor_{in} - \left[V_f \times ETOH_f - V_f \times ETOH_f + V_f \times ETOH_f - V_i \times ETOH_i\right] \times 6.6\frac{lb}{gal}$$
$$= Vapor_{in} - V_i\left[ETOH_f - ETOH_i\right] \times 6.6\frac{lb}{gal}$$

The mass of vapor emitted each 24 hour period is calculated as:

$$Vapor_{out} = Vapor_{in} - V_i \times (ETOH_f - ETOH_i) \times 6.6\frac{lb}{gal}$$

Where:
- ΔM = change in mass of ethanol (lb)
- $Vapor_{in}$ = mass of uncontrolled ethanol emissions into NoMoVo (lb)
- $Vapor_{out}$ = mass of controlled ethanol emissions out of NoMoVo (lb)
- $Slurry_{out}$ = mass of ethanol in NoMoVo slurry (lb)
- M_f = final mass of ethanol (lb)
- M_i = initial mass of ethanol (lb)
- V_i = slurry volume at the beginning of the 24 hour period (gallons)
- V_f = slurry volume at the end of the 24 hour period (gallons)
- $ETOH_i$ = ethanol volume fraction at the beginning of the 24 hour period
- $ETOH_f$ = ethanol volume fraction at the end of the 24 hour period
- 6.6 lb/gal = ethanol density

Authority to Construct 15044

ATTACHMENT B
Controlled Emission Calculations

EcoPAS System

1. Record liquid volumes from external volume scale for all the condensate collection vessels:
   a. Pre, P
   b. Mid, M
   c. Final, F

2. Sum all three volumes, $\sum(P + M + F)$ = Total condensate volume, V in gallons

3. Calculate volume fraction for each vessel:
   a. P/V x 100 = P_f
   b. M/V x 100 = M_f
   c. F/V x 100 = F_f

4. Note that $P_f + M_f + F_f = 100$

5. A single sample of condensate for laboratory analysis will be used by filling a 100 ml graduated cylinder, or other sample vessel with:

   $\sum(Pf + Mf + Ff)$

   Where each volume is measured in mL (Note: if the laboratory requires a larger volume each measurement can be scaled linearly).

6. Measurement of EtOH captured by EcoPAS system calculated from the percent EtOH measured by the laboratory and the total volume from the condensate collection vessels:

   EtOH captured = % $EtOH_{Vinquiry}$ x V x 6.6 lb/gal

ATTACHMENT C
IDS Tables

PERMIT POTENTIAL TO EMIT

	NO_x	ROC	CO	SO_x	PM	PM_{10}	$PM_{2.5}$
lb/day		174.98					
lb/hr							
TPQ							
TPY		9.99					

FACILITY POTENTIAL TO EMIT

	NO_x	ROC	CO	SO_x	PM	PM_{10}	$PM_{2.5}$
lb/day		174.98					
lb/hr							
TPQ							
TPY		9.99					

STATIONARY SOURCE POTENTIAL TO EMIT

	NO_x	ROC	CO	SO_x	PM	PM_{10}	$PM_{2.5}$
lb/day		174.98					
lb/hr							
TPQ							
TPY		9.99					

Notes:
(1) Emissions in these tables are from IDS.
(2) Because of rounding, values in these tables shown as 0.00 are less than 0.005, but greater than zero.

Authority to Construct 14632

ATTACHMENT D
BACT Determination

ENGINEERING EVALUATION BACT DISCUSSION LIST- NoMoVo System

1. Pollutant(s): ROC

2. Emission Points: Wine Fermentation Tanks

3. BACT Determination Summary:

   Technology: NoMoVo Capture and Control System

   Performance Standard: Collective facility-wide capture and control efficiency of 67.0% (mass basis) based on a 30-day rolling average.

4. Level of Stringency: [x] Achieved in Practice
   [ ] Technologically Feasible
   [ ] RACT, BARCT, NSPS, NESHAPS, MACT

5. BACT Selection Process Discussion: The applicant has successfully operated a NoMoVo system at the facility for four fermentation seasons and has established a proven "track-record" of reliability. The District has determined that the NoMoVo emissions control system is an achieved-in-practice BACT technology. Additionally, the USEPA has determined that the NoMoVo capture and control system is considered an achieved-in-practice control technology for wine fermentation. This BACT determination was based on the application materials, the manufacturer's capture and control efficiency guarantee, and prior operational history of these controls at the CCWS facility.

6. BACT Effectiveness: BACT is expected to be effective over the course of a complete fermentation cycle.

7. BACT During Non-Standard Operations: Non-standard operations identified by the applicant are winemaking operations that require the closed tank hatches or manways to be opened. These activities include visual inspections, tank pump-overs, red wine cap breakups, delastage, and wine additions. The time taken to complete these activities shall be minimized per the permit conditions. BACT is not feasible during these non-standard operations since the manifold inlet valve shall be closed prior to commencing these activities. Additionally, BACT is not feasible during tank foam-overs.

8. Operating Constraints: A NoMoVo (or EcoPAS) system must be used to capture and control emissions from all fermentation operations in the tanks subject to this permit. Collectively, the systems must achieve a minimum capture and control efficiency greater than or equal to 67.0% (mass basis) based on a 30-day rolling average. All manifold piping shall be vapor tight and slope downward to the control system. All slurry drained from a NoMoVo system must be disposed or treated in a District-approved method.

9. Continuously Monitored BACT: CEMS are not required for this project.

ATTACHMENT D
BACT Determination

10. Source Testing Requirement: There are no source testing requirements for this capture and control equipment. The capture and control efficiency of the NoMoVo system shall be determined using a mass balance approach. Specifically, the amount of ethanol captured and controlled each day will be determined through analysis of the slurry at the end of each 24 hour period. The total daily uncontrolled ethanol emissions will be calculated using District-approved emission factors and calculation methodologies. The daily uncontrolled emissions and amount of ethanol captured will be used to calculate the daily control efficiency. The daily control efficiencies will be averaged on a 30-day rolling basis to determine compliance with the BACT performance standard.

11. Compliance Averaging Times: The capture and control efficiency shall be based on a 30-day rolling averaging period.

12. Multi-Phase Projects: This is not a multi-phase project.

13. Referenced Sources: The following sources were reviewed to determine BACT: Application material; NoMoVo manufacturer's capture and control efficiency guarantee; SBCAPCD *Achieved in Practice Determination for Wine Fermentation Emission Control Technologies* Memo; U.S. EPA Region 9 letter to SJVAPCD regarding Bear Creek Winery, CBUS Ops Inc., Delicato Vineyard, and E&J Gallo Winery projects, September 30, 2016; CARB BACT Clearinghouse.

14. PSD BACT: Not Applicable

Authority to Construct 15044

ATTACHMENT D
BACT Documentation

ENGINEERING EVALUATION BACT DISCUSSION LIST- EcoPAS System

1. Pollutant(s): ROC

2. Emission Points: Wine Fermentation Tanks

3. BACT Determination Summary:

   Technology: EcoPAS Ethanol Capture and Control System

   Performance Standard: Collective facility-wide capture and control efficiency of 67.0% (mass basis) based on a 30-day rolling average.

4. Level of Stringency: [x] Achieved in Practice
   [ ] Technologically Feasible
   [ ] RACT, BARCT, NSPS, NESHAPS, MACT

5. BACT Selection Process Discussion: The applicant has successfully operated an EcoPAS system at the facility for two fermentation seasons and has established a proven "track-record" of reliability. The District has determined that the EcoPAS emissions control system is an achieved-in-practice BACT technology. Additionally, the USEPA has determined that the EcoPAS capture and control system is considered an achieved-in-practice control technology for wine fermentation. This BACT determination was based on the application materials, the manufacturer's capture and control efficiency guarantee, and prior operational history of these controls at the CCWS facility.

6. BACT Effectiveness: BACT is expected to be effective if the fermentation exhaust flow rate is between 50 and 300 scfm and the pressure in the system does not exceed 5" of water column. Additionally, the manufacturer does not provide a performance guarantee during the first quarter of a fermentation cycle due to the chemical composition of the fermentation exhaust gases during this time. In order to address these specifications, BACT effectiveness will be determined over a 30-day rolling period.

7. BACT During Non-Standard Operations: Non-standard operations identified by the applicant are winemaking operations that require the closed tank hatches or manways to be opened. These activities include visual inspections, tank pump-overs, red wine cap breakups, delastage, and wine additions. The time taken to complete these activities shall be minimized per the permit conditions. BACT is not feasible during these non-standard operations since the manifold inlet valve shall be closed prior to commencing these activities. Additionally, BACT is not feasible during tank foam-overs.

ATTACHMENT D
BACT Determination

8. Operating Constraints: An EcoPAS (or NoMoVo) system must be used to capture and control emissions from all fermentation operations in the tanks subject to this permit. Collectively, the systems must achieve a minimum capture and control efficiency greater than or equal to 67.0% (mass basis) based on a 30-day rolling average. All manifold piping shall be vapor tight and slope downward to the control system. All condensate collected from an EcoPAS system must be disposed or treated in a District-approved method.

9. Continuously Monitored BACT: CEMS are not required for this project.

10. Source Testing Requirement: There are no source testing requirements for this capture and control equipment. The capture and control efficiency of the EcoPAS system shall be determined using a mass balance approach. Specifically, the amount of ethanol captured and controlled each day will be determined through analysis of the condensate at the end of each 24 hour period. The total daily uncontrolled ethanol emissions will be calculated using District-approved emission factors and calculation methodologies. The daily uncontrolled emissions and amount of ethanol captured will be used to calculate the daily control efficiency. The daily control efficiencies will be averaged on a 30-day rolling basis to determine compliance with the BACT performance standard.

11. Compliance Averaging Times: The capture and control efficiency shall be based on a 30-day rolling averaging period.

12. Multi-Phase Projects: This is not a multi-year project.

13. Referenced Sources: The following sources were reviewed to determine BACT: Application material; EcoPAS manufacturer's capture and control efficiency guarantee; SBCAPCD *Achieved in Practice Determination for Wine Fermentation Emission Control Technologies* Memo; US EPA Region 9 letter to SJVAPCD regarding Bear Creek Winery, CBUS Ops Inc., Delicato Vineyard, and E&J Gallo Winery projects, September 30, 2016; CARB BACT Clearinghouse.

14. PSD BACT: Not Applicable

ATTACHMENT E
Achieved in Practice Determination for Wine Fermentation Emission Control Technologies Memo

Our Vision Clean Air

Santa Barbara County
Air Pollution Control District

MEMORANDUM

TO: Michael Goldman, Manager, Engineering Division
FROM: David Harris, Supervisor, Engineering Division
SUBJECT: Achieved in Practice Determination for Wine Fermentation Emission Control Technologies
DATE: August 18, 2017

Summary:

This memo provides the Santa Barbara County Air Pollution Control District's (District's) analysis of the achieved in practice status of wine fermentation emission control technologies[1] currently in use in Santa Barbara County. As of the date of this memo, the packed bed scrubber system in use at Terravant Wine Company and the NoMoVo and EcoPAS control systems in use at Central Coast Wine Services are achieved in practice emission control technologies for wine fermentation operations.

Background:

The wine fermentation process results in the release of reactive organic compound (ROC) (mainly ethanol) emissions. New wineries and modifications to existing wineries with an ROC potential to emit of 25 pounds per day or more trigger the nonattainment review (NAR) Best Available Control Technology (BACT) requirements of Rule 802. Rule 802.D.2 defines NAR BACT as the more stringent of:

a. The most effective emission control device, emission limit, or technique which has been achieved in practice for the type of equipment comprising such stationary source; or

b. The most stringent limitation contained in any State Implementation Plan; or

c. Any other emission control device or technique determined after public hearing to be technologically feasible and cost-effective by the Control Officer.

In April 2017, Central Coast Wine Services (CCWS) submitted an Authority to Construct permit application (ATC 15044) to remove operational restrictions and authorize the fermentation of red and white wines in all of their previously installed 400 series tanks. The potential to emit of this project exceeded the 25 pound per day NAR BACT threshold, therefore BACT was triggered for this project. In light of this permit application, the question has arisen as to whether any of the emission control systems

[1] As used throughout this document, the term "emission control system" refers to both the emission capture and emission control functionality of the system.

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currently in use at wineries in Santa Barbara County have been achieved in practice. The purpose of this memo is to analyze the achieved in practice status of each emission control technology currently in use at wineries in Santa Barbara County.

Most Effective Control Achieved in Practice Definition:

District Policy and Procedure No. 6100.064.2017 *Best Available Control Technology* provides the following guidance on the definition of the "most effective emission control device, emission limit, or technique that has been achieved in practice for the type of equipment comprising such stationary source":

> Most Effective Control Achieved in Practice: There are three important elements to this part of the definition. The first element refers to the *most effective control device, technique, or emission limit.* This element is defined in a broad fashion to allow for the appropriate selection criteria for the specific equipment or process in question. Examples include:
>
> - Concentration limits of 5 ppmv NOx from the stack of a small boiler using a low-NOx burner
> - Mass destruction rate efficiency of 98.0 percent for a regenerative thermal oxidizer
> - Selective catalytic reduction with a concentration limit of 2 ppmv NOx for a 10 MW combined-cycle/cogeneration combustion gas turbine.
>
> The second element is achieved-in-practice. This element indicates that the technology has a proven "track-record" of reliability. For example, take a biogas fired spark ignited IC engine using SCR controls located at Facility X. This engine meets an emission standard of 9 ppmvd (at 15% O_2) and has done so for a reasonable time period. Next, if Facility Z (in our jurisdiction) triggers BACT for a similar proposed project, then it would need to meet this achieved-in-practice BACT standard. Facility X could be located anywhere in the USA.
>
> The third element of the definition refers to the type of equipment comprising the stationary source (i.e., class or category of source). This could be as large as a group of basic equipment units that provide the same function (e.g., the combination of motors, turbines, or reciprocating engines to provide torsional drive). On the other hand, it could be a more specific size segment or subtype within an equipment type (e.g., boilers over 33 MMBtu/hr heat input, or lean-burn engines).

This analysis will focus on the second element, "achieved in practice," of the definition discussed above. The emission control technologies being analyzed comprise the first element, and wine fermentation tanks comprise the third element of the definition. The term "achieved in practice" is not defined in federal, state or District rules or regulations. District Policy and Procedure No. 6100.064.2017 defines achieved in practice as a "proven 'track-record' of reliability." To determine if a control device has a proven track-record of reliability, the historical operations of the equipment must be evaluated. This analysis includes the frequency and duration of equipment operation, as well as the track-record of the equipment to successfully achieve its intended purpose (i.e. control ethanol emissions from wine fermentation). It is also important to note that the guidance in District Policy and Procedure No. 6100.064.2017 only considers whether an emission control technology has been operated successfully at a source for a reasonable period of time. This policy does not require a technology to have been installed to meet an NAR BACT requirement in order to be defined as achieved in practice.

In an August 25, 1997 letter from David Howekamp of the U.S. Environmental Protection Agency (EPA), Region IX to Mohsen Nazemi of the South Coast Air Quality Management District (SCAQMD), the U.S. EPA established a position that the successful operation of a new control technology for six months constitutes achieved in practice. Due to the seasonal nature of the winemaking industry, fermentation

activities only occur for approximately 60 to 80 days per year. Therefore, the EPA six month criteria must be adjusted to reflect the seasonality of the source type. In this case, the District believes the successful operation of the control equipment for at least one full fermentation season to be an appropriate criterion to demonstrate a technology has been achieved in practice. For equipment that is not operated continuously, the cumulative operation of the equipment for at least 80 days (one full fermentation season) is appropriate.

Finally, the "achieved-in-practice" component of the NAR BACT definition only considers the most stringent control achieved in practice for the category of source being considered. Thus, no discussion of costs is necessary or appropriate for sources that are already using a level of control considered achieved in practice. The fact that a particular control technology is achieved in practice implies its inherent economic feasibility. Since the technologies evaluated by this memo are already installed and in use at wineries in Santa Barbara County, cost is not evaluated in this analysis.

Achieved In Practice Analysis:

The following analysis evaluates the achieved in practice status of each wine fermentation emission control technology currently in use in Santa Barbara County.

1. Packed Bed Scrubber Technology - Terravant Wine Company:
   Terravant Wine Company (Terravant) provides custom winemaking services to the wine industry. Red and white wine grapes are crushed, fermented and stored at the facility, located at 35 Industrial Parkway in Buellton. Authority to Construct (ATC) 12364 was issued for the facility on February 21, 2008, and the facility began operations in fall 2008. Potential emissions from the new winery triggered BACT requirements for the project, however the District determined that BACT, while technically feasible for the new facility, was not cost effective. Due to other regulatory demands (e.g., offsets), the applicant moved forward with the design and installation of an emission control system.

   A packed bed scrubber emission control system was designed to control ethanol emissions to the atmosphere during the wine fermentation process. An active ventilation system, utilizing ducting and blowers, continuously evacuates the air from the fermentation room and two additional storage rooms and routes the airflow to the control system. The building design has fast opening and closing doors to ensure that the rooms are maintained at a negative pressure. The ethanol emissions from wine fermentation and storage activities are routed to a packed bed scrubber control device. Scrubbing liquid, in this case water, is introduced at the top of the scrubber and flows down through the packed bed tower. Ethanol is absorbed into the scrubbing liquid due to ethanol's affinity to water. Once absorbed in the water, the ethanol is oxidized to carbon dioxide and water chemically using hydrogen peroxide. To oxidize the ethanol completely and rapidly, the liquid is passed through a UV reactor to speed the oxidation process. The operating permit for the facility requires the packed bed scrubber emission control system to be operated at all times during wine fermentation activities.

   While the packed bed scrubber control system at the Terravant winery is a custom system designed specifically for the facility, the system is comprised of components that are commercially available "off the shelf" (e.g. packed bed scrubber tower, tanks, pumps, UV lamp, etc.). Packed bed scrubbers are widely used to control ROC emissions throughout many industries. The vendor that designed the Terravant control system, or any other vendor familiar with the design of packed bed scrubber control systems, would be able to design and build a similar control system for another winery.

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ATC 12364 required the packed bed scrubber system to achieve a 95% control efficiency. Initial inlet/outlet source testing of the control system during the 2008 fermentation season showed the system was only achieving a 64% control efficiency. At the request of Terravant, the Permit to Operate (PTO) for the control system lowered the control efficiency requirement to 75%. The packed bed scrubber control system was subsequently re-engineered, and a source test during the 2009 fermentation season showed the control system achieved 91% control efficiency. The control system failed to meet the 75% control efficiency requirement during the 2011 – 2014 fermentation seasons. The lowest achieved control efficiency of the system was 47.6% during the 2013 fermentation season. Terravant and the control system vendor attributed the performance issues to improper maintenance of the system during times of non-operation between fermentation seasons.

In the spring of 2015, Terravant applied to modify their permit to eliminate the red and white wine production limits, increase the wine fermentation and aging ROC emission limits, and eliminate the minimum required scrubber control efficiency. This permit included daily recordkeeping requirements and biannual source testing requirements to demonstrate compliance with the daily emission limits. Terravant also implemented an enhanced control system maintenance program during this time. Since that permit was issued, four inlet/outlet source tests conducted during the 2015 and 2016 fermentation seasons have shown the system to achieve 83.7%, 86.3%, 80.9% and 83.5% control efficiencies, respectively. Looking at all eight years of source test data, the system has always achieved control of wine fermentation emissions at the Terravant facility. After improvements to the maintenance program, the control system has demonstrated two full fermentation seasons of reliable and consistent emission control.

In summary, the packed bed scrubber emission control system has been successfully operated to control wine fermentation emissions at the Terravant facility for eight full fermentation seasons. While the control system experienced issues related to maintenance during the initial years of operation, these issues have been addressed, and the control system has achieved an average control efficiency of 83.6% during the most recent two full fermentation seasons. Based on this analysis, it is clear that the Terravant packed bed scrubber control system has achieved a proven track-record of reliability for controlling ethanol emissions from wine fermentation. Therefore, the control system is designated achieved in practice emission control technology for wine fermentation operations at new wineries. Since the building housing the wine fermentation activities must be able to accommodate the active ventilation system that collects vapors for the packed bed scrubber, this system may not be technically feasible at existing wineries.

2. NoMoVo Technology - Central Coast Wine Services:
Central Coast Wine Services (CCWS) provides custom winemaking services to the wine industry. Red and white wine grapes are crushed, fermented and stored at the facility, located at 2717 Aviation Way in Santa Maria. The facility was constructed and operated without a District permit, and Authority to Construct/ Permit to Operate 12733 was issued on June 5, 2009 to bring the facility into compliance with District rules and regulations. Potential emissions from the winery triggered BACT requirements for the project, however the District determined that BACT, while technically feasible for the new facility, was not cost effective. The winery operated for several years with emission limits set just below offset thresholds and implemented daily recordkeeping requirements to ensure the emission limits were not exceeded. In August 2013, CCWS submitted an application to voluntarily install and operate the NoMoVo emission capture and control system at their winemaking facility as needed to maintain emissions below the permitted limits. An ATC permit for the control system was issued on September 23, 2013, and the system was installed and

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operated as necessary for the remainder of the 2013 fermentation season. A second NoMoVo system was permitted in 2014 and installed prior to the 2015 fermentation season.

The NoMoVo system uses a piping manifold connected to closed top fermentation tanks to capture and route fermentation exhaust gases to the control system. The system is entirely passive, whereby the release of gas from wine fermentation is used to drive the exhaust toward the control system. In the NoMoVo control system, fermentation exhaust gases pass through a wet scrubber, which absorbs ethanol in water that is recirculated countercurrent through the system. The cleaned exhaust gases are then released to the atmosphere. Prior to ethanol saturation, and at least once per day, the ethanol/water slurry is drained from the scrubber and shipped offsite in an airtight container to a District-approved facility for treatment or disposal. Each NoMoVo control system is capable of being connected to and controlling several fermentation tanks at one time.

The NoMoVo system has been in use at the CCWS facility for one partial fermentation season (2013) and three full fermentation seasons (2014 – 2016) on an as-needed basis. During the three full seasons of operation, the NoMoVo system was operated for 147 cumulative days out of the 223 days of wine fermentation activities (67%). Historically, the NoMoVo system was not operated during the beginning and end of the fermentation season, when wine fermentation volumes were lower and the use of emission controls was not necessary to comply with the daily emission limits. Excluding the days before the system was first operated each season and the days after the system was last operated each season, the NoMoVo system operated on 147 of 151 days (97%). Additionally, the NoMoVo system was operated for 30 consecutive days in 2014, 47 consecutive days in 2015, and 37 consecutive days in 2016 at the CCWS facility. The cumulative usage of the NoMoVo system at the CCWS facility meets the District's 80 cumulative days of operation criteria for qualifying the technology as achieved in practice. Moreover, the historical system usage demonstrates a clear track-record of frequent operation, with near continuous operation during the bulk of each fermentation season.

Due to the nature of operation of the NoMoVo system, the amount of ethanol captured and controlled by the system can readily be determined by measuring the ethanol content and volume of the NoMoVo slurry. The operating permit for CCWS requires the NoMoVo slurry to be measured for ethanol content and volume, and replaced with fresh water on a daily basis. A review of the annual reports from CCWS show that each NoMoVo system successfully captured and controlled ethanol emissions from wine fermentation on every day they were operated. During the three full seasons of operation, the NoMoVo systems captured and controlled 3,849 pounds of ethanol that would have otherwise been emitted to the atmosphere. Based on this operational data, the NoMoVo systems achieved an average of 26.2 pounds of ethanol capture and control per day. This data shows the NoMoVo system has positively achieved the control of ethanol emissions from wine fermentation operations.

In summary, the NoMoVo emission control system has been successfully operated to control wine fermentation emissions at the CCWS facility for three full fermentation seasons. The control system has been operated on a frequent basis, with nearly continuous operation during the majority of fermentation operations. When the control systems were operated, they achieved an average of 26.2 pounds of ethanol capture and control per day. Based on this information, the NoMoVo control system has achieved a proven track record of reliability for controlling ethanol emissions from wine fermentation. Therefore, the NoMoVo control system is considered achieved in practice emission control technology for wine fermentation operations at new and modified wineries.

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3. EcoPAS Technology - Central Coast Wine Services:
On July 24, 2015, CCWS was issued an ATC permit to install and operate the EcoPAS emission control system to control emissions from the 400 series fermentation tanks on an as-needed basis. The control equipment was installed in August 2015 and was operated on an as-needed basis for the 2015 and 2016 fermentation seasons.

The EcoPAS system uses a piping manifold connected to closed top fermentation tanks to capture and route fermentation exhaust gases to the control system. The system is entirely passive, whereby the release of gas from wine fermentation is used to drive the exhaust toward the control system. In the EcoPAS control system, the fermentation exhaust gases make multiple passes through a glycol chilled tube-in-shell condenser. Ethanol and water vapors in the exhaust gases condense into liquid phase due the decreased temperature. The condensate is collected in airtight stainless steel vessels at three locations in the system. The condensate is stored onsite and then shipped offsite to a District-approved facility for treatment or disposal. The EcoPAS control system is capable of being connected to and controlling several fermentation tanks at one time.

The EcoPAS system has been in use at the CCWS facility for two full fermentation seasons (2015 – 2016) on an as-needed basis. During the two seasons of operation, the EcoPAS system was operated on 108 cumulative days out of the 145 days of wine fermentation activities (74%). Historically, the EcoPAS system was not operated during the beginning and end of the fermentation season, when wine fermentation volumes were lower and the use of emission controls was not necessary to comply with the daily emission limits. Excluding the days before the system was first operated each season, and the days after the system was last operated each season, the EcoPAS system was operated on 108 of 117 days (92%). Additionally, the EcoPAS system was operated for 34 consecutive days in 2015 and 37 consecutive days in 2016 at the CCWS facility. The cumulative usage of the EcoPAS system at the CCWS facility meets the District's 80 cumulative days of operation criteria for qualifying the technology as achieved in practice. Moreover, the historical system usage demonstrates a clear track-record of frequent operation, with near continuous operation during the bulk of each fermentation season.

Due to the nature of operation of the EcoPAS system, the amount of ethanol captured and controlled by the system can be readily determined by measuring the ethanol content and volume of the EcoPAS condensate. The operating permit for CCWS requires the EcoPAS condensate be measured for ethanol content and volume on a daily basis. A review of the annual reports from CCWS show that the EcoPAS system successfully captured and controlled ethanol emissions from wine fermentation on every day that is was operated. During the two seasons of operation, the EcoPAS system captured and controlled 501 pounds of ethanol that would have otherwise been emitted to the atmosphere. Based on this operational data, the EcoPAS system achieved an average of 4.6 pounds of ethanol capture and control per day. This data shows the EcoPAS system has positively achieved the control of ethanol emissions from wine fermentation operations at CCWS.

It is important to note that the EcoPAS system was only connected to series 400 tanks used for white wine fermentation during the 2015 and 2016 seasons. Ethanol emissions from white wine fermentation are approximately 60% lower than ethanol emissions from red wine fermentation (2.5 lb/1000 gallon vs. 6.2 lb/1000 gallon). The EcoPAS system would be expected to capture and control more ethanol if connected to tanks used for red wine fermentation.

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In summary, the EcoPAS emission control system has been successfully operated to control wine fermentation emissions at the CCWS facility for two full fermentation seasons. The control system has been operated on a frequent basis, with nearly continuous operation during the majority of fermentation operations. When the control system was operated, it system achieved an average of 4.6 pounds of ethanol capture and control per day. Based on this information, the EcoPAS control system has achieved a proven track record of reliability for controlling ethanol emissions from wine fermentation. Therefore, the EcoPAS control system is considered achieved in practice emission control technology for wine fermentation operations at new and modified wineries.

Oversight Agency Input:

On September 30, 2016, the U.S. EPA Region IX sent a letter to the San Joaquin Valley Air Pollution Control District (SJVAPCD) providing comments on four proposed winery permitting actions within the SJVAPCD jurisdiction. These permitting actions triggered BACT requirements under SJVAPCD's new source review regulations. SJVAPCD's BACT requirements are essentially equivalent to the federal requirements for Lowest Achievable Emission Rate (LAER). In their letter, the U.S. EPA states: "EPA believes the District's analyses for the four proposed permits identified above do not satisfactorily demonstrate LAER. Please see Enclosures 1 and 2 for more details. Consequently, EPA believes the District's proposed permits do not implement LAER as required by Rule 2201."

Enclosure 1 of the U.S. EPA's September 30, 2016 letter includes the following comments regarding the achieved in practice status of the emission control technologies in use in Santa Barbara County:

> "The fact that the source was not required to achieve emission reductions to satisfy a new source review (NSR) requirement and instead used the controls to avoid an applicable requirement, does not factor into the evaluation of whether a specific emission reduction rate has been achieved in practice."
>
> "EPA has reviewed the records from CCWS regarding their wine fermentation operations and using mass balance calculations have determined that the use of add-on controls during portions of the fermentation process have resulted in emission reductions of 76.6%. The demonstrated use of add-on controls to reduce emissions by 76.6% represents the lowest achievable emission rate for wine fermentation operations."
>
> "The Terravant Winery was issued a permit to construct and operate a packed bed water scrubber in 2008 to control emissions from their wine fermentation operations... The facility has been able to achieve a minimum control efficiency of at least 47.6% over the seven seasons it has been in use. Therefore, for wine fermentation tanks, EPA believes that the lowest achievable emission rate which has been AIP, based on the demonstrated emission reductions achieved at the Terravant facility, is a 47.6% control efficiency, as measured by Santa Barbara County APCD source testing."

Based on these comments, it is clear that the U.S. EPA considers the three technologies analyzed in this memo to be achieved in practice emission control technologies for wine fermentation. The comments also support the guidance from District Policy and Procedure No. 6100.064.2017 that an emission control technology does not need to have been a previous NAR BACT requirement to be achieved in practice.

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These determinations made by the U.S. EPA, an oversight agency of the District, are in agreement with the determinations made by this memo.

Conclusion:

Based on the above analyses and oversight agency input, the packed bed scrubber system in use at Terravant Wine Company and the NoMoVo and EcoPAS control systems in use at Central Coast Wine Services are achieved in practice emission control technologies for wine fermentation operations.

Attachments:

1. Terravant Packed Bed Scrubber Pictures
2. Terravant Packed Bed Scrubber 2015 - 2016 Source Test Results
3. NoMoVo Pictures
4. EcoPAS Pictures
5. CCWS Control System Operation Calendars
6. September 30, 2016 U.S. EPA Letter to SJVAPCD

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Attachment 1 – Terravant Packed Bed Scrubber Pictures

Packed bed scrubber

Packed bed scrubber and UV treatment lamp

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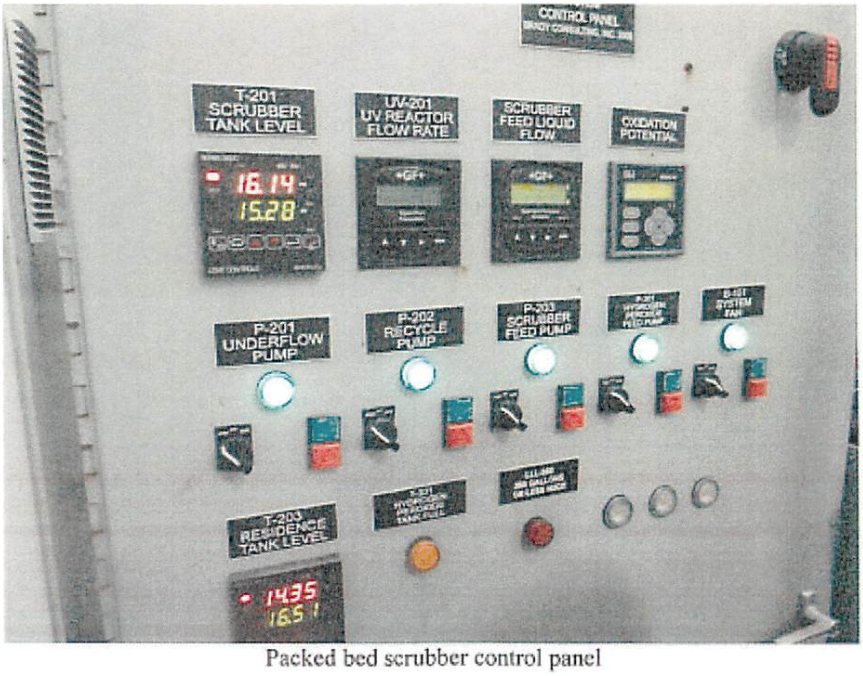
Attachment 1 – Terravant Packed Bed Scrubber Pictures

Packed bed scrubber blower



Packed bed scrubber control panel

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Attachment 1 – Terravant Packed Bed Scrubber Pictures

Wine fermentation tanks and fermentation room ventilation ducting

Wine fermentation tanks and fermentation room ventilation ducting

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Attachment 2 – Terravant Source Test Results

Terravant Winery
Buellton Facility ID 10918
Inlet & Outlet

Project 228-9302A
September 4, 2015

Pollutant	ppmv	lb/hr	lb/day	tons/year	Permit Limits
ROC	23.98	1.44	34.63		
Scrubber	25.99	1.56	37.50		
Outlet	24.41	1.45	34.69		54.53 lb/day
Mean	24.79	1.48	35.60	1.77	9.89 tons/year
Ethanol	20.00	1.19	28.59		
Scrubber	22.17	1.33	31.83		
Outlet	20.83	1.23	29.59		
Mean	21.00	1.25	30.00		
Ethanol	162.79	9.70	232.73		
Scrubber	138.85	8.31	199.34		
Inlet	101.45	6.00	144.09		
Mean	134.36	8.00	192.05		
	Inlet lb/hr	Outlet lb/hr		% Removal	
Ethanol	9.70	1.10		87.7	
Scrubber	8.31	1.33		84.0	
Efficiency	0.00	1.23		79 5	
Mean	8.00	1.25		83.7	

Terravant Winery
Lompoc Facility
Inlet & Outlet

Project 228-9302B
September 25, 2015

Pollutant	ppmv	lb/hr	lb/day	tons/year	Permit Limits
ROC	33.23	2.06	49.40		
Scrubber	34.42	2.03	48.75		
Outlet	33.60	2.02	48.44		54.53 lb/day
Mean	33.75	2.04	48.87	2.31	9.89 tons/year
Ethanol	27.38	1.59	38.13		
Scrubber	30.88	1.81	43.33		
Outlet	29.99	1.77	42.47		
Mean	29.41	1.72	41.31		
Ethanol	231.06	13.42	321.97		
Scrubber	212.47	12.42	298.11		
Inlet	202.17	11.93	286.29		
Mean	215.23	12.59	302.12		
	Inlet lb/hr	Outlet lb/hr		% Removal	
Ethanol	13.42	1.59		88.2	
Scrubber	12.42	1.81		85.5	
Efficiency	11.93	1.77		85.2	
Mean	12.59	1.72		86.3	

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Attachment 2 – Terravant Source Test Results

Terravant Wine Company
Buellton Facility ID 10918
Inlet & Outlet

Project 228-9789A
September 13, 2016
PTO No. 14626

Pollutant	ppmv	lb/hr	lb/day	tons/year	Permit Limits
ROC	10.63	0.53	12.80		
Scrubber	13.72	0.69	16.52		
Outlet	13.99	0.70	16.75		54.53 lb/day
Mean	12.78	0.64	15.35	4.29	9.89 tons/year
Ethanol	7.77	0.41	9.78		
Scrubber	9.87	0.52	12.44		
Outlet	9.97	0.52	12.53		
Mean	9.20	0.48	11.58		
Ethanol	43.97	2.30	55.32		
Scrubber	50.24	2.64	63.33		
Inlet	50.12	2.63	63.01		
Mean	48.11	2.52	60.55		
	Inlet lb/hr	Outlet lb/hr		% Removal	
Ethanol	2.30	0.41		82.3	
Scrubber	2.64	0.52		80.4	
Efficiency	2.63	0.52		80.1	
Mean	2.52	0.48		80.9	

Terravant Wine Company
Buellton Facility ID 10918
Inlet & Outlet

Project 228-9789B
October 4, 2016
PTO No. 14626

Pollutant	ppmv	lb/hr	lb/day	tons/year	Permit Limits
ROC	22.28	1.00	23.98		
Scrubber	21.11	1.04	24.88		
Outlet	33.32	1.63	39.14		54.53 lb/day
Mean	25.57	1.22	29.34	5.42	9.89 tons/year
Ethanol	14.61	0.71	16.93		
Scrubber	16.55	0.84	20.09		
Outlet	27.15	1.36	32.72		
Mean	19.44	0.97	23.25		
Ethanol	101.46	4.90	117.55		
Scrubber	142.39	7.20	172.88		
Inlet	115.13	5.78	138.74		
Mean	119.66	5.96	143.06		
	Inlet lb/hr	Outlet lb/hr		% Removal	
Ethanol	4.90	0.71		85.6	
Scrubber	7.20	0.84		88.4	
Efficiency	5.78	1.36		76.4	
Mean	5.96	0.97		83.5	

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Attachment 3 – NoMoVo Pictures

NoMoVo control systems (2)

NoMoVo control systems (2)

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Attachment 3 – NoMoVo Pictures

NoMoVo control system with NoMoVo piping manifold

Closed top fermentation tanks with NoMoVo piping manifold

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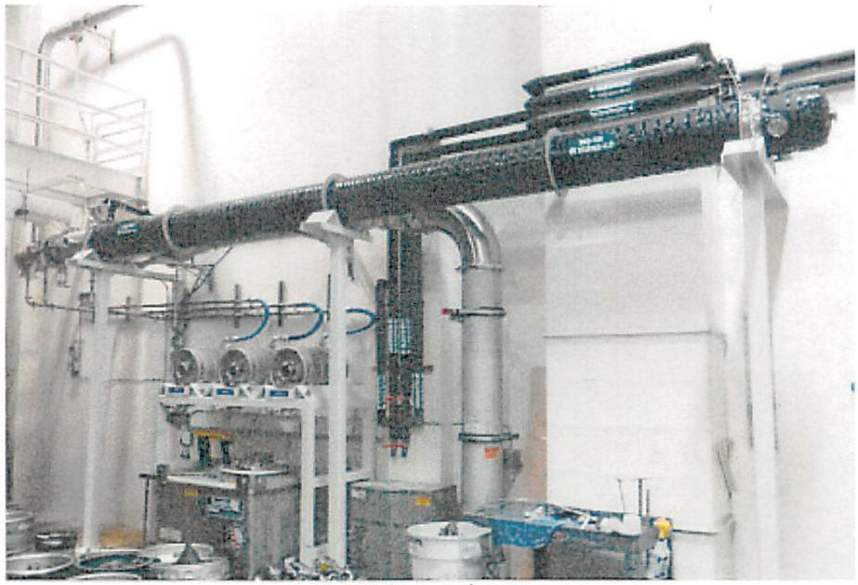
Attachment 4 – EcoPAS Pictures



EcoPAS control system

EcoPAS control system and condensate storage tanks

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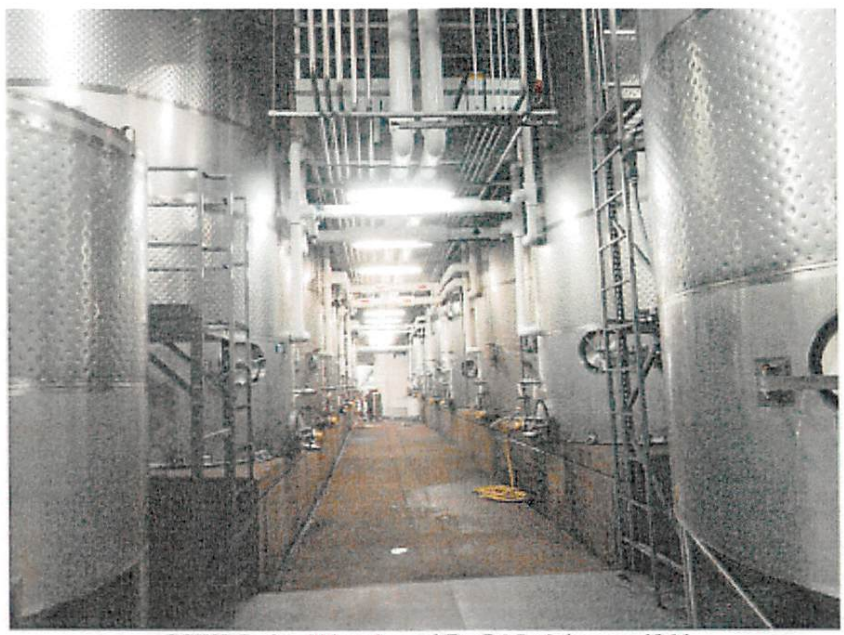
Attachment 4 – EcoPAS Pictures

CCWS Series 400 tanks and EcoPAS piping manifold



CCWS Series 400 tanks and EcoPAS piping manifold

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Attachment 4 – EcoPAS Pictures

Closed top fermentation tanks with EcoPAS piping manifold

Closed top fermentation tank with EcoPAS piping

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Attachment 5 – CCWS Control System Use Calendars

2013 Fermentation Season

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				August 1	2	3
4	5	6	7	8	9	10
11	12	13	14 Fermentation Start	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
September 1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30 NoMoVo 1	October 1	2	3 NoMoVo 1	4 NoMoVo 1	5 NoMoVo 1
6 NoMoVo 1	7	8 NoMoVo 1	9 NoMoVo 1	10 NoMoVo 1	11 NoMoVo 1	12 NoMoVo 1
13 NoMoVo 1	14 NoMoVo 1	15 NoMoVo 1	16 NoMoVo 1	17 NoMoVo 1	18 NoMoVo 1	19 NoMoVo 1
20 NoMoVo 1	21 NoMoVo 1	22 NoMoVo 1	23 NoMoVo 1	24 NoMoVo 1	25 NoMoVo 1	26
27	28 NoMoVo 1	29	30	31	November 1	2
3	4	5	6	7	8	9
10	11	12 Fermentation End	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

2014 Fermentation Season

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					August 1	2
3	4	5	6	7 Fermentation Start	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	September 1	2	3	4	5 NoMoVo 1	6 NoMoVo 1
7 NoMoVo 1	8 NoMoVo 1	9 NoMoVo 1	10 NoMoVo 1	11 NoMoVo 1	12 NoMoVo 1	13 NoMoVo 1
14 NoMoVo 1	15 NoMoVo 1	16 NoMoVo 1	17 NoMoVo 1	18 NoMoVo 1	19 NoMoVo 1	20 NoMoVo 1
21 NoMoVo 1	22 NoMoVo 1	23 NoMoVo 1	24 NoMoVo 1	25 NoMoVo 1	26 NoMoVo 1	27 NoMoVo 1
28 NoMoVo 1	29 NoMoVo 1	30 NoMoVo 1	October 1 NoMoVo 1	2 NoMoVo 1	3 NoMoVo 1	4 NoMoVo 1
5	6 NoMoVo 1	7 NoMoVo 1	8 NoMoVo 1	9 NoMoVo 1	10 NoMoVo 1	11 NoMoVo 1
12 NoMoVo 1	13 NoMoVo 1	14 NoMoVo 1	15 NoMoVo 1	16 NoMoVo 1	17 NoMoVo 1	18 NoMoVo 1
19 NoMoVo 1	20 NoMoVo 1	21 NoMoVo 1	22 NoMoVo 1	23 Fermentation End	24	25
26	27	28	29	30	31	

ATTACHMENT E
Achieved in Practice Determination for Wine Fermentation Emission Control Technologies Memo

Attachment 5 – CCWS Control System Use Calendars

2015 Fermentation Season

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						August 1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17 Fermentation Start	18	19	20	21	22
23	24 NoMoVo 2	25 NoMoVo 2	26 NoMoVo 2	27 NoMoVo 2	28 NoMoVo 2	29 NoMoVo 2 EcoPAS
30 NoMoVo 2	31 NoMoVo 2 EcoPAS	September 1 NoMoVo 1 NoMoVo 2 EcoPAS	2 NoMoVo 1 NoMoVo 2 EcoPAS	3 NoMoVo 1 NoMoVo 2 EcoPAS	4 NoMoVo 1 NoMoVo 2 EcoPAS	5 NoMoVo 1 NoMoVo 2
6 NoMoVo 1 NoMoVo 2 EcoPAS	7 NoMoVo 1 NoMoVo 2 EcoPAS	8 NoMoVo 1 NoMoVo 2 EcoPAS	9 NoMoVo 1 NoMoVo 2 EcoPAS	10 NoMoVo 1 NoMoVo 2 EcoPAS	11 NoMoVo 1 NoMoVo 2 EcoPAS	12 NoMoVo 1 NoMoVo 2 EcoPAS
13 NoMoVo 1 NoMoVo 2 EcoPAS	14 NoMoVo 1 NoMoVo 2 EcoPAS	15 NoMoVo 1 NoMoVo 2 EcoPAS	16 NoMoVo 1 NoMoVo 2 EcoPAS	17 NoMoVo 1 NoMoVo 2 EcoPAS	18 NoMoVo 1 NoMoVo 2 EcoPAS	19 NoMoVo 1 NoMoVo 2 EcoPAS
20 NoMoVo 1 NoMoVo 2 EcoPAS	21 NoMoVo 1 NoMoVo 2 EcoPAS	22 NoMoVo 1 NoMoVo 2 EcoPAS	23 NoMoVo 1 NoMoVo 2 EcoPAS	24 NoMoVo 1 NoMoVo 2 EcoPAS	25 NoMoVo 1 NoMoVo 2 EcoPAS	26 NoMoVo 1 NoMoVo 2 EcoPAS
27 NoMoVo 1 NoMoVo 2 EcoPAS	28 NoMoVo 1 NoMoVo 2 EcoPAS	29 NoMoVo 1 NoMoVo 2 EcoPAS	30 NoMoVo 1 NoMoVo 2 EcoPAS	October 1 NoMoVo 1 NoMoVo 2 EcoPAS	2 NoMoVo 1 NoMoVo 2 EcoPAS	3 NoMoVo 1 NoMoVo 2 EcoPAS
4 NoMoVo 1 NoMoVo 2 EcoPAS	5 NoMoVo 1 NoMoVo 2 EcoPAS	6 NoMoVo 1 NoMoVo 2 EcoPAS	7 NoMoVo 1 NoMoVo 2 EcoPAS	8 NoMoVo 1	9	10
11	12 NoMoVo 1 NoMoVo 2 EcoPAS	13 NoMoVo 1 EcoPAS	14 NoMoVo 1 EcoPAS	15	16	17
18	19	20	21 Fermentation End	22	23	24
25	26	27	28	29	30	31

ATTACHMENT E
Achieved in Practice Determination for Wine Fermentation Emission Control Technologies Memo

Attachment 5 – CCWS Control System Use Calendars

2016 Fermentation Season

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	August 1	2	3	4	5	6
7	8	9	10	11	12	13
14	15 Fermentation Start	16	17	18	19	20
21	22	23	24 EcoPAS	25 EcoPAS	26 EcoPAS	27
28	29 EcoPAS	30 EcoPAS	31 EcoPAS	September 1 EcoPAS	2 EcoPAS	3 EcoPAS
4	5 EcoPAS	6 EcoPAS	7 EcoPAS	8 EcoPAS	9 EcoPAS	10 EcoPAS
11	12 EcoPAS	13 NoMoVo 1 EcoPAS	14 NoMoVo 1 EcoPAS	15 NoMoVo 1 EcoPAS	16 NoMoVo 1 EcoPAS	17 NoMoVo 1 EcoPAS
18 NoMoVo 1 EcoPAS	19 NoMoVo 1 EcoPAS	20 NoMoVo 1 NoMoVo 2 EcoPAS	21 NoMoVo 1 NoMoVo 2 EcoPAS	22 NoMoVo 1 NoMoVo 2 EcoPAS	23 NoMoVo 1 NoMoVo 2 EcoPAS	24 NoMoVo 1 NoMoVo 2 EcoPAS
25	26 NoMoVo 1 NoMoVo 2 EcoPAS	27 NoMoVo 1 NoMoVo 2 EcoPAS	28 NoMoVo 1 NoMoVo 2 EcoPAS	29 NoMoVo 1 NoMoVo 2 EcoPAS	30 NoMoVo 1 NoMoVo 2 EcoPAS	October 1 NoMoVo 1 NoMoVo 2 EcoPAS
2 NoMoVo 1 NoMoVo 2 EcoPAS	3 NoMoVo 1 NoMoVo 2 EcoPAS	4 NoMoVo 1 NoMoVo 2 EcoPAS	5 NoMoVo 1 NoMoVo 2 EcoPAS	6 NoMoVo 1 NoMoVo 2 EcoPAS	7 NoMoVo 1 NoMoVo 2 EcoPAS	8 NoMoVo 1 NoMoVo 2 EcoPAS
9 NoMoVo 1 NoMoVo 2 EcoPAS	10 NoMoVo 1 NoMoVo 2 EcoPAS	11 NoMoVo 1 NoMoVo 2 EcoPAS	12 NoMoVo 1 NoMoVo 2 EcoPAS	13 NoMoVo 1 NoMoVo 2 EcoPAS	14 NoMoVo 1 NoMoVo 2 EcoPAS	15 NoMoVo 1 NoMoVo 2 EcoPAS
16 NoMoVo 1 NoMoVo 2 EcoPAS	17 NoMoVo 1 NoMoVo 2 EcoPAS	18 NoMoVo 1 NoMoVo 2 EcoPAS	19 NoMoVo 1 NoMoVo 2 EcoPAS	20 NoMoVo 1 NoMoVo 2 EcoPAS	21 NoMoVo 1 NoMoVo 2 EcoPAS	22 NoMoVo 1 NoMoVo 2 EcoPAS
23 NoMoVo 1 NoMoVo 2 EcoPAS	24 NoMoVo 1 NoMoVo 2 EcoPAS	25 NoMoVo 1 NoMoVo 2 EcoPAS	26 NoMoVo 1 NoMoVo 2 EcoPAS	27 NoMoVo 1 NoMoVo 2 EcoPAS	28 NoMoVo 1 NoMoVo 2 EcoPAS	29 NoMoVo 1 NoMoVo 2 EcoPAS
30 NoMoVo 1 NoMoVo 2 EcoPAS	31 NoMoVo 1 NoMoVo 2 EcoPAS	November 1 NoMoVo 1 NoMoVo 2 EcoPAS Fermentation End	2	3	4	5

ATTACHMENT E
Achieved in Practice Determination for Wine Fermentation Emission Control Technologies Memo

Attachment 6 – September 30, 2016 U.S. EPA Letter to SJVAPCD

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 9
75 Hawthorne Street
San Francisco, CA 94105

9-30-16

Arnaud Marjollet
Director of Permit Services
San Joaquin Valley Air Pollution Control District
1990 East Gettysburg Avenue
Fresno, CA 93726

Dear Mr. Marjollet,

Thank you for the opportunity to provide comments on proposed permit actions for the following four winery facilities:

1. Bear Creek Winery, located in Lodi, CA (Project No. N-1153192): The proposed permits are for the installation of four 160,000 gallon and four 51,000 gallon stainless steel, insulated wine tanks to be used to ferment and store white and red wines.

2. CBUS Ops Inc. (dba Woodbridge Winery), located in Woodbridge, CA (Project No. N-1143210): The proposed permits are for the installation of twenty-four 108,000 gallon stainless steel, enclosed top, insulated wine fermentation and storage tanks.

3. Delicato Vineyards, located in Manteca, CA (Project No. N-1152244): The proposed permits are for the installation of 128 new insulated, stainless steel wine fermentation and storage tanks, ranging in size from 50,000 to 154,000 gallons.

4. E&J Gallo Winery, located in Livingston, CA (Project No. N-1142303): The proposed ATC is to modify the permits by establishing a combined specific limiting condition for VOC emissions as well as incorporate some permit units with existing ATCs into the existing Title V permit.

For each of these projects, the District has determined that the project will result in a federal major modification, and therefore triggers the requirement to use Best Available Control Technology under the District's regulations (SJV BACT), as defined in Rule 2201, which is equivalent to the federal requirement for Lowest Achievable Emission Rate (LAER). SJV BACT requires "the most stringent emission limitation which is achieved in practice by such class or category of source." The District has provided its BACT analysis in the Appendices of each evaluation and concludes that maintaining the average fermentation temperature below 95°F satisfies the SJV BACT requirement for wine fermentation tanks. Each evaluation also references the District's Achieved in Practice Analysis Memo, revised on May 9, 2016, which evaluates wine fermentation operations at other wineries to determine if any are using an achieved in practice (AIP) technology to reduce emission reductions from wine fermentation operations.

ATTACHMENT E
Achieved in Practice Determination for Wine Fermentation Emission Control Technologies Memo

Attachment 6 – September 30, 2016 U.S. EPA Letter to SJVAPCD

The District's LAER (SJV BACT) determinations for these proposed permits are essentially the same as the District's determinations for winery permits EPA has previously reviewed. Specifically, EPA provided detailed comments to the District regarding the availability of add-on controls for wine fermentation tanks in four letters dated October 21, 2013, May 5, 2014, June 16, 2014 and May 8, 2015. For the reasons discussed in our previous comment letters, EPA believes the District's analyses for the four proposed permits identified above do not satisfactorily demonstrate LAER. Please see Enclosures 1 and 2 for more details. Consequently, EPA believes the District's proposed permits do not implement LAER as required by Rule 2201.

Because we are concerned that the proposed permits may not ensure compliance with LAER, we are evaluating whether it is necessary to issue a formal objection to the permits. The comment period for the Bear Creek Winery permit closes on October 9, 2016, by which time EPA will decide whether to object. Therefore, EPA requests that the District confer with EPA, regarding LAER for the wine fermentation, to discuss options that could resolve this issue without a formal objection by EPA. Please contact me at your earliest convenience but no later than October 6, 2016 to discuss this matter. I can be reached at 415 972-3974 or at rios.gerardo@epa.gov.

Sincerely,

Gerardo C. Rios
Chief, Permits Office
Air Division

Enclosures

cc: Tung Le, CARB

ATTACHMENT E
Achieved in Practice Determination for Wine Fermentation Emission Control Technologies Memo

Attachment 6 – September 30, 2016 U.S. EPA Letter to SJVAPCD

Enclosure 1 EPA Comments

Bear Creek Winery, Project No. N-1153192; CBUS Ops Inc. (dba Woodbridge Winery), Project No. N-1143210; Delicato Vineyards, Project No. N-1152244; E&J Gallo Winery, Project No. N-1142303

While the District evaluates the use of add-on controls at several winery facilities throughout the state, our comments are focused on the use of controls at two specific wineries, Central Coast Winery Services (CCWS) and Terravant Winery, both located in Santa Barbara, California.

The Central Coast Winery Service (CCWS) was issued a permit to construct and operate a (will insert name of control device from SB permit, rather than name vendor) in 2013 to control emissions from a portion of their wine fermentation operations. This equipment has been leased by the facility and has been in use during each crush season since 2103 (three seasons). The facility proposed use of this control equipment, not to meet any applicable BACT/LAER requirements, but instead to ensure their daily emissions remained below 55 lbs/day, which is the emission threshold for triggering BACT and offset requirements in the Santa Barbara County Air Pollution Control District (APCD). The fact that the source was not required to achieve emission reductions to satisfy a new source review (NSR) requirement and instead used the controls to avoid an applicable requirement, does not factor into the evaluation of whether a specific emission reduction rate has been achieved in practice. Similarly, the fact that the source only used the equipment as needed to comply with their 55 lb/day emission limit, does not affect whether a certain control rate has been AIP. EPA has reviewed the records from CCWS regarding their wine fermentation operations and using mass balance calculations have determined that the use of add-on controls during portions of the fermentation process have resulted in emission reductions of 76.6%. The demonstrated use of add-on controls to reduce emissions by 76.6% represents the lowest achievable emission rate for wine fermentation operations. The District has raised a concern that an ATC issued by the Santa Barbara County APCD to require the use of add-on controls to satisfy a BACT requirement was cancelled by the source, and thus cannot be relied on when considering whether the use of add-on controls at this facility have been AIP. While it is correct that an ATC allowing emissions at the facility to exceed 55lbs/day (thus triggering BACT) was cancelled, this did not affect the use of otherwise permitted control devices to reduce emissions from their wine fermentation operations. Lastly, EPA wants to address the District's concern that the control equipment at this facility has not been formally source tested. First we note that this control equipment was previously source tested by the Bay Area Air Quality Management District while in use at another facility and was able to achieve a control efficiency of greater than 99% using a direct measurement inlet and outlet source test. Second, due to the batch nature of the operation and the non-steady state of the wine fermentation process, source testing may not be the best way to accurately measure achieved emission reductions. Instead, emission calculations using mass-balance may be a better way to measure the actual emissions reductions achieved by the control device. Mass-balance calculations were used to determine the overall control efficiency of 76.6% for the batch wine fermentation process at this facility. Therefore, this same approach should be used to apply LAER to each of the proposed permits for wine fermentation operations.

The Terravant Winery was issued a permit to construct and operate a packed bed water scrubber in 2008 to control emissions from their wine fermentation operations. This custom designed control equipment is owned by the facility and has been in use during every crush season since 2008 (7 seasons). Similar to the Terravant facility, the control equipment was not installed to meet any applicable BACT/LAER requirements, but to comply with a daily emission limit of 55 lbs/day. As stated above in our summary of the Terravant operation, the fact that these controls were not required to meet BACT/LAER, or

ATTACHMENT E
Achieved in Practice Determination for Wine Fermentation Emission Control Technologies Memo

Attachment 6 – September 30, 2016 U.S. EPA Letter to SJVAPCD

required to be used at all times does not affect a determination of whether the use of such controls has been achieved in practice. While the installed control equipment was expected to achieve a 95% control efficiency, the source has only been able to maintain a 49% control efficiency on a consistent basis according to source test reports. The Santa Barbara County APCD has indicated that most issues related to the achieved control efficiency are likely due to operator error, given that water scrubbers are a well-established, high-efficiency control device for controlling ethanol emissions. For the purposes of evaluating whether the use of this control equipment can be considered AIP, the evaluation criteria is whether a source was able to achieve a certain level of control over a reasonable operating period. The District and EPA have already agreed that the reasonable operating period is a complete crush season. The facility has been able to achieve a minimum control efficiency of at least 47.6% over the seven seasons it has been in use. Therefore, for wine fermentation tanks, EPA believes that the lowest achievable emission rate which has been AIP, based on the demonstrated emission reductions achieved at the Terravant facility, is a 47.6% control efficiency, as measured by Santa Barbara County APCD source testing.

ATTACHMENT F
September 30, 2016 U.S. EPA Letter to SJVAPCD

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 9
75 Hawthorne Street
San Francisco, CA 94105

9-30-16

Arnaud Marjollet
Director of Permit Services
San Joaquin Valley Air Pollution Control District
1990 East Gettysburg Avenue
Fresno, CA 93726

Dear Mr. Marjollet,

Thank you for the opportunity to provide comments on proposed permit actions for the following four winery facilities:

1. Bear Creek Winery, located in Lodi, CA (Project No. N-1153192): The proposed permits are for the installation of four 160,000 gallon and four 51,000 gallon stainless steel, insulated wine tanks to be used to ferment and store white and red wines.

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For each of these projects, the District has determined that the project will result in a federal major modification, and therefore triggers the requirement to use Best Available Control Technology under the District's regulations (SJV BACT), as defined in Rule 2201, which is equivalent to the federal requirement for Lowest Achievable Emission Rate (LAER). SJV BACT requires "the most stringent emission limitation which is achieved in practice by such class or category of source." The District has provided its BACT analysis in the Appendices of each evaluation and concludes that maintaining the average fermentation temperature below 95°F satisfies the SJV BACT requirement for wine fermentation tanks. Each evaluation also references the District's Achieved in Practice Analysis Memo, revised on May 9, 2016, which evaluates wine fermentation operations at other wineries to determine if any are using an achieved in practice (AIP) technology to reduce emission reductions from wine fermentation operations.

ATTACHMENT F
September 30, 2016 U.S. EPA Letter to SJVAPCD

The District's LAER (SJV BACT) determinations for these proposed permits are essentially the same as the District's determinations for winery permits EPA has previously reviewed. Specifically, EPA provided detailed comments to the District regarding the availability of add-on controls for wine fermentation tanks in four letters dated October 21, 2013, May 5, 2014, June 16, 2014 and May 8, 2015. For the reasons discussed in our previous comment letters, EPA believes the District's analyses for the four proposed permits identified above do not satisfactorily demonstrate LAER. Please see Enclosures 1 and 2 for more details. Consequently, EPA believes the District's proposed permits do not implement LAER as required by Rule 2201.

Because we are concerned that the proposed permits may not ensure compliance with LAER, we are evaluating whether it is necessary to issue a formal objection to the permits. The comment period for the Bear Creek Winery permit closes on October 9, 2016, by which time EPA will decide whether to object. Therefore, EPA requests that the District confer with EPA, regarding LAER for the wine fermentation, to discuss options that could resolve this issue without a formal objection by EPA. Please contact me at your earliest convenience but no later than October 6, 2016 to discuss this matter. I can be reached at 415 972-3974 or at rios.gerardo@epa.gov.

Sincerely,

Gerardo C. Rios
Chief, Permits Office
Air Division

Enclosures

cc: Tung Le, CARB

ATTACHMENT F
September 30, 2016 U.S. EPA Letter to SJVAPCD

Enclosure 1 EPA Comments

Bear Creek Winery, Project No. N-1153192; CBUS Ops Inc. (dba Woodbridge Winery), Project No. N-1143210; Delicato Vineyards, Project No. N-1152244; E&J Gallo Winery, Project No. N-1142303

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ATTACHMENT F
September 30, 2016 U.S. EPA Letter to SJVAPCD

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ATTACHMENT G
October 7, 2016 U.S. EPA Letter to SJVAPCD

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 9
75 Hawthorne Street
San Francisco, CA 94105

October 7, 2016

David Warner
Deputy Air Pollution Control Officer
San Joaquin Valley Air Pollution Control District
1990 East Gettysburg Avenue
Fresno, CA 93726

Dear Mr. Warner:

We are writing to acknowledge receipt of the letter from San Joaquin Valley Air Pollution Control District (the District) dated October 7, 2016, regarding the following four winery permit projects: Bear Creek Winery (Project No. N-1153192), CBUS Ops Inc. (dba Woodbridge Winery) (Project No. N-1143210), Delicato Vineyards (Project No. N-1152244), E&J Gallo Winery (Project No. N-1142303).

Thank you for your confirmation that the District will not proceed with the issuance of a Certificate of Conformity (COC) for any of these proposed permit actions. In the future, each of these sources will be required to submit a new title V significant revision application to modify their current title V permit and the District will be required to submit for EPA review a proposed significant title V revision in accordance with the requirements of District Rule 2520 – Federally Mandated Operating Permits. We appreciate your commitment to work with us to resolve the Lowest Achievable Emission Rate (LAER) issue and ensure the final title V operating permits comply with all applicable requirements and provisions of Rule 2520.

As stated in our September 30, 2016 letter regarding these same four proposed permit actions, EPA remains concerned that the control requirements contained in the proposed permits do not represent "Best Available Control Technology" (BACT), as required by SIP-approved SJV Rule 2201, section 4.1.3. The definition of BACT in SJV Rule 2201, section 3.10 is equivalent to federal LAER. Accordingly, until this issue regarding LAER is resolved, construction under these proposed permits may be subject to enforcement action.

We are committed to working with the District to ensure that the final permits are consistent with all applicable requirements. I look forward to our discussions. In the meantime, feel free to contact me at 415-972-3974.

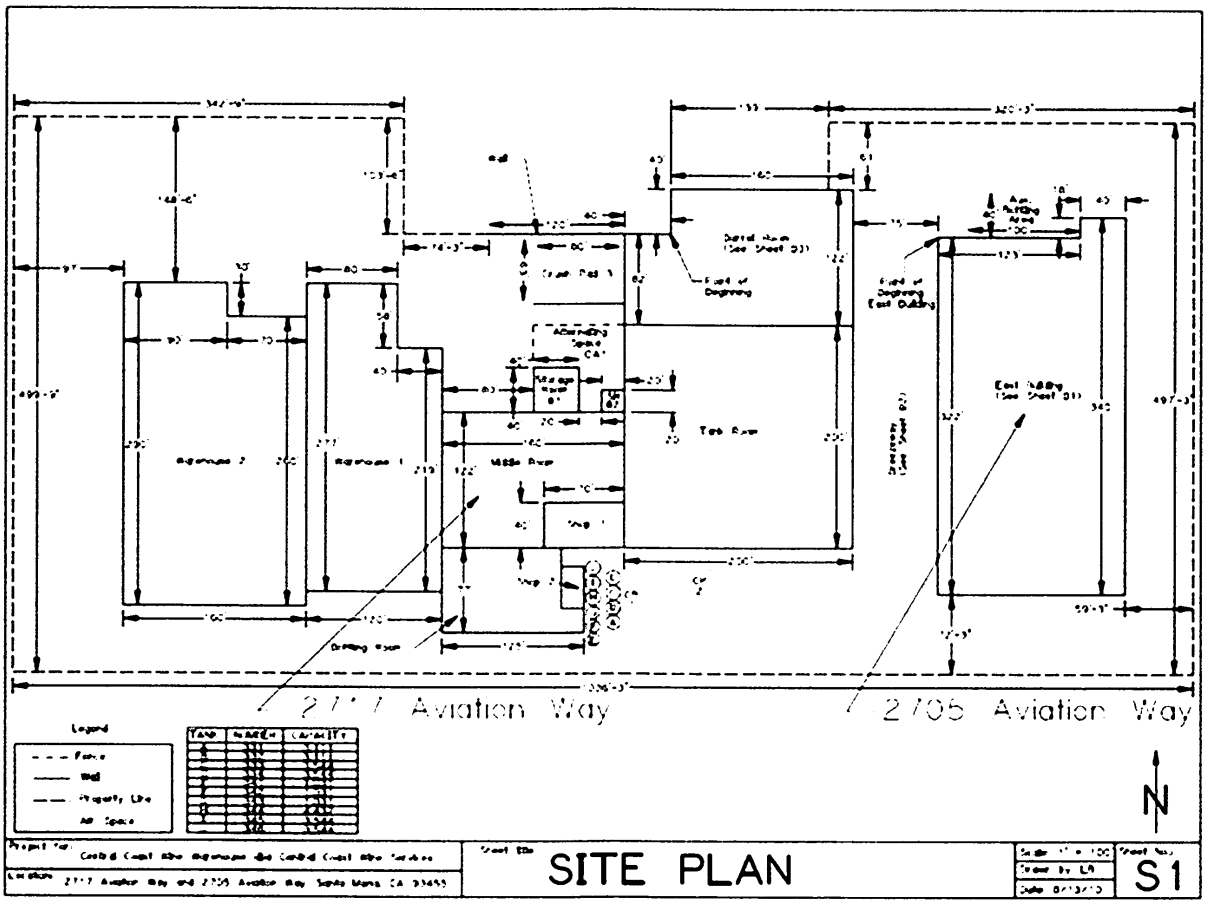
Sincerely,

Gerardo C. Rios
Chief, Permits Office
Air Division

cc: Tung Le, CARB

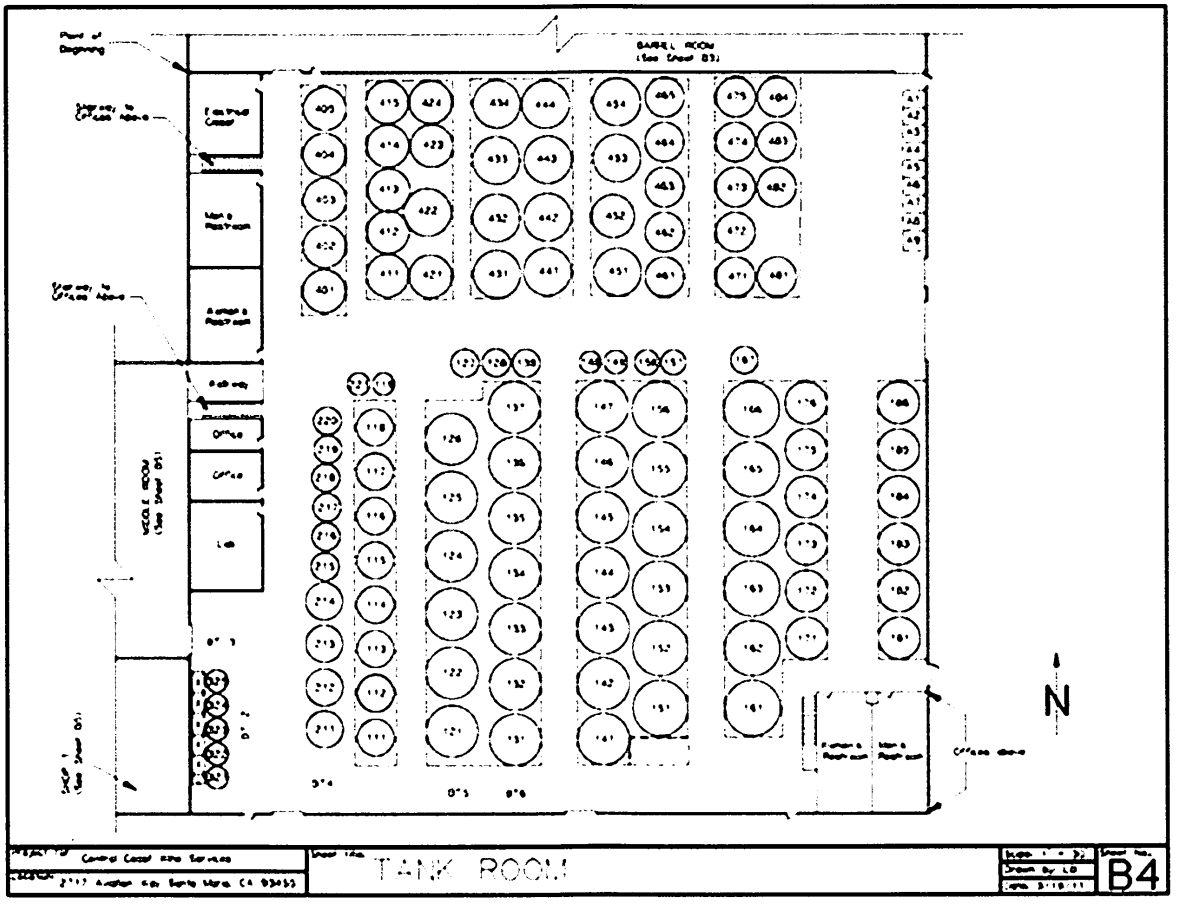
Authority to Construct 15044

ATTACHMENT H
Facility Maps



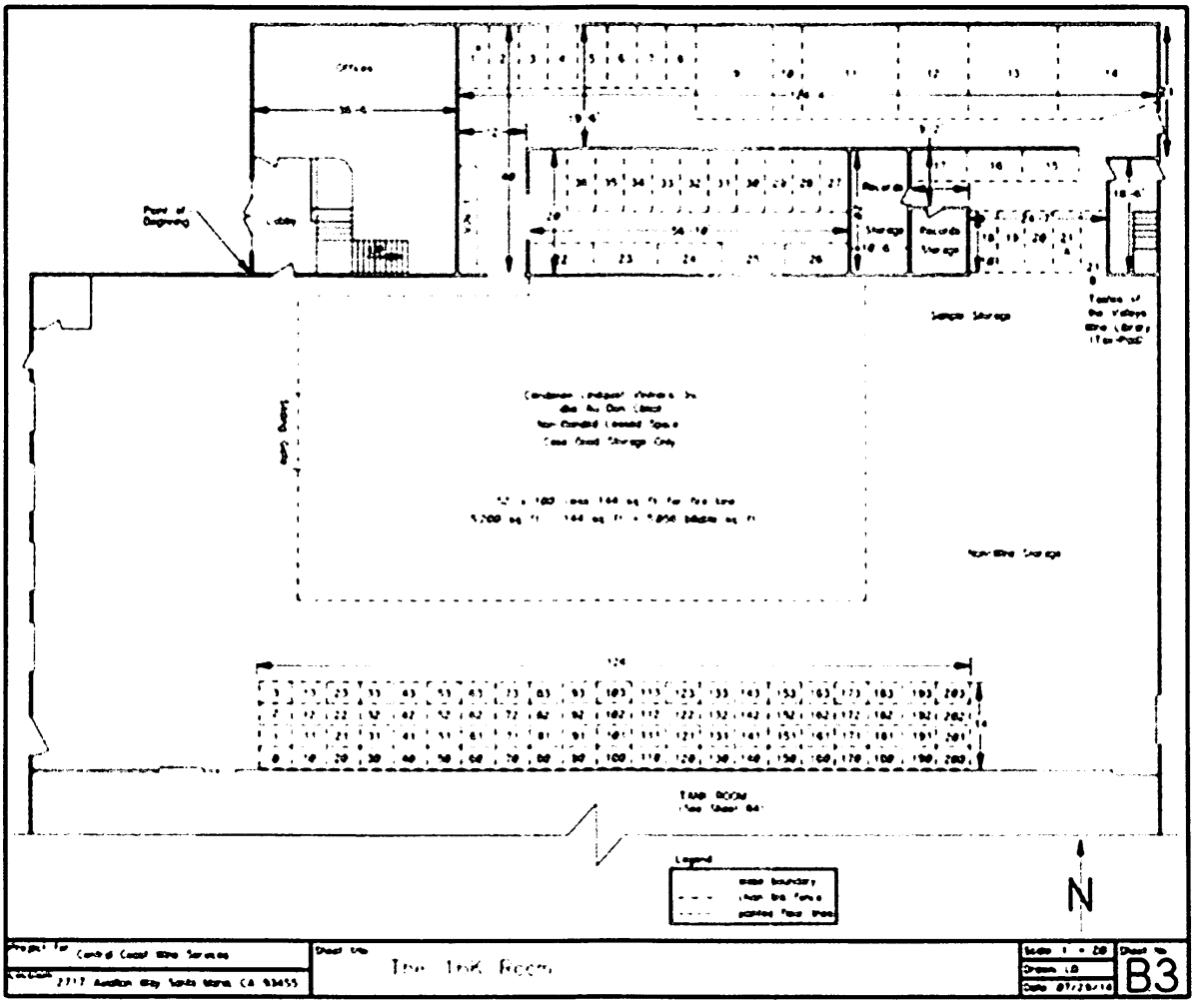
Authority to Construct 15044

ATTACHMENT H
Facility Maps



Authority to Construct 15044

ATTACHMENT H
Facility Maps



ATTACHMENT I
Fee Statement

FEE STATEMENT
ATC No. 15044
FID: 11042 Central Coast Wine Services / SSID: 10834

Santa Barbara County
Air Pollution Control District

Device Fee

Device No.	Device Name	Fee Schedule	Qty of Fee Units	Fee per Unit	Fee Units	Max or Min. Fee Apply?	Number of Same Devices	Pro Rate Factor	Device Fee	Penalty Fee?	Fee Credit	Total Fee per Device
388059	Steel Tanks 401-405, 411-415	A6	14.980	3.95	Per 1000 gallons	Min	10	1.000	684.70	0.00	0.00	684.70
388060	Steel Tanks 421, 423-424, 452	A6	14.980	3.95	Per 1000 gallons	Min	4	1.000	273.88	0.00	0.00	273.88
388061	Steel Tanks 422, 431-434, 441-444, 451, 453-454	A6	20.736	3.95	Per 1000 gallons	No	12	1.000	982.89	0.00	0.00	982.89
388062	Steel Tanks 461-465, 471-475, 481-484	A6	7.527	3.95	Per 1000 gallons	Min	14	1.000	958.58	0.00	0.00	958.58
386512	NoMoVo Wine Emission Capture System	A1.a	1.000	68.92	Per equipment	No	6	1.000	413.52	0.00	0.00	413.52
388029	EcoPAS System	A1.a	1.000	68.92	Per equipment	No	1	1.000	68.92	0.00	0.00	68.92
388032	Condensate Collection Vessels	A6	0.015	3.95	Per 1000 gallons	Min	3	1.000	205.41	0.00	0.00	205.41
388033	Stainless Steel Tote	A6	0.250	3.95	Per 1000 gallons	Min	1	1.000	68.47	0.00	0.00	68.47
388058	Barrel Storage Room	A1.a	1.000	68.92	Per equipment	No	1	1.000	68.92	0.00	0.00	68.92
	Device Fee Sub-Totals =								**$3,725.29**	**$0.00**	**$0.00**	
	Device Fee Total =											**$3,725.29**

Permit Fee

Fee Based on Devices **$3,725.29**

Fee Statement Grand Total = $3,725

Notes:
(1) Fee Schedule Items are listed in District Rule 210, Fee Schedule "A".
(2) The term "Units" refers to the unit of measure defined in the Fee Schedule.

ATTACHMENT J
CCWS Comments on Draft Permit

Central Coast Wine Services

Central Coast Wine Services
2717 Aviation Way, Suite 101
Santa Maria, CA 93455
(805) 318-6796 FAX (805) 928-5629

June 7, 2017

Mr. Kevin Brown
Santa Barbara County
Air Pollution Control District
260 North San Antonio Road, Suite A
Santa Barbara CA 93110

Subject: Central Coast Wine Services
Comments on Draft ATC 15044
FID 11042 SID 108534

Dear Mr. Brown,

Central Coast Wine Services (CCWS) received the draft Authority to Construct (ATC) 15044 for the authorization of red and white wine fermentation in the 400 series tanks and for the installation of a new barrel room. The following comments on the draft ATC are provided for the District's consideration:

1. **Draft ATC 15044, Condition 2.c, Page 3 of 17**
Condition 2.c requires a minimum combined capture and control efficiency of 67.0%. It is understood that this efficiency level is based upon data provided with our ATC application. However, it was also understood from our discussions with the District during the pre-application meeting that if the control efficiency that was presented in our application was not achievable during the Source Compliance Demonstration Period (SCDP), CCWS would be allowed to petition the District, either through the ATC modification process or letter, to adjust this value appropriately. CCWS feels that this contingency should be documented within this condition. 1-1

2. **Draft ATC 15044, Condition 2.p, Page 4 of 17**
Condition 2.p requires the inspection and cleaning of the capture and control system components following a tank foam-over. However, this condition stipulates that this activity shall be performed "as-necessary". The term "as-necessary" is very vague and is subject to a very broad interpretation. Furthermore, CCWS believes that this condition is unnecessary. The requirement to maintain the capture and control systems is already conditioned in Condition 15. Please remove this condition. 1-2

3. **Draft ATC 15044, Condition 8.c, Page 10 of 17**
Condition 8.c requires that when CCWS employs the Expedited Tank Change process, we must identify which BACT capture and control system the tank(s) will be connected to. This condition appears to be in opposition to the BACT application methodology for the current tank 1-3

ATTACHMENT J
CCWS Comments on Draft Permit

inventory. That is, CCWS can choose to use either the NoMoVo or the EcoPAS BACT control technology on any of the existing tanks. Furthermore, the specific control technology used on a specific tank can be changed as necessary for satisfy CCWS's operational needs. Any tank added through the Expedited Tank Change process should be allowed the same flexibility.

4. **Draft ATC 15044, Condition 9, Page 10 of 17**
Condition 9 establishes a 60-day Source Compliance Demonstration Period (SCDP). Condition 9.d establishes a requirement to apply for a PTO within 45-days of the start of the SCDP. Since the BACT control efficiency will be based upon a 30-day rolling average, on the 45th day of the SCDP there will have only been 15 data points to be used to determine if CCWS will be able to achieve the 67% combined control efficiency (see Item 1 above). In reality, since it takes a few days to prepare and obtain approvals on any application documents, CCWS will have significantly less than 15-days to determine the feasibility of the 67% efficiency value. If adjustments or modifications to the devices are required, it would take an additional 30+ days to determine the effect of those modifications. 1-4

CCWS would like to propose that the SCDP for this ATC be comprised of the entire 2017 fermentation season, or 90-days, whichever is longer. Condition 9.d would then require a PTO application within 75 days of the start of SCDP.

5. **Draft ATC 15044, Condition 9.d, Page 10 of 17**
CCWS questions the necessity of the inclusion of the March 1, 2018 deadline in Condition 9.d. The wording of this condition reads such that, through no fault of CCWS and even if the PTO application is submitted in a timely manner, if the District does not issue the PTO by that date CCWS must cease operations. This concern is supported by the comment on page 2 of 8 of the Permit Evaluation (end of top paragraph) where it states that, upon use this ATC would supersede the current existing PTO (PTO 14696).

CCWS understands that if we do not comply with all the SCDP conditions that we would be in violation of the District's Rules and would be subject to a possible mandatory shut-down. However, if CCWS complies with all SCDP conditions, and through no-fault of our own, the District is unable to issue the PTO by March 1, 2018, CCWS should not be penalized. Since ATC 15044 will supersede PTO 14696, this would force CCWS to shutdown winery operations. It is our understanding that this shutdown would force the emptying of the all tanks storing or fermenting wine and the emptying of the barrel rooms. This would be very detrimental to CCWS' business and jeopardize our ability to continue as an ongoing business. Therefore, CCWS does not accept the inclusion of the March 1, 2018 "drop-dead" deadline in this condition. 1-5

6. **Draft ATC 15044, Conditions 3.c, 4.b, 4.d, 4.e, 4.f, 5.b, 5.d, 5.f, and 11.b**
Each of the conditions above pertain to monitoring, recordkeeping or reporting of data relating to Alternating Proprietors (AP). AP's no longer share CCWS cellar space. CCWS does require that the APs weigh their grapes as they come onto the facility. However, CCWS does not track their equipment locations nor equipment (tank) inventories. Furthermore, CCWS is prohibited by TTB/ABC from performing recordkeeping for the AP's.

These requirements appear to be legacy requirements from a time when AP's shared cellar space with CCWS operations. Please remove all requirement to record and report on AP operations under this ATC. 1-6

It is noted that in CCWS's 2016 emissions spreadsheet, it was reported that there was AP fermentation occurring during October 2016. This was reported improperly due to a terminology

ATTACHMENT J
CCWS Comments on Draft Permit

difference between the District's permit and CCWS winemaking staff. CCWS established a Turn Key bond (CCWS' marketing entity) in 2016 due to the opening a tasting room. Rules are that you must produce at least 50% of your wine in the facility where bond resides to have a tasting room. Some fruit that was brought in from outside vineyards and owned by Turn Key was listed as AP emissions (Turn Key is an AP). However, the fruit was crushed under the CCWS bond and is on the CCWS report of operations.

Going forward, all fruit brought in and fermented will be under the CCWS bond and reports. Ownership is a completely different issue. When preparing wine to be bottled, then the product will transfer to the AP/Turn Key bond.

7. **Fee Statement, Attachment F**
All of the devices subject to this ATC, with the exception of the new barrel room (Device 388058) are existing devices. As such fees were already assessed at the time of the issuance of the current PTO (PTO 14696) on March 23, 2016. The fees should be prorated to account for the portion of the time that is covered by the past payment of fees (ATC 15044 issuance date through March 23, 2019). 1-7

Please let us know if there are any questions or comments.

Sincerely,

Richard Mather
Business Manager
Central Coast Wine Services

C: M. Strange, M. F. Strange & Associates, Inc.

ATTACHMENT K
District Responses to CCWS Comments on Draft Permit

The following are the District's responses to comments on the draft permit by Central Coast Wine Services in a letter dated June 7, 2017. Comments are summarized from the CCWS letter. The referenced item numbers correspond to the item numbers identified in the right hand margin of the comment letter in Attachment J.

Item	Comment	Response
1-1	Condition 2.c. Add a contingency to the permit stating that CCWS may petition the District via letter or ATC modification to adjust the control efficiency if it is not achieved during the SCDP.	As noted during our pre-application meeting, the District is open to modifying the control efficiency value via a modification to the ATC permit should the control systems not achieve the required control efficiency during the SCDP. CCWS and its vendors would first have to evaluate the technical reasons for the systems not achieving their designated control levels and then implement required fixes. This is standard operating practice and most issues are resolved during this debugging period. If after all the debugging is completed, all the technical analyses are completed, all the modifications/changes to the control systems are completed and any permit monitoring, recordkeeping or reporting changes are completed, it is clear that the performance standard cannot be achieved, the District would then be open to modifying the control efficiency value via a modification to the ATC permit. Further, CCWS would be required to implement all feasible procedures to maintain the control efficiency. The above process is a standard District practice, and explicit inclusion in the permit is unnecessary.
1-2	Condition 2.p. Remove the text "as-necessary" since it is vague. Also, delete the condition since Condition 15 already addresses maintenance requirements.	This requirement is needed since it is called out in the vendor guarantees as a necessary operational procedure to ensure proper operation of the control device. We concur that the words "as necessary" can be interpreted as being vague and have deleted the term from the condition.
1-3	Condition 8.c. This condition conflicts with the BACT condition. Any tank added via the Expedited Tank Changes	The requirement to identify which control system will be connected to tank(s) installed using the *Expedited Tank Changes* Condition has been removed from the final permit.

ATTACHMENT K
District Responses to CCWS Comments on Draft Permit

Item	Comment	Response
	condition should have the flexibility to use either control system as determined by CCWS.	
1-4	Condition 9. The proposed 60-day SCDP period is not sufficient in order to gather the data and submit the PTO application within 45 days. Change the SCDP period to be the entire 2017 fermentation season or 90 days, whichever is longer.	The SCDP period has been increased to 90 days (60 days to submit the PTO application) in the final permit.
1-5	Condition 9.d. Delete the March 1, 2018.	The March 1, 2018 date was removed, and the condition was updated to reflect the standard SCDP template.
1-6	Conditions 3.c, 4.b, 4.d, 4.e, 4.f, 5.b, 5.d, 5.f and 11.b. Alternating Proprietors (AP) no longer share CCWS cellar space. Remove all requirements to monitor, record and report on AP operations.	The Alternating Proprietor (AP) monitoring, recording and reporting requirements have not been removed. This permit governs equipment owned by CCWS. As such, all operations of equipment subject to this permit must be reported by CCWS, regardless of who operates the equipment (CCWS or APs). The monitoring and recordkeeping requirements that pertain to the AP operations may be performed by either CCWS or the APs themselves. If the APs perform their own monitoring and recordkeeping, CCWS must ensure the APs provide them with the necessary information to satisfy the reporting requirements of this permit. This is consistent with how CCWS has been permitted since the initial permit was issued for the facility in 2009. If no AP operations occur in any of the equipment subject to this permit, CCWS may report zero usage for AP operations.
1-7	Except for the barrel room, the fees should be pro-rated against PTO 14696 since that permit contains the devices on the draft ATC permit.	Pro-rating is not applicable for determining the ATC permit evaluation fees. Fees for this ATC permit are assessed pursuant to Section I.B.1 of Rule 210. Fee Schedule A is used. The purpose of assessing fees is to capture the costs for the processing of the ATC permit and for SCDP activities. The equipment (tanks) subject to the permit are used to assess that fee. We will use pro-rating of the equipment fees at the time a PTO is issued for this project.

ATTACHMENT L
Wine Institute Comments on Draft Permit

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June 20, 2017

Via U.S. Mail and E-mail

Mr. Kevin Brown
Santa Barbara County Air Pollution Control District
260 North San Antonio Road, Suite A
Santa Barbara, California 93110

Re: Central Coast Wine Services
Draft ATC 15044
FID 11042; SSID 10834

Dear Mr. Brown:

I am writing on behalf of The Wine Institute to provide comments on the above-referenced draft Authority to Construct (ATC). This letter and the comments below are intended to fulfill the requirements of Santa Barbara County Air Pollution Control District (District) Rule 209 and California Health and Safety Code Section 42302.1 that The Wine Institute "appear[], submit[] written testimony, or otherwise participate[]" in the District's permitting process as a precondition to requesting a public hearing regarding the Central Coast Wine Services (CCWS) permit.

The Wine Institute's comments are focused on a narrow issue—whether the emissions control requirements imposed on CCWS with respect to VOC emissions from wine fermentation tanks have been "achieved in practice" and therefore qualify as "Best Available Control Technology" (BACT). For the reasons set forth below, the NohBell NoMoVo and EcoPAS emissions control systems (Emissions Control Systems) have not been "achieved in practice" and are therefore not BACT.

The Wine Institute has no objection to the issuance of an ATC to CCWS, and has no objection to CCWS's implementing the Emissions Control Systems voluntarily at its facility, to whatever extent it deems advisable, to comply with emissions limits imposed by the District. However, the draft ATC should be revised to remove any reference to the Emissions Control Systems being "achieved in practice" or BACT, because those statements are not supported by law or fact. 2-1

1. Background.

CCWS is a small, custom-crush winery. The draft ATC covers emissions from 40 small storage and fermentation tanks with capacities in the range of 350 to 21,200 gallons, plus an oak

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Wine Institute Comments on Draft Permit

barrel storage room. The Emissions Control Systems have been used sporadically at CCWS since 2013. CCWS uses two NohBell NoMoVo systems and one EcoPAS system. The NoMoVo systems are portable and may be moved from tank to tank. The EcoPAS system is not portable but is manifolded to ten tanks and may be connected or disconnected from any of those tanks by opening or closing manifold valves. 2-2

CCWS has used the Emissions Control Systems to maintain its daily emissions below its permitted daily emission limit of 54.99 lbs of VOCs. When daily uncontrolled emissions fell below that threshold, the Emissions Control Systems were not used. When daily emissions were likely to exceed that threshold, CCWS used the Emissions Control Systems on tanks of its choosing, sometimes using the systems for a day or two during a fermentation cycle, and sometimes using the Emissions Control Systems for longer periods. Some tanks were never connected to the Emissions Control Systems.

Under its current permit and for the purposes of preparing its application for ATC 15044, CCWS estimates its emissions by using emission factors for wine fermentation and then subtracting the amount of ethanol captured by the Emissions Control Systems. However, CCWS has not recorded how much ethanol has been captured by the Emissions Control Systems from any given tank. Nor has CCWS reported to the District which tanks were connected to the Emissions Control Systems, on what dates, and under what circumstances. CCWS's records reflect only the results of sporadic use of the systems on a series of unspecified tanks at unspecified times across the entire facility. 2-3

The draft ATC states that "CCWS proposed the use of the NoMoVo and EcoPAS emission capture and control systems as BACT for this project,"[1] but that statement is not accurate. As CCWS's permit application states, "The District ... has given instructions that CCWS should consider these technologies as BACT for this project."[2] 2-4

2. The BACT requirements.

Under State law and the District's Policy No. 6100.064.2017, BACT for any stationary source in a nonattainment area (which the District refers to as NAR BACT) is determined using the most stringent of three alternative standards. In this case, the District has determined that the Emissions Control Systems are BACT because they are: 2-5

a) The most effective emission control device, emission limit, or technique which has been **achieved in practice** for the type of equipment comprising such stationary source; ....

[1] Permit Evaluation for Authority to Construct 15044, section 1.1, at 2.
[2] Central Coast Wine Services, Authority to Construct Application, Process Description, at 2.

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Wine Institute Comments on Draft Permit

Policy No. 6100.064.2017, § 3.1 (emphasis added.) This particular definition of BACT does not incorporate any consideration of economic or technical feasibility because "[t]he fact that a particular control technology is 'achieved-in-practice' implies its inherent economic and technological feasibility." Policy No. 6100.064.2017, § 5.0. It is thus of paramount importance that, before a finding of "achieved in practice" is made, the control technology has been implemented and used successfully under real-world conditions.

To be considered "achieved in practice," emissions controls must have "a proven 'track-record' of reliability." *Id.* at § 5.1. They must also be "effective overall [sic] operating ranges." *Id.* at § 8.1. "If BACT is required, then the permit must have a BACT permit condition. ... The condition should ... state that the specified BACT must be in place at all times of operation during the life of the project/permit." *Id.*

BACT emissions controls must be implemented through the specification of a "performance standard" and not "solely through the specification of the BACT control technology being employed." *Id.* The performance standard must be stated as a concentration, rate, removal efficiency or other applicable, enforceable, numerical standard. *Id.*

3. The Emissions Control Systems have not been "achieved in practice."

The Emissions Control Systems do not have a "proven track-record of reliability" for use over an entire fermentation cycle. The way to prove such a track-record is straight-forward: (1) attach the Emissions Control Systems to closed fermentation tanks before fermentation begins, (2) measure all inputs and outputs from the closed systems (including waste products), (3) analyze the resulting data to develop a performance standard, (4) conduct repeated tests of the systems under all likely conditions of use—including with different types of grapes and styles of wine—in order to validate the performance standard, and (5) document the testing. The draft ATC contains no documentation indicating that these steps have ever been performed. (Moreover, neither CCWS nor the District has developed any data regarding the effect on the quality of the wine of using the Emissions Control Systems over an entire fermentation cycle.) As a result, the Emissions Control Systems have not been shown to be "effective over all operating ranges." 2-6 2-7

Neither CCWS nor the District has any basis for accurately estimating a performance standard for the Emissions Control Systems. As noted above, CCWS estimates its emissions by using emission factors for wine fermentation, and then subtracting the amount of ethanol captured by the Emissions Control Systems. Although this approach is adequate for documenting compliance with permit conditions, the District has not developed an adequate performance standard or demonstrated that the technology has been achieved in practice. Uncontrolled emission rates from fermentation tanks may vary by factors of 2 or more, and therefore off-the-shelf emissions factors provide at best average emissions, and not actual 2-8

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emissions, from any specific tank. Even if the District had reliable data on uncontrolled emissions, there is no data regarding which tanks were subject to emissions controls, how much ethanol was captured from them or the time period that any controls were in place—essential information for assessing whether emissions reductions were achieved and quantifying them. Thus, there is no data from which a performance standard can be accurately determined for the Emissions Control Systems as applied to a tank over a complete fermentation cycle.

The absence of such information is especially significant for a facility such as CCWS, which provides winemaking services to multiple different vineyards and winemakers, producing wine from different varieties of grapes and in different styles. The emissions from these multiple types of wine have been shown to vary significantly. Although the mass-balance approach is a practical method of documenting compliance with the facility's permit limits, the District has not sufficiently developed a performance standard or data to support an "achieved in practice" determination.

CCWS's application for the draft ATC reflects the lack of any data to support a BACT determination. Although the manufacturers of the Emissions Control Systems have guaranteed that they will meet a 67 percent performance standard over an entire fermentation cycle, the EcoPAS guarantee does not apply to the first quarter of a fermentation cycle—EcoPAS specifically disclaims that its system will be effective during that period—and only applies in a specified vapor flow range. As the application notes in the BACT Analysis Summary Form for the EcoPAS system, the "Performance Standard" is "To Be Determined": 2-9

> EcoPAS has provided CCWS with a performance guarantee of 67%. **However this control efficiency has not been validated.** Limitations of the capture system were not taken into consideration. **Only with proper validation can a real control efficiency be assigned to this combination of vapor capture and ethanol extraction from the vapor stream....**

Application, Attachment B, at 1 (emphasis added). The application also notes that "This technology is not effective over all operating ranges" (and therefore fails to meet the requirements of the District's policy) and that "BACT will not be achievable during non-standard operations." *Id.* at 2. Under "Operating Constraints," the application states, "[t]o be determined." *Id.*

The capture efficiency of the NohBell NoMoVo system is similarly uncertain. NohBell presents a range of possible capture efficiencies from 45% to over 90%. The application notes that the Performance Standard of the NoMoVo system is uncertain:

> Performance Standard: To be Determined – NohBell has provided CCWS with a performance guarantee of 67.5%. However **this control efficiency has not been**

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> **validated**. Limitations of the capture system were attempted to be taken into consideration. **Only with proper validation can a real control efficiency be assigned to this combination of vapor capture and ethanol extraction from the vapor stream be assessed.**
>
> ....
>
> The performance of this technology is not consistent over the entire duration of a fermentation cycle. Absorption performance can vary from 45% to 90+% depending upon the timing of the fermentation cycle. Compound that variability with the normal insistent operations of the capture manifold, and **the actual variability of the control efficiency across all operating ranges [is] indeterminable.**

Id., Attachment C, at 1-2 (emphasis added). Just as with the EcoPAS system, the application notes that "Operating Constraints" are "[t]o be determined." *Id.*, Attachment C, at 2.

In its response to the draft permit, CCWS notes that the District agreed that the performance standard in the draft permit was essentially a placeholder, and that the actual control efficiency would be determined during the Source Compliance Demonstration Period. In effect, the District has decided to require the Emissions Control Systems so that their efficacy can be demonstrated by CCWS during its operations under the permit. If the Emissions Control Systems were "achieved in practice," then their effectiveness would have been demonstrated and the control efficiency would be known. If the efficiency of the Emissions Control Systems cannot even be reasonably estimated before implementation, those systems do not have a "proven track-record" and are not "achieved in practice." 2-10

The District's analysis in the draft permit of whether the Emissions Control Systems have been achieved in practice is conclusory. The District relies on an EPA letter, which does not provide any additional information regarding whether the Emissions Control Systems have been achieved in practice, and the use of the Emissions Control Systems at the CCWS facility. As documented above, the Emissions Control Systems have not been used consistently over all operating ranges at CCWS, and their effectiveness has not been documented on even a single tank. 2-11

4. The SJVAPCD has thoroughly analyzed whether the Emissions Control Systems have been "achieved in practice" and has concluded that they have not.

Notably absent from the District's BACT analysis is any discussion of the San Joaquin Valley APCD's thorough analysis of whether the Emissions Control Systems are "achieved in 2-12

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practice." In February 2015 and May 2016, the SJVAPCD published a memorandum on the subject "Achieved in Practice Analysis for Emission Control Technologies Used to Control VOC Emissions from Wine Fermentation Tanks." The SJVAPCD's memorandum, a copy of which is attached, is the only written analysis that thoroughly examines each use of the Emissions Control Systems to determine whether they are "achieved in practice." The SJVAPCD concludes that they are not.

The SJVAPCD's memorandum specifically examines the use of the Emissions Control Systems at the CCWS facility. The SJVAPCD concludes that the use of the Emissions Control Systems at CCWS has not shown those systems to be achieved in practice because:

- "The permit does not require continuous operation of the [Emissions Control Systems]."
- "The effectiveness of the [system] has only been estimated using ... a theoretical calculation of the quantity of ethanol that would be emitted if the tanks were uncontrolled. Inlet and outlet air quality testing has not been performed for this particular installation."
- "[T]he overall effectiveness of the system, including any ethanol re-emitted into the atmosphere during [waste] disposal, has yet to be sufficiently determined."
- "[T]he control technology has not been demonstrated to operate in a manner that would be required by BACT...."

All of these critiques are valid today and preclude the District from finding that the Emissions Control Systems have been "achieved in practice."

5. The District's Policies and Procedures require source testing to determine BACT.

The District's Policy and Procedure No. 6100.064.2017, Section 8.4, provides in part that "Source testing is required to ensure that the BACT performance standards and hourly mass emission rates are in compliance." This policy is subject to exceptions only in situations where other specified means of compliance may be used. Thus, to qualify for BACT, a technology must be subject to source testing or other equivalent means of demonstrating compliance.

The District has recognized that a "mass-balance" approach is not equivalent to a "source test" to demonstrate the effectiveness of the Emissions Control Systems. In a March 1, 2017 email, the Manager of the District's Engineering Division wrote to CCWS:

> Just wanted to share with you a conversation I had with EPA recently regarding winery emission control source testing. In particular, we discussed the CCWS

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> question and options, including a potential EPA study to evaluate source testing methodologies (a longer term project). In the meantime, EPA provided us guidance that source testing using the mass balance calculations currently in place would be an acceptable compliance tool in lieu of traditional inlet/outlet source testing. Once complete, we would utilize EPA's test method for new projects. ...

The District's email implicitly acknowledges that source testing is feasible, because EPA plans to perform such testing and the District plans to use EPA's method when it is developed. The District's email also recognizes that "mass balance calculations" are a stop-gap until inlet/outlet source testing is conducted. Once that testing is conducted, the District will use the source testing for "new projects." 2-13

If source testing will be performed in the future to demonstrate the effectiveness of the Emissions Control Systems, that testing should be done before concluding that the systems are effective and achieved in practice. As the SJVAPCD notes, NohBell and EcoPAS's refusal to conduct source testing raises significant questions and concerns regarding their control efficiency claims:

> The refusal of the control vendors to demonstrate the actual control efficiency raises significant questions and concerns over the vendors' control efficiency claims. The Valley Air District cannot, in good faith, require controls which the vendors refuse to validate. The District's concern is that, if the vendors of this technology are aware that claims of the control efficiency are potentially overstated, but they also know that EPA is about to require their technology to be installed on a widespread basis, they gain no advantage by demonstrating their actual control efficiency. Since the effectiveness was yet again not demonstrated in 2015, and for the reasons stated in the 2013 evaluation of the use of controls at CCWS, the criteria of Achieved in Practice have yet to be satisfied for these installations.

The "mass-balance" calculations that the District proposes to use to estimate the effectiveness of the Emissions Control Systems are subject to considerable variability and should not be the basis for a determination that the Emissions Control Systems have been "achieved in practice." As EPA has noted, emissions factors for wineries "are generalized. There is a great deal of variation in parameters and emissions. Actual emissions may be much higher or lower."[3] Both the manufacturers of the Emissions Control Systems and the District recognize that source testing should be performed. As recently as February 2017, EcoPAS proposed that the District support EPA funding of source testing and admitted that "a solid assessment of actual emissions factors and inventory is long overdue." The District has not determined accurately the 2-14

[3] US EPA, Inventory Guidance and Evaluation Section, VOC Emissions from Wineries (March 10, 1992).

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efficiency of the Emissions Control Systems, or specified a practical, enforceable performance standard.

6. Conclusion

As noted above, the District's own policies acknowledge that an "achieved in practice" determination is a substitute for a determination that a particular control technology is both economically and technically feasible: "The fact that a particular control technology is 'achieved-in-practice' implies its inherent economic and technological feasibility." Policy No. 6100.064.2017, § 5.0. The District has not sufficiently performed and documented an achieved in practice assessment. The District has not assessed and documented comprehensive reliability data. The Emissions Control Systems did not operate over the entire operating range needed for the application, and the permit does not specify an adequately documented performance standard for the systems. The regulated community should not be required to use technology that has never been used under the same conditions as BACT and has not been demonstrated to be effective. 2-15

The Wine Institute has no objection to the District's issuing an ATC to CCWS that permits the proposed facilities and that provides, with CCWS's agreement, for the use of the Emissions Control Systems. However, those systems have not been "achieved in practice" and are not BACT, and all references to such systems as "achieved in practice" or BACT should be removed from the draft permit.

Very truly yours,

R. MORGAN GILHULY

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Wine Institute Comments on Draft Permit

SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT MEMO

DATE: February 9, 2015 (Revised May 9, 2016)

TO: Dave Warner, Deputy APCO

FROM: Nick Peirce, Permit Services Manager
James Harader, Senior Air Quality Engineer
Jag Kahlon, Air Quality Engineer

SUBJECT: Achieved in Practice Analysis for Emission Control Technologies Used to Control VOC Emissions from Wine Fermentation Tanks

Introduction

The purpose of this analysis is to determine whether there is any control technologies that can be considered to be Achieved in Practice BACT for controlling fermentation VOC emissions from wine fermentation tanks. If determined to be achieved in practice, the San Joaquin Valley Air Pollution Control District (District) would require the use of such technology for wine fermentation tanks when BACT is triggered, without any consideration of the cost effectiveness of the control technology. The District's achieved in practice BACT is functionally equivalent to Federal EPA's Lowest Achievable Emission Rate requirements outlined in Federal Non-Attainment NSR documents.

LAER

The emission control requirement for new Major Sources and Federal Major Modifications in non-attainment areas is that the emission units meet the lowest achievable emission rate (LAER). LAER is the most stringent emission limitation from either of the following:

1. The most stringent emission limitation contained in the implementation plan of any State for such class and category of source; or
2. The most stringent emission limitation achieved in practice by such class or category of source.

In no event can the LAER requirement be less stringent than Federal New Source Performance Standards (NSPS), if there is an NSPS applicable to the type of source being evaluated.

In the case of wine fermentation tanks, the District did not identify any SIP that would require the use of add-on control systems. Therefore, add-on control

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systems can only be required as LAER for wine fermentation if they are determined to be achieved in practice for the source category.

Achieved in Practice Criteria

The term "achieved in practice" appears to be subject to interpretation since it is not defined in the federal statutes or regulations. As a result, there are few objective regulatory criteria to constrain the form of an achieved in practice determination. The following discussion outlines the achieved in practice criteria that is used by the District for determining LAER.

In a February 28, 1989 memorandum titled "Guidance on Determining Lowest Achievable Emission Rate (LAER), EPA provided the following guidance concerning the economic feasibility of LAER:

> *Traditionally, little weight has been given to economics in LAER determinations, and this continues to be the case. The extract in your memorandum from the record of the House and Senate discussion of the Clean Air Act (Act) contains the sentence:*
>
> > *"If the cost of a given control strategy is so great that a new major source could not be built or operated, then such a control would not be achievable and could not be required by the Administrator."*
>
> *We interpret this statement in the record to be used in a generic sense. That is, that no new plants could be built in that industry if emission limits were based on levels achievable only with the subject control technology. However, if some other plant in the same (or comparable) industry uses that control technology, then such use constitutes de facto evidence that the economic cost to the industry of that technology control is not prohibitive. Thus, for a new source in that same industry, LAER costs should be considered only to the degree that they reflect unusual circumstances which, in some manner, differentiate the cost of control for that source from the costs of control for the rest of that industry. These unusual circumstances should be thoroughly analyzed to ensure that they really do represent compelling reasons for not requiring a level of control that similar sources are using. Therefore, when discussing costs, applicants should compare the cost of control for the proposed source to the costs for source(s) already using that level of control.*

The statement *"If some other plant in the same (or comparable) industry uses that control technology, then such use constitutes de facto evidence that the*

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economic cost to the industry of that technology control is not prohibitive" is only true if the plant using that control technology purchased or leased that control technology. Scenarios where the purchase/lease of the control technology was subsidized with grant money, or where the plant allowed the control vendor to operate and test their equipment on-site without actually purchasing/leasing the control technology do not constitute evidence that the economic cost to the industry due to use of that technology control is not prohibitive. Therefore, the District's historical position is that a control technology must have been purchased or leased by the plant in order for that installation of the control technology to be considered as achieved in practice.

EPA Region IX has previously stated that the successful operation of a new control technology for six months constitutes achieved in practice. This position was established in an August 25, 1997 letter from David Howekamp of US EPA Region IX to Moshen Nazemi of South Coast Air Quality Management District. This guidance is reflected in the South Coast Air Quality Management District's BACT Policy, which includes the following criteria for determining whether a control technology is achieved in practice:

> *Reliability: All control technologies must have been installed and operated reliably for at least six months. If the operator did not require the basic equipment to operate daily, then the equipment must have at least 183 cumulative days of operation. During this period, the basic equipment must have operated: 1) at a minimum of 50% design capacity; or 2) in a manner that is typical of the equipment in order to provide an expectation of continued reliability of the control technology.*

For wine fermentation tanks, the District has taken the position that successful operation of a control device for one full fermentation season is satisfactory for qualifying a control as achieved in practice. The requirement of one full fermentation season is considerably more conservative than the 6-month requirement, since the fermentation season typically lasts only two to three months.

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The term "successful operation" is not tightly defined. The District considers the following when determining whether a control technology has been successfully operated for achieved in practice BACT determinations:

1. Was the control technology operated in the same manner that would be required by the District if the control technology was required for BACT?
2. How reliable has the control technology been over the life of its use?
3. Has the control technology been verified to perform effectively over the range of operation expected for that type of equipment? Was the effectiveness verified by performance test(s), when possible, or using other performance data?

Other typical considerations that the District considers when making an achieved in practice BACT determination include:

1. Is the control technology commercially available from at least one vendor?
2. On what class and category of source has the control technology been demonstrated?

In summary, the following criteria are used for determining whether a control technology is achieved in practice for wine fermentation:

1. Did the plant using the control technology purchase/lease the equipment? Was that purchase/lease subsidized?
2. Was the control technology operated for at least one fermentation season?
3. Was the control technology operated in the same manner that would be required by the District for BACT purposes?
4. How reliable has the control technology been during its use at the plant?
5. Has the control technology been verified to perform effectively over the range of operation expected for that type of equipment? Was the effectiveness verified by performance test(s), when possible, or other performance data?
6. Is the control technology commercially available from at least one vendor?
7. On what class and category of source has the control technology been demonstrated?

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Achieved in Practice Analysis for Known Installations of Wine Fermentation Control Technologies

The following is an analysis of each known installation of an emission control technology to control VOC emissions from wine fermentation tanks and whether that installation can be considered achieved in practice.

Terravant Wine Company (2008 – Current)

Terravant Wine Company submitted an Authority to Construct application for a wine processing facility to the Santa Barbara County Air Pollution Control District (SBCAPCD) on September 20, 2007. The application was deemed complete on October 19, 2007. The fermentation tanks triggered BACT; however, the SBCAPCD evaluation determined BACT to be infeasible. However, this project also triggered offsets and Terravant Wine Company electively proposed to install a packed bed water scrubber with UV/hydrogen peroxide controls to control VOC emissions from the wine fermentation tanks. Proposing the control would reduce VOC emissions to a level below the SBCAPCD offset threshold. The control technology is only required to run sufficiently to reduce emissions to stay below the offset threshold – it is not required to be operated all of the time, as is BACT-required equipment.

The packed bed water scrubber was installed in 2008 and began operation in 2008, with a 95% control efficiency requirement on the Authority to Construct permit. However, in 2008, the unit failed to meet the 95% control efficiency requirement. Prior to the 2009 season, Terravant Wine Company was issued a revised Authority to Construct permit that reduced the control efficiency requirement to 75%. However, the unit has not been able to consistently demonstrate compliance with the 75% control efficiency requirement. The effectiveness of the packed bed scrubber has varied considerably over its life, and has been measured to be as low as 49% control efficiency. During discussions, SBCAPCD staff indicated that this facility has been issued a Notice of Violation for non-compliance with their permitted emission limits and they would not recommend that any wineries use this control technology for the control of fermentation tank emissions, as it has proven to be unreliable. Finally, the control technology used by Terravant Winery is custom designed, and is not a commercially available off-the-shelf type of unit.

The packed bed scrubber technology does not meet the achieved in practice criteria since this control technology has not been operating in compliance with its permit requirements, its effectiveness is highly variable, and the control technology is not commercially available.

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EcoPAS, LLC (2009)

EcoPAS conducted testing of their passive alcohol system, which is consendation-based emission control system, at a winery located within the San Luis Obispo County Air Pollution Control District. The purpose of this installation was to conduct full-scale testing of the passive alcohol system on red wine fermentation tanks. The District was unable to verify whether the winery purchased the system.

Since the District could not verify that the winery purchased the control system, this installation doesn't meet the first criteria listed to be considered as achieved in practice. Furthermore, the unit was operated for experimental testing of the control device. In the District's experience, during experimental testing/trial runs, a control technology does not typically operate in the same manner as would be required by BACT, so the District has not historically considered experimental test/trial installations to constitute achieved in practice BACT.

Central Coast Wine Services (2009)

In 2009, Santa Barbara County Air Pollution Control District (SBCAPCD) determined that Central Coast Wine Services (CCWS) was operating without a permit. They required CCWS to submit an application for an Authority to Construct such that the winery would be in compliance with SBCAPCD Rules and Regulations. Based on the emission estimates for the facility, the facility was triggering Best Available Control Technology Requirements and Offsets. At that time, the SBCAPCD determined that BACT, while technologically feasible, was not cost effective. SBCAPCD issued an Authority to Construct/Permit to Operate on June 5, 2009 for the winery.

CCWS was allowed to exceed the offset thresholds during the fall 2009 harvest season in order to test potential control technologies. Three companies were invited to participate in testing of prototype emission control equipment, but only NohBell Corporation elected to install and test fugitive ethanol control equipment.

NohBell Corporation engineered and tested a full scale NoMoVo 1.0 system on a 50 ton tank at the CCWS plant. NoMoVo documents describe the equipment as successful, with full scale trials proceeding. After the 2009 season, NoMoVo documents indicate that CCWS decided to move the plant and equipment.

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This installation does not meet the requirements to be considered achieved in practice. First, the facility does not appear to have purchased/leased the control system, nor did they intend to continue operating the system. This is evident by their decision to discontinue use of the system in the following year. Second, no data has been submitted to the District to demonstrate that the unit was continuously operated in the same manner that the District would require the system to operate if it were considered achieved in practice BACT. The purpose of this installation was to perform initial testing and trial runs of the control technology. In the District's experience, during experimental testing/trial runs, a control technology does not typically operate in the same manner as would be required by BACT, so the District has not historically considered experimental test/trial installations to constitute achieved in practice BACT. Furthermore, the type of records necessary to demonstrate continuous operation of the system was not required by the SBCAPCD permit. Finally, the SBCAPCD permit did not include testing requirements to sufficiently demonstrate the effectiveness of the system.

Kendall Jackson Oakville (2010)

Kendall Jackson Winery belongs to Jackson Family Wines Inc (JFW), and is located in Oakville, California. This winery is in Bay Area Air Quality Management District (BAAQMD). BAAQMD does not require permits for wine fermentation or storage operations. Their Regulation 2, Rule 1, 117.9 and 117.10 has exemptions for wine storage and fermentation operations.

In 2010, NohBell installed a NoMoVo 2.0 system at the Kendall Jackson Winery. The system was connected to a 10,000 gallon fermentation tank and operated on a trial basis during the 2010 crush season. Pursuant to Brian Kosi, Winemaker at Kedall-Jackson Oakville, JFW never purchased the NoMoVo technology. The NoMoVo slurry was treated by the facilities on-site wastewater treatment system.

This installation does not meet the requirements of achieved in practice BACT. First, the system was never owned/leased by the winery. Secondly, the unit was operated for the purposes of testing/trial runs to evaluate the control technology. In the District's experience, during experimental testing/trial runs, a control technology does not typically operate in the same manner as would be required by BACT, so the District has not historically considered experimental test/trial installations to constitute achieved in practice BACT. Furthermore, BAAQMD does not have any record of source tests occurring during the 2010 crush season; therefore, the effectiveness for this installation was not established.

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Kendall Jackson Oakville (2011-2013)

In its 2010 clean air plan, the BAAQMD included a further study measure (FSM 14 – Winery Fermentation) to examine whether ethanol emissions from Bay Area wine production could be cost-effectively reduced. On 9/26/11, the BAAQMD signed a Research Sponsorship Agreement (Contract No. 2011-126) with NohBell to help develop its technology to capture volatile organic compounds emitted by wine fermentation tanks at Kendall Jackson Oakville. The contract states that *"District (BAAQMD) wishes to support NohBell's effort to demonstrate the technology at JFW winery and wishes to verify the function and cost-effectiveness of the technology and acquire data to help DISTRICT (BAAQMD) determine whether the equipment could be cost effectively employed more widely in the wine industry"*. NoMoVo submitted a project budget estimate of $118,750 for its NoMoVo 2.0 upgrades, pump upgrades, and related work at the plant. The BAAQMD contract promised $50,000 towards this effort, to be paid in installments directly to NohBell Corporation. Furthermore, Brian Kosl of Kendall-Jackson Oakville confirmed that the facility never purchased the NoMoVo system from NohBell and confirmed that the system has been removed from the site by NohBell.

For 2011, NohBell Corporation planned to conduct trials of the upgraded NoMoVo 2.0 system on 10 fermentation tanks. Six to eight trials were anticipated, operating on 4-6 day cycles. The trial runs were scheduled to be primarily conducted while fermenting red wines. The District was unable to obtain operational data for the 2012 and 2013 fermentation seasons for this equipment. Following the 2013 crush season, the equipment was removed and transferred to Constellation Wines in Monterey, CA.

This installation does not pass the first criteria of LAER, since the facility never owned the system and since the installation and operation of the control technology by NohBell was subsidized by a Research Sponsorship Agreement with BAAQMD. Furthermore, operation of the control technology at this facility was for trials/testing of the effectiveness of the control technology. In the District's experience, during experimental testing/trial runs, a control technology does not typically operate in the same manner as would be required by BACT, so the District has not historically considered experimental test/trial installations to constitute achieved in practice BACT. Finally, the unit was removed, which indicates that this wasn't intended as a permanent installation. For these reasons, the District does not consider this installation to be achieved in practice.

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J. Lohr Vineyard and Winery (2013)

NohBell Corporation has indicated that they operated a NoMoVo system at J. Lohr Winery in Paso Robles during 2013 crush season. The District contacted J. Lohr Winery to obtain more information regarding this installation. J. Lohr Winery personnel stated that they considered this to be a pilot type testing operation. J. Lohr Winery did not purchase or lease the system. The unit operated during the 2013 crush season on fermentation tanks that were processing red wine. After the 2013 crush season, the system was removed and no longer operates at this site. San Luis Obispo Air Pollution Control District (SLOAPCD) had no knowledge that this unit was installed at this winery and no Authority to Construct or permit exemption was issued for this equipment.

This installation does not pass the first criteria of LAER, since the facility never purchased/leased the equipment. Furthermore, operation of the control technology at this facility was for trials/testing of the effectiveness of the control technology at this facility. In the District's experience, during experimental testing/trial runs, a control technology does not typically operate in the same manner as would be required by BACT, so the District has not historically considered experimental test/trial installations to constitute achieved in practice BACT. Finally, the unit was removed, which indicates that this wasn't intended as a permanent installation. For these reasons, the District does not consider this installation to be achieved in practice.

Constellation Winery dba Gonzales Winery (2013)

During the 2013 crush season, a NoMoVo unit was installed on a 39,000 gallon fermentation tank at Constellation Brands U.S. Operations, Inc. dba Gonzales Winery in Monterey, CA. The control technology was installed and operated as a "pilot operation". Monterey Bay Unified Air Pollution Control District (MBUAPCD) compliance staff noticed the NoMoVo unit operating on-site without authorization from MBUAPCD and issued a notice of violation. Gonzales Winery submitted an Authority to Construct application; however, prior to processing that application, the facility notified MBUAPCD that the equipment had been removed from the site. The equipment operated at the site for a partial season for pilot testing purposes. MBUAPCD could not verify whether Gonzales Winery purchased or leased the equipment.

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The District was unable to verify whether Gonzales Winery purchased or leased the NoMoVo unit. Furthermore, operation of the control technology at this facility was for trials/testing of the effectiveness of the control technology at this facility. In the District's experience, during experimental testing/trial runs, a control technology does not typically operate in the same manner as would be required by BACT, so the District has not historically considered experimental test/trial installations to constitute achieved in practice BACT. Finally, the unit was removed, which indicates that this wasn't intended as a permanent installation. For these reasons, the District does not consider this installation to be achieved in practice.

Vinwood Cellars Kenwood (2013)

The District has found documents indicating that a NoMoVo system was installed on four 15,000 gallon fermentation tanks at Vinwood Cellars Kenwood in Sonoma county, and the system was operated during the 2013 season. District staff attempted to contact Vinwood Cellars; however, the staff at Vinwood Cellars was unable to verify information for this installation. BAAQMD had no knowledge of this installation, as they do not require permits for wine tanks, so they were unable to verify this installation. Furthermore, since this installation was not subject to permit requirements, BAAQMD has no operational history or test data for this site. While BAAQMD administered source tests at Kendall Jackson Oakville winery, they have no records of any source testing of the NoMoVo system at Vinwood Cellars Kenwood.

This installation has not met the requirements of achieved in practice. First, it has yet to be confirmed that the winery actually purchased the NoMoVo system. Second, BAAQMD has no test records to verify the effectiveness of the NoMoVo system at this site. Finally, the operational history of the unit at this site is not available to determine whether it was operated in the same manner as a unit would be if it were installed as BACT.

Central Coast Wine Services (2013)

On August 5, 2013, CCWS electively applied to install a NoMoVo wine emission capture and control system to control ethanol emissions from fermentation activities at their wine center. The existing fermentation tanks at the facility ranged in capacity from 350 gallons to 20,887 gallons. On September 23, 2013, a final ATC (ATC 14257) was issued for the installation of the NoMoVo system, and the unit began operation in September 27, 2013. The installation of this unit allowed CCWS to increase daily wine fermentation while remaining under their existing daily and annual facility-wide VOC emission limits. A Permit to Operate (PTO 14257) was issued on December 13, 2013.

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PTO 14257 states: "*The NoMoVo system is optional and may be used at CCWS' discretion*". Thus, the permit does not require continuous operation of the NoMoVo system. The NoMoVo system is portable. The system can be attached to four or five fermentation tanks at a time via flexible hoses. The facility is allowed to move the NoMoVo system around, as desired, to capture emissions from the tanks where fermentation is taking place. However, there is no requirement to keep the NoMoVo system attached to a tank and operate it for the full fermentation cycle of that tank. Thus, the District was unable to confirm that the unit was operated in the continuous manner that would be required if the District considered NoMoVo to be achieved in practice BACT.

SBCAPCD PTO 14257 does not include a control efficiency requirement, does not include any source testing requirements to verify the control effectiveness of the control system. The effectiveness of the control has only been estimated using the density change of the NoMoVo slurry to estimate the quantity of ethanol capture, and using a theoretical calculation of the quantity of ethanol that would be emitted if the tanks were uncontrolled. Inlet and outlet air quality testing has not been performed for this particular installation.

Finally, the disposal of the NoMoVo slurry is an important consideration when determining the effectiveness of the control system. If the slurry is disposed of in a manner that re-emits the ethanol into the atmosphere, then the effectiveness of the control is diminished. Until August 2014, the CCWS facility disposed of the NoMoVo slurry in their on-site wastewater treatment facility. On August 21, 2014, SBCAPCD sent a letter to CCWS informing them that they have concerns over the treatment of the NoMoVo slurry. Specifically, SBAPCD was concerned about the potential for stripping of ethanol to the atmosphere during the on-site waste water treatment process. The SBCAPCD letter states "*In conclusion, after August 29, 2014, the District will not recognize emission reductions claimed based on the use of any of your NoMoVo systems (existing or new) at the facility until CCWS has a District-approved on-site or off-site ethanol disposal method in place*". On August 27th, 2014, SBCAPCD approved the disposal of the NoMoVo slurry at Southern California Waste Water, an off-site facility in Santa Paula, California. In November, 2014, a vacuum truck carrying toxic chemicals from an unrelated facility exploded spreading about 1200 gallons of chemical waste including sulfuric acid and highly combustible organic peroxide. Since that incident, Southern California Waste Water has discontinued the acceptance of waste from all of their clients, so this disposal option is no longer available for the waste generated by CCWS.

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The waste is now shipped to a distillery, which distills the ethanol and converts it into vehicle fuel. SBCAPCD has yet to approve the disposal of the NoMoVo slurry to the on-site wastewater facility. Consequently, the overall effectiveness of the system, including any ethanol re-emitted into the atmosphere during disposal, has yet to be sufficiently determined.

Since the control technology has not been demonstrated to operate in a manner that would be required by BACT and the overall effectiveness of the control technology has yet to be sufficiently determined, the District does not consider this installation to be achieved in practice.

Central Coast Wine Services (2014/2015)

In 2014, CCWS submitted an Authority to Construct application for the installation of 40 new tanks, ranging in capacity from 7,407 gallons to 20,628 gallons. The proposal triggered BACT. CCWS decided to forego the normal BACT Analysis, and electively proposed to install six NoMoVo systems to control VOC emissions from the tanks, when the tanks were fermenting wine. A final ATC, (ATC 14350) was issued on July 28, 2014 and the tanks were installed for the 2014 season.

Unlike the previous installations of NoMoVo at this facility, the ATC requires use of the NoMoVo system on these tanks while fermentation is taking place, the permit requires a minimum capture and control efficiency, and the permit requires source testing to verify the effectiveness of the NoMoVo system. However, these tanks have yet to be used for fermentation and the effectiveness has yet to be determined for this installation of the NoMoVo system. An email from Richard Mather of CCWS to David Harris of SBCAPCD, dated September 16, 2014, states:

> *We won't be using the new tanks for fermentation this year, but since our ATC permit only gives us until August 1, 2015 to fulfill the source test plan, we will need to conduct the test this fall before our last fermentation. It would be highly unlikely that we would be conducting fermentation next year before August 1. Since harvest is progressing rapidly, we probably only have several weeks of fermentation left this year.*

Prior to the 2015 season, CCWS received another Authority to Construct for the 40 new tanks that allowed the use of either NoMoVo or EcoPAS control systems. The new Authority to Construct continued to require inlet/outlet testing of the control system. However, that Authority to Construct was later cancelled due to both technology vendors objecting to perform the required source tests to demonstrate the control efficiency of their respective systems. Rather, CCWS was issued a new ATC allowing only 10 of the 40 tanks to be used for fermentation, and limiting

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fermentation to white wine only. With those changes to the permits, BACT was no longer triggered and the requirement to demonstrate the actual control efficiency was removed from the permits. Additionally, the use of the NoMoVo or EcoPAS control systems was no longer required; rather, the permit allowed for optional use on the 10 tanks that are allowed to ferment white wine.

The refusal of the control vendors to demonstrate the actual control efficiency raises significant questions and concerns over the vendors' control efficiency claims. The Valley Air District cannot, in good faith, require controls which the vendors refuse to validate. The District's concern is that, if the vendors of this technology are aware that claims of the control efficiency are potentially overstated, but they also know that EPA is about to require their technology to be installed on a widespread basis, they gain no advantage by demonstrating their actual control efficiency. Since the effectiveness was yet again not demonstrated in 2015, and for the reasons stated in the 2013 evaluation of the use of controls at CCWS, the criteria of Achieved in Practice have yet to be satisfied for these installations.

Conclusion

For the reasons listed in the above discussions of each control installation, none of the installations have met all of the criteria necessary for the control technology to be considered as achieved in practice BACT or federal LAER.

ATTACHMENT M
District Responses to Wine Institute Comments on Draft Permit

The following are the District's responses to comments on the draft permit by the Wine Institute in a letter dated June 20, 2017. The comments are summarized from the Wine Institute letter. The referenced item numbers correspond to the item numbers identified in the right hand margin of the comment letter in Attachment L.

Item	Summarized Comment	Response
2-1	The draft ATC should be revised to remove any reference to the Emission Control Systems as being declared "achieved in practice" or BACT.	The District disagrees with the assertions made by the commenter. Best Available Control Technology (BACT) is triggered for this ATC permit pursuant to District Rule 802.D. In implementing BACT for our New Source Review program, we primarily follow our rules, policies and input from oversight agencies such as EPA and ARB. We also review other air agency BACT determinations. Our goal is to implement the mission of the agency, which is to protect the people and the environment of Santa Barbara County from the effects of air pollution, including emissions from large Wine Centers such as Central Coast Wine Services (CCWS). The District has determined that the proposed emission control systems[1] are achieved in practice BACT for this project.
2-2	Central Coast Wine Services (CCWS) is a **small winery**, using 40 **small tanks**, and the Emission Controls Systems have been used **sporadically** at CCWS since 2013. {**emphasis added**}	The commenter is inaccurate with the facts regarding the background. CCWS is not a "small" winery. Small implies a typical low production boutique winery that is prevalent throughout the region. In Santa Barbara County alone, there are over 200 wineries. Due to their size, only 17 of these require permits with the District. Moreover, of these, CCWS, Terravant and Cambria are by far the largest. CCWS and Terravant are both similar custom crush wine centers. A recent news article[2] identifies Terravant as the 65th largest winery in the United

[1] As used throughout this document, the term "emission control system" refers to both the emission capture and emission control functionality of the system.

[2] Matt Kettmann, "Fine Dining and DIY at Bottlest", Santa Barbara Independent, June 22, 2017.

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		States. With over 9,000 wineries bonded in the U.S., that puts Terravant in the top 1%. CCWS's proposed fermentation capacity and their current production totals match or exceed that of Terravant's. Therefore, labelling CCWS a "small" winery is inaccurate. For tankage, CCWS will have a permitted capacity for fermentation of 1,438,226 gallons using 149 tanks ranging in size from 5,000 gallons to 21,000 gallons each. Again, this is clearly not "small". Lastly, we note that CCWS has utilized emission control systems every year since 2013 and has lease agreements to continue the use of these systems through 2017. Daily records kept by CCWS show that this equipment was used in a continuous manner when necessary to meet their permit limits. That is not "sporadic". Webster's defines sporadic as "occurring occasionally, singly, or in irregular or random instances". CCWS did not utilize these emission control systems in irregular, random or occasional fashion. To the contrary, the emission control systems were utilized on a frequent basis for the specific goal of reducing the daily emissions of ethanol throughout the fermentation season.
2-3	CCWS has not recorded how much ethanol has been captured from any given tank. Nor has CCWS reported which tanks were connected to the Emissions Control Systems, on what dates and under what circumstances. CCWS's records reflect on the results of sporadic use of the systems on a series of unspecified tanks at unspecified times across the entire facility.	The District disagrees with the assertions made by the commenter. It is not relevant how much ethanol was captured from each tank, which specific tanks were connected to the emission control systems, or the dates that a specific tank was connected. The basis for the existing permit was to ensure compliance with daily emission limits by estimating uncontrolled emissions from the facility along with measuring the mass of ethanol collected by each of the emission control systems. Similarly, the basis for the proposed permit is to use a mass balance approach to quantify the control efficiency of the emission control systems by estimating uncontrolled emissions from the facility along with measuring the mass of ethanol collected by each of the

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Item	Summarized Comment	Response
		emission control systems. As long as this approach is consistently applied, reasonably accurate results will be obtained. CCWS is required to track the emissions on a daily basis using this proven mass balance calculation. As explained is Response 2-2 above, the control systems were not used in a sporadic manner, and CCWS's records show long and consistent periods of continuous operation of the emission control systems.
2-4	The statement in the draft ATC that "CCWS proposed the use of the NoMoVo and EcoPAS emission capture and control systems as BACT for this project" is not accurate. CCWS's permit applications states, "The District …has given instructions that CCWS should consider these technologies as BACT for this project".	During our pre-application meeting with CCWS, the District provided CCWS guidance as to what BACT would be for their project. This is standard operating practice, and is detailed in Section 6.0 *BACT Selection Process*, of District Policy and Procedure No. 6100.064.2017 *Best Available Control Technology*. At the time of the March 28, 2017 pre-application meeting, the three emission control systems were posted to the CARB BACT Clearinghouse as achieved in practice technologies. We also provided CCWS copies of EPA's September 30, 2016 letter stating that all three emission control systems were considered achieved in practice. CCWS took this guidance and prepared a permit application in which they proposed the use of two of the three achieved in practice technologies identified emission control systems for their project. The application states, "Accordingly, CCWS agrees that one of these controls will be in place any time fermentation is occurring in a 400-series tank". CCWS understood what they were applying for and why, which is punctuated by the fact that their comment letter on the draft ATC did not raise the proposed emission control equipment being considered achieved in practice BACT as an issue. Further, in an e-mail sent July 24, 2017, CCWS made the

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		following statement: "Although the Wine Institute has written a letter contesting BACT, CCWS did not challenge the BACT requirement."
2-5	Under State law and the District's Policy No. 6100.064.2017, BACT for any stationary source in a nonattainment area (which the Districts refers to as NAR BACT) is determined using the most stringent of three alternative methods.	The District would like to clarify that our BACT requirements are specified in our Rule 802, Section D. There is no State law that defines BACT for our New Source Review program. Our Policy and Procedure No. 6100-064-2017 provides additional guidance for implementing our BACT program.
2-6	The Emission Control System do not have a "proven track-record of reliability" for use over an entire fermentation cycle.	The District disagrees with this assertion. As noted in Policy and Procedure No. 6100-064-2017, Section 5.1.(a), the standard for assessing a control system's "track-record" of reliability is tied to what we term "a reasonable time period". In this particular case, NoMoVo emission control systems have been effectively used at the CCWS facility since 2013. That equates to four fermentation seasons of effective use with no reported issues regarding the reliability of the system to perform its function. Further, the EcoPAS emission control system has been effectively used at the CCWS facility for two fermentation seasons with no reported issues regarding the reliability of the system to perform its function. Our achieved in practice standard of having a "proven track record" has been met. The comment that an entire fermentation cycle was required to meet the "proven track-record" criteria is not relevant in this situation. For both emission control systems, CCWS was not required to operate the systems during the entire fermentation process, as their goal was to utilize the control systems to ensure compliance with permit emission limits. A typical fermentation process starts with high levels of carbon dioxide (CO_2) generation and low levels of ethanol generation. As the fermentation process progresses the reverse occurs with CO_2 levels

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		dropping and ethanol levels increasing. As such, if the situation warranted, CCWS was free to disconnect the emission control system if their expectation of potential ethanol emissions was lower than the permit limit. Operating in this manner had no impact of the reliability of the control system to collect ethanol. Further, CCWS's daily tracking records show numerous instances where both the NoMoVo and EcoPAS systems were operated for long periods while connected to multiple tanks in different states of fermentation. There is no technical basis for discounting the effectiveness of these emission control systems simply because CCWS was allowed to operate them in the manner described above. These control systems are designed for continuous operation, and their operation at CCWS since 2013 proves that. Again, our achieved in practice standard of having a "proven track record" has been met.
2-7	The commenter recommends a 5-step process to establish a proven track record of reliability and notes that the ATC does not contain any documentation that these 5 steps have been performed. The commenter also notes the lack of data regarding the effect on the quality of the wine when using the Emission Control Systems over an entire fermentation cycle. The way to prove such a track-record is straight-forward: (1) attach the Emission Control Systems to closed fermentation tanks before fermentation begins, (2) measure all inputs and outputs from the closed systems (including waste products), (3) analyze the resulting data to develop a performance standard, (4) conduct repeated tests of the systems under all	Establishment of a different review process is unnecessary. The NoMoVo and EcoPAS technologies have already proven their ability to capture and control ethanol emissions from the wine fermentation tanks at the CCWS facility since 2013 and 2015, respectively. These emission control systems meet our achieved in practice standard of having a "proven track record" (see Response 2-6 above). To date, no winery in California has been required to implement BACT for a new or modified stationary source under a New Source Review permit. BACT is designed as an ever-evolving program. This allows the District to review and require new technologies and/or advancements in existing technologies. The wine industry has reached the point where emission control technology is available and has proven its effectiveness. The NoMoVo, EcoPAS and Terravant

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Item	Summarized Comment	Response
	likely conditions of use – including with different types of grapes and styles of wine – in order to validate the performance standard, and (5) document the testing.	technologies are first generation emission control systems. All three technologies have many years of real world operation. As noted by EPA in their September 30, 2016 letter to the SJVAPCD, these three control technologies are achieved in practice. The commenter advances a valid point regarding the need to continue the evaluation of emission control technologies used for wineries. This evaluation will provide wine makers and emission control vendors with more information to better enhance and refine their processes and technologies. We encourage affected parties and the Wine Institute to work together in pursing this positive and proactive goal for future generations of emission controls. Lastlythe commenter provides no evidence that use of an emission control device affects the quality of the wine. These systems are "passive" and thus the behavior of the fermentation process is not impacted. Further, these control systems have been in operation since 2013 (2008 for Terravant) and there have been no reports of wine quality issues. CCWS is a custom crush wine center that creates wine for many companies. They have produced many cases of wine since 2013 using tanks connected to the control systems. There are many variables that affect the quality of wine, however, experience at CCWS shows that use of a passive emission control system on the fermentation tank is not one of them. Most importantly, CCWS never raised an issue of the effect of the control systems on wine quality at any point in the permitting process.
2-8	There is no basis for accurately estimating a performance standard for the Emission Control Systems. There is no data	We do not concur. The emission standard selected is based on vendor guarantees. The District reviewed these guarantees against actual data

ATTACHMENT M
District Responses to Wine Institute Comments on Draft Permit

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	from which a performance standard can be accurately determined for the Emissions Control Systems as applied to a tank over a complete fermentation cycle. The absence of such information is especially significant for a facility such as CCWS, which provides winemaking services to multiple different vineyards and winemakers, producing wine from different varieties of grapes and in different styles. The emissions from these multiple types of wines have been shown to vary significantly.	reported by CCWS from use of these actual control devices on their specific fermentation tanks. This real-world actual data that we observed and evaluated confirms that the vendor guarantees are properly selected for this process. As noted in Response 2-7, it is not necessary to endeavor on the commenter's 5-step evaluation process. For future generations of emission control systems at wineries, establishing an updated performance standard may be necessary (e.g., new data is available, updates to technologies, etc.). Updates to the standards would be performed at the time of future New Source Review permitting actions, concurrent with the newer information and technology, not now. The permit and BACT determination are not "tank" specific, "grape" specific, or "style" specific. In establishing BACT for this permit, we listened to the concerns of the applicant and fully understood the limits of the emission calculations. A mass balance approach to calculating the emissions and control device performance is used for this permit. The emission calculations are based on established EPA/ARB emission factors, coupled with measurement of actual ethanol collected by each control device. Most importantly, the District addressed the numerous issues raised by the commenter regarding individual tank emission rates as well as different grape characteristics by utilizing an averaging basis for the emission standard and compliance mechanism for enforcing that standard. Specifically, a 30-day rolling average for calculating the capture and control efficiency is used. The intent for using this methodology is to average out any specific variability issues related to the fermentation process. We believe that this is a reasonable approach for implementing a first generation control system. This procedure also

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District Responses to Wine Institute Comments on Draft Permit

Item	Summarized Comment	Response
		comports well to CCWS's existing monitoring, recordkeeping and reporting (MRR) processes.
2-9	CCWS's application reflects the lack of any data to support a BACT determination. Although the manufacturers of the Emission Control Systems have guaranteed that they will meet a 67 percent performance standard over an entire fermentation cycle, the EcoPAS guarantee does not apply to the first quarter of a fermentation cycle. As the application notes in the BACT Analysis Summary Form for the EcoPAS system, the "Performance Standard" is "To Be Determined". The capture efficiency of the NoMoVo system is similarly uncertain. NohBell presents a range of possible capture efficiencies from 45% to over 90%. The application notes that the Performance Standard is uncertain.	The District believes that the commenter's concerns are not relevant to this permit and BACT determination. The BACT standard was established based on the understanding that emissions will be based on a mass balance approach (as has been done since 2013) and that compliance with the standard would be based on a 30-day rolling average calculation. The vendor guarantees correctly note the constraints of their stated efficiency value. A 30-day rolling average addresses these constraints, and is a reasonable approach to enable the BACT process to move forward without being bogged down by excessive analytical roadblocks. We are not using control device inlet/outlet source testing as that approach is not well suited to the batch process nature of a typical fermentation cycle (typically 7-15 days). As noted by the control device vendors, the efficiency of their control systems will vary over the entire fermentation cycle. This is a known limitation and is exactly the reason why the District is using the 30-day rolling average approach. See also our comments in Response 2-8 above.
2-10	In its response to the draft permit, CCWS notes that the District agreed that the performance standard in the draft permit was essentially a placeholder, and that the actual control efficiency would be determined during the Source Compliance Demonstration Period. In effect, the District has decided to require the Emission Control Systems so that their efficacy can be demonstrated by CCWS during its operations under the permit. If the efficiency of the Emissions Control Systems cannot even be reasonably	The comment is incorrect. First, nowhere in CCWS's June 7, 2017 letter do they state that the District agreed that the performance standard was a "placeholder". Second, the District never made such a statement to CCWS. As noted in our responses to the commenter's prior comments above, the District established the performance standard of 67 percent based on vendor guarantees, our review of the technologies, a review of the use of these specific technologies at this facility since 2013 and comments/input from CCWS directly. This

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District Responses to Wine Institute Comments on Draft Permit

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	estimated before implementation, those systems do not have a "proven track-record" and are not "achieve in practice".	performance standard is well founded and certainly is not a "placeholder". The conclusions the commenter draws from the written documents are incorrect. At the pre-application meeting, the District and CCWS discussed the performance standard. CCWS expressed concerns regarding how compliance will be established as well the implications if the performance standard could not be met. The District noted that the purpose of the SCDP is to work out issues that arise during startup and to debug the systems as needed. The District explained that if issues with achieving the performance standard were encountered, CCWS and its vendors would first have to evaluate the technical reasons for the systems not achieving their designated control levels and then implement necessary fixes. We noted that this is standard operating practice and that most issues are resolved during this debugging period. This applies across the board for all ATC permits (e.g., low NOx burners in a boiler). We further discussed how this situation is special since it is a first generation BACT determination. We noted to CCWS that the District recognizes this situation, and that if after all the debugging is completed, all the technical analyses are completed, all the modifications/changes to the control systems are completed and any permit MRR changes are completed, that it is clear that the performance standard cannot be achieved, the District would then be open to modifying the control efficiency value via a modification to the ATC permit.
2-11	The District's analysis in the draft permit of whether the Emissions Control Systems have been achieved in practice is conclusory. The District relies on an EPA letter, which	The District disagrees with the commenter's observations. The District's analysis is based on years of solid operational information at the facility in question. As noted in numerous responses above, these

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	does not provide any additional information regarding whether the Emissions Control Systems have been achieved in practice, and the use of the Emission Control Systems at the CCWS facility. The Emission Control Systems have not been used consistently over all operating ranges at CCWS, and their effectiveness has not been documented on even a single tank.	emission control systems have been effectively capturing and collecting ethanol emission from the wine fermentation processes at CCWS since 2013. CCWS's daily records document this. The comments regarding "consistent use" and "control system effectiveness" have already been rebutted in our responses above and these comments are simply not relevant to the BACT determination. Lastly, the District believes the EPA's September 30, 2016 letter to the SJVAPCD further substantiates our BACT determination. We appreciate and welcome guidance from our oversight agencies. In generating their letter, the EPA had full access to and reviewed all the CCWS daily records.
2-12	Notably absent from the District's BACT analysis is any discussion of the San Joaquin Valley APCD's February 9, 2015 internal memo providing a thorough analysis of whether the Emission Control Systems are "achieved in practice".	Thank you for sharing this internal SJVAPCD memo and bringing it to our attention. It is important to point out that each agency implements their NSR program in a fashion that best meets their programmatic design and goals. Nonetheless, we have reviewed the memo, and disagree with its conclusions. Our intent is not to criticize the SJVAPCD's work. The following are a few brief points that bear mentioning: • Our view is that this memo is out of date. It does not reflect the feedback and direction that the EPA provided the SJVAPCD in their September 30, 2016 letter. We believe this significant issue makes the memo's analyses and conclusions obsolete. The EPA's September 30, 2016 letter is clear that they have determined the three emission control systems currently in operation in Santa Barbara County are "achieved in practice". These systems include the use of the NoMoVo and EcoPAS system at CCWS as well as the water scrubber technology used at the Terravant Wine Center. The EPA followed up with

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		another letter on October 7, 2016 reiterating their concerns that the SJVAPCD had issued permits to wineries that "...do not represent Best Available Control Technology...". The commenter's reliance on the SJVAPCD memo fails to recognize the points raised by SJVAPCD's oversight agency. • The memo correctly points out that the term "achieved in practice" is subject to interpretation since it is not defined in any regulation. As such, this memo only represents SJVAPCD's point of view (one that is not even shared by their oversight agencies). Other agencies may differ and have their own, reasonable interpretations. • SJVAPCD developed seven criteria for evaluating whether existing winery emission control technologies can be designated achieved in practice in their review process. As noted, it is their prerogative to develop whatever guidance they deem necessary for their program. It would be incorrect, however, for the commenter to assume that other air districts would be in total agreement with SJVAPCD's analysis. • Terravant (2008-Current). The following statement is incorrect: "The control technology is only required to run sufficiently to reduce emissions below the offset threshold – it is not required to be operated all of the time...". Terravant's permits have always required their emission control system to be operational at all times when fermentation is occurring. • Terravant (2008-Current): The memo states "The packed bed scrubber technology does not meet the achieved in practice criteria since the control technology has not been operating in compliance with its permit requirements...". Working with the

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		vendor, Terravant has been able to remedy the issues with the control device's control efficiency. Proper maintenance and operation of the controls were the main issues. Source tests (inlet/outlet) for the past few years have shown the system to be operating in compliance with permit requirements. Since 2014, five source tests show the efficiency of the controls at: 75%, 84%, 86%, 81%, and 84%. • Terravant (2008-Current). The following statement is incorrect: "...SBCAPCD staff indicated that...they would not recommend that any wineries use this control technology...". Staff between SJVAPCD and SBCAPCD discussed winery controls on a number of occasions. It is likely that a general discussion of the issues regarding the control system was misinterpreted into the statement that appears in this memo. Nonetheless, operations in the past 3 years shows positive results and we have no doubts about this emission control system. • Terravant (2008-Current). The memo states "The packed bed scrubber technology does not meet the achieved in practice criteria since ... the control technology is not commercially available." The equipment that comprise this emission control system are "off-the-shelf" as water scrubbers, pumps, tanks, UV lights (etc.) are all purchasable equipment. The company that designed this control system, or any other company familiar with the design of packed bed scrubber control systems, would not have any difficulty designing a similar system. Even BACT emission control equipment for mature source types must be designed, ordered and custom built.

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		• Central Coast Wine Service (2013): The statement "SBCAPCD has yet to approve the disposal of the NoMoVo slurry to the on-site wastewater facility" is not relevant since we approved the disposal of this slurry to an off-site ethanol distiller. • Central Coast Wine Service (2014/15): The memo states "The refusal of the control vendors to demonstrate the actual control efficiency raises significant questions and concerns over the vendors' control efficiency claims...". The vendors' concerns were valid. As discussed above, a fermentation cycle is a batch process with air emissions that fluctuate from beginning to end. At the beginning of the cycle ethanol emissions are lower, therefore the control efficiency will be more difficult to maintain. During the rest of the cycle, when ethanol emissions are higher, the control efficiency is easier to maintain. Emission control devices are typically more efficient with higher inlet loading. The vendors' guarantees are based on the entire fermentation cycle, as they did not want an inlet/outlet source test to be performed at the beginning of a cycle when efficiencies would be expected to be lower. This is a reasonable concern and is why we selected the 30-day rolling average approach in our draft ATC 15044 permit.
2-13	The District's March 1, 2017 email to CCWS implicitly acknowledges that source testing is feasible, because the EPA plans to perform such testing and the District plans to use the EPA's method when it is developed. The District's email also recognizes that the "mass balance calculations" are a stop-gap until inlet/outlet source testing is conducted.	The commenter has drawn incorrect conclusions. The email states that the EPA may "potentially" do a study to "evaluate" source testing methodologies. The EPA is not currently doing a study nor is such a study on their current task list. A "potential" to "evaluate" does not mean that the District "acknowledges" that testing is "feasible". The only thing the District acknowledges is that if the EPA ever developed

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	Once that source testing conducted, the District will use that source testing for "new projects".	a new source test method for wineries that we may use that method for new projects. This would have no effect on the requirements of operations permitted under ATC 15044.
2-14	The "mass-balance" calculations that the District proposed to use to estimate the effectiveness of the Emission Control Systems are subject to considerable variability and should not be the basis for a determination that the Emission Control Systems have been "achieved in practice".	We do not concur. EPA/ARB fermentation emissions factors are used by air agencies for assessing emissions from wineries. We agree that these emission factors are based on the entire batch fermentation process. That is why the vendors' are uneasy about having performance standards based on snapshot inlet/outlet source tests. As noted above, the District has addressed this issue by establishing a performance standard based on a 30-day rolling average. Using the mass-balance calculation methodology is a practical and reasonable approach. It allows companies like CCWS to address BACT for their facilities in a sensible manner and provides them a path forward for their expansion efforts using monitoring, recordkeeping and reporting tools that are already in use. It also provides the vendors a practical performance standard that they can guarantee and provides the District a practical enforcement mechanism to ensure the controls are working. This is the first generation of BACT for this source type. Future generations will evolve as improvements to the control technologies are developed.
2-15	The commenter concludes by re-iterating their arguments that the NoMoVo and EcoPAS emission control systems should not be considered achieved in practice BACT.	The District, for the reasons provided in the responses above, disagrees with the commenter. The emission control devices proposed by CCWS are achieved in practice BACT.

Central Coast Wine Services
2717 Aviation Way, Suite 101
Santa Maria, CA 93455
(805) 318-6500 FAX (805) 928-5629

Central Coast Wine Services

April 26, 2017

Engineering and Compliance Division
Santa Barbara County Air Pollution Control District
260 North San Antonio Road Suite A
Santa Barbara CA 93110

Subject: Central Coast Wine Services (FID 11042; SSID 10834)
Authority to Construct Application

To whom it may concern:

Enclosed please find an Authority to Construct application (Form APCD 01) to modify the allowable uses for the 400-series tanks in PTO 14696. This application also seeks authority to construct a barrel room capable of holding up to 2,500 oak barrels.

In addition to Form APCD-01, also enclosed are, a detailed process description, tank and barrel room drawings, Forms APCD-02 and technical specifications for the control devices, and the application filing fee of $385.00.

Confidentiality

According to California Government Code Section 6254.7, Central Coast Wine Services (CCWS) has designated certain parts of this application as confidential trade secrets. CCWS has prepared this submittal in accordance with Santa Barbara County Air Pollution Control District Policies and Procedures Policy No. 6100.020.2016, Handling of Confidential Information. CCWS understands that as specified in this policy, "trade secrets are defined as (but are not limited to) any formula, plan, pattern, process, tool, mechanism, compound, procedure, production data, or compilation of information which is not patented, which is known only to certain individuals within a commercial concern who are using it to fabricate, produce, or compound an article of trade or a service having commercial value and which gives its user an opportunity to obtain a business advantage over competitors who do not know or use it."

Please let us know if there are any questions or comments.

Sincerely,

Richard Mather
Business Manager
Central Coast Wine Services

Enclosure

Central Coast Wine Services

Central Coast Wine Services
2717 Aviation Way, Suite 101
Santa Maria, CA 93455
(805) 318-6500 FAX (805) 928-5629

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Please let us know if there are any questions or comments.

Sincerely,

Richard Mather
Business Manager
Central Coast Wine Services

Enclosure

General Permit Application Form -01

Santa Barbara County Air Pollution Control District
260 N. San Antonio Road, Suite A
Santa Barbara, CA 93110-1315

1. APPLICATION TYPE (check all that apply):

[X] Authority to Construct (ATC)
[ ] Permit to Operate (PTO)
[ ] ATC Modification
[ ] PTO Modification
[ ] Other (Specify) _____

[ ] Transfer of Owner/Operator (use Form -01T)
[ ] Emission Reduction Credits
[ ] Increase in Production Rate or Throughput
[ ] Decrease in Production Rate or Throughput

Previous ATC/PTO Number (if known) PTO 14696

[ ] Yes [X] No Are Title 5 Minor Modification Forms Attached? (this applies to Title 5 sources only and applies to all application types except ATCs and Emission Reduction Credits). Complete Title 5 Form -1302 A1/A2, B, and M. Complete Title 5 Form -1302 C1/C2, D1/D2, E1/E2, F1/F2, G1/G2 as appropriate. http://www.ourair.org/wp-content/uploads/t5-forms.pdf

Mail the completed application to the APCD's Engineering Division at the address listed above.

2. FILING FEE:
A $385 application filing fee must be included with each application. The application filing fee is COLA-adjusted every July 1st. Please ensure you are remitting the correct current fee (the current fee schedule is available on the APCD's webpage at: http://www.ourair.org/district-fees). This filing fee will not be refunded or applied to any subsequent application. Payment may also be made by credit card by using the Credit Card Authorization Form at the end of this application.

3. IS YOUR PROJECT'S PROPERTY BOUNDARY LOCATED OR PROPOSED TO BE LOCATED WITHIN 1,000 FEET FROM THE OUTER BOUNDARY OF A SCHOOL? If yes and the project results in an emission increase, submit a completed Form -03 (*School Summary Form*). http://www.ourair.org/wp-content/uploads/apcd-03.pdf [ ] Yes [X] No

If yes, provide name of school(s): _____

Address of school(s): _____

City: _____ Zip Code: _____

4. DOES YOUR APPLICATION CONTAIN CONFIDENTIAL INFORMATION? [X] Yes [ ] No
If yes, please submit with a redacted duplicate application which shall be a public document. In order to be protected from disclosure to the public, all information claimed as confidential shall be submitted in accordance with APCD Policy & Procedure 6100-020 (*Handling of Confidential Information*): http://www.ourair.org/wp-content/uploads/6100-020.pdf, and meet the criteria of CA Govt Code Sec 6254.7. Failure to follow required procedures for submitting confidential information, or to declare it as confidential at the time of application, shall be deemed a waiver by the applicant of the right to protect such information from public disclosure. *Note: Part 70 permit applications may contain confidential information in accordance with the above procedures, however, the content of the permit documents must be public (no redactions).*

FOR APCD USE ONLY				DATE STAMP
FID		Permit No.		
Project Name				
Filing Fee			202.E? YES / NO	

WI 0423

5. COMPANY/CONTACT INFORMATION:

Owner Info	[ ] Yes [X] No	Use as Billing Contact?			
Company Name	Central Coast Wine Warehouse, LLC				
Doing Business As	Central Coast Wine Services				
Contact Name	Richard Mather	Position/Title	Business Manager		
Mailing Address	2717 Aviation Way, Suite 101				
City:	Santa Maria	State	CA	Zip	93455
Telephone	(805) 450-8219	Fax	(805) 928-5629	Email	rmather@thornhillcompanies.com

Operator Info	[X] Yes [ ] No	Use as Billing Contact?			
Company Name	Central Coast Wine Warehouse, LLC				
Doing Business As	Central Coast Wine Services				
Contact Name	Richard Mather	Position/Title	Business Manager		
Mailing Address	2717 Aviation Way, Suite 101				
City:	Santa Maria	State	CA	Zip	93455
Telephone	(805) 450-8219	Fax	(805) 928-5629	Email	rmather@thornhillcompanies.com

Authorized Agent Info*	[ ] Yes [X] No	Use as Billing Contact?			
Company Name	M. F. Strange & Associates, Inc.				
Doing Business As					
Contact Name	Marianne Strange	Position/Title	Environmental Consultant		
Mailing Address	P. O. Box 1484				
City:	Santa Barbara	State	CA	Zip	93102
Telephone	805-564-6590	Fax	805-564-8007	Email	mstrange@mfsair.com

*Use this section if the application is not submitted by the owner/operator. Complete APCD Form -01A (http://www.ourair.org/wp-content/uploads/apcd-01a.pdf). Owner/Operator information above is still required.

SEND PERMITTING CORRESPONDENCE TO (*check all that apply*):

[ ] Owner [X] Operator

[X] Authorized Agent [ ] Other (attach mailing information)

6. GENERAL NATURE OF BUSINESS OR AGENCY:

Custom Crush Winery – Wine Storage

7. EQUIPMENT LOCATION (Address):

Specify the street address of the proposed or actual equipment location. If the location does not have a designated address, please specify the location by cross streets, or lease name, UTM coordinates, or township, range, and section.

Equipment Address: 2717 Aviation Way, Suite 101

City: Santa Maria State: CA Zip Code: 93455

Work Site Phone: (805) 450-8219

[X] Incorporated (within city limits) [ ] Unincorporated (outside city limits) [ ] Used at Various Locations

Assessors Parcel No(s): 111-29-21

8. PROJECT DESCRIPTION:

(Describe the equipment to be constructed, modified and/or operated or the desired change in the existing permit. Attach a separate page if needed):

Central Coast Wine Services (CCWS) seeks to modify the operational restrictions in PTO 14696 on the 400-series tanks to allow fermentation of red or white wines in any of these tanks. Additionally, CCWS seeks to install a barrel room with a capacity for 2500 oak barrels. These barrels will be used for fermentation and storage.

See Attached Process Description for details of the application request.

9 DO YOU REQUIRE A LAND USE PERMIT OR OTHER LEAD AGENCY PERMIT FOR THE PROJECT DESCRIBED IN THIS APPLICATION? [ ] Yes [X] No

A. If **yes,** please provide the following information

Agency Name	Permit #	Phone #	Permit Date

***** The lead agency is the public agency that has the principal discretionary authority to approve a project. The lead agency is responsible for determining whether the project will have a significant effect on the environment and determines what environmental review and environmental document will be necessary. The lead agency will normally be a city or county planning agency or similar, rather than the Air Pollution Control District.

B. If **yes,** has the lead agency permit application been deemed complete and is a copy of their completeness letter attached?

[ ] Yes [ ] No [X] N/A

Please note that the APCD will not deem your application complete until the lead agency application is deemed complete.

C. If the lead agency permit application has not been deemed complete, please explain.

D. A copy of the final lead agency permit or other discretionary approval by the lead agency may be requested by the APCD as part of our completeness review process.

10. PROJECT STATUS

A. Date of Equipment Installation: Upon issuance of IPAP or ATC

B. Have you been issued a Notice to Comply (NTC) or Notice of Violation (NOV) for not obtaining a permit for this equipment/modification *and/or* have you installed this equipment without the required APCD permit(s)? If yes, the application filing is double per Rule 210. [ ]Yes [X]No

C. Is this application being submitted due to the loss of a Rule 202 exemption? [ ]Yes [X]No

D. Will this project be constructed in multiple phases? If yes, attach a separate description of the nature and extend of each project phase, including the associated timing, equipment and emissions. [ ]Yes [X]No

E. Is this application also for a change of owner/operator? If yes, please also include a completed APCD Form -01T. [ ]Yes [X]No

11. APPLICANT/PREPARER STATEMENT:

The person who prepares the application also must sign the permit application. The preparer may be an employee of the owner/ operator or an authorized agent (contractor/consultant) working on behalf of the owner/operator (an *Authorized Agent Form -01A* is required).

I certify pursuant to H&SC Section 42303.5 that all information contained herein and information submitted with this application is true and correct.

Marianne F. Strange
Signature of application preparer

4/26/17
Date

Marianne F. Strange
Print name of application preparer

M. F. Strange & Associates
Employer name

12. APPLICATION CHECKLIST (*check all that apply*)

[X] Application Filing Fee (Fee = $385.00. The application filing fee is COLA adjusted every July 1st. Please ensure you are remitting the current fee.) As a convenience to applicants, the APCD will accept credit card payments. If you wish to use this payment option, please complete the attached *Credit Card Authorization Form* and submit it with your application.

[ ] Existing permitted sources may request that the filing fee be deducted from their current reimbursable deposits by checking this box. Please deduct the filing fee from my existing reimbursement account.

[ ] Form -01T (*Transfer of Owner/Operator*) attached if this application also addresses a change in owner and/or operator status from what is listed on the current permit. http://www.ourair.org/wp-content/uploads/apcd-01t.pdf

[ ] Form -03 (*School Summary Form*) attached if the project's property boundary is within 1,000 feet of the outer boundary of a school (k-12) and the project results in an emissions increase. http://www.ourair.org/wp-content/uploads/apcd-03.pdf

[X] Information required by the APCD for processing the application as identified in APCD Rule 204 (*Applications*), the APCD's *General APCD Information Requirements List* (http://www.sbcapcd.org/eng/dl/other/gen-info.pdf), and/or one of the APCD's Process/Equipment Summary Forms (http://www.ourair.org/permit-applications).

[X] Form -01A (*Authorized Agent Form*) attached if this application was prepared by and/or if correspondence is requested to be sent to an Agent Authorized (e.g., contractor or consultant). This form must accompany each application. http://www.ourair.org/wp-content/uploads/apcd-01a.pdf

[X] Confidential Information submitted according to APCD Policy & Procedure 6100-020. *(Failure to follow Policy and Procedure 6100-020 is a waiver of right to claim information as confidential.)*

13. NOTICE OF CERTIFICATION:

All applicants must complete the following Notice of Certification. This certification must be signed by the Authorized Company Representative representing the owner/operator. Signatures by Authorized Agents will not be accepted.

NOTICE of CERTIFICATION

I, Richard Mather, am employed by or represent
Type or Print Name of Authorized Company Representative

Central Coast Wine Services
Type or Print Name of Business, Corporation, Company, Individual, or Agency

(hereinafter referred to as the applicant), and certify pursuant to H&SC Section 42303.5 that all information contained herein and information submitted with this application is true and correct and the equipment listed herein complies or can be expected to comply with said rules and regulations when operated in the manner and under the circumstances proposed. If the project fees are required to be funded by the cost reimbursement basis, as the responsible person, I agree that I will pay the Santa Barbara County Air Pollution Control District the actual recorded cost, plus administrative cost, incurred by the APCD in the processing of the application within 30 days of the billing date. If I withdraw my application, I further understand that I shall inform the APCD in writing and I will be charged for all costs incurred through closure of the APCD files on the project.

For applications submitted for Authority to Construct, modifications to existing Authority to Construct, and Authority to Construct/Permit to Operate permits, I hereby certify that all major stationary sources in the state and all stationary sources in the air basin which are owned or operated by the applicant, or by an entity controlling, controlled by, or under common control with the applicant, are in compliance, or are on approved schedule for compliance with all applicable emission limitations and standards under the Clean Air Act (42 USC 7401 *et seq.*) and all applicable emission limitations and standards which are part of the State Implementation Plan approved by the Environmental Protection Agency.

Completed By: Richard Mather Title: Business Manager

Date: 04/26/2017 Phone: (805) 450-8219

Signature of Authorized Company Representative: Richard L. Mather

PLEASE NOTE THAT FAILURE TO COMPLETELY PROVIDE ALL REQUIRED INFORMATION OR FEES WILL RESULT IN YOUR APPLICATION BEING RETURNED OR DEEMED INCOMPLETE.

Santa Barbara County
Air Pollution Control District

Print Form

Authorized Agent Form
Application Form -01A

Santa Barbara County Air Pollution Control District
260 N. San Antonio Road, Suite A
Santa Barbara, CA 93110-1315

I hereby designate **Marianne F. Strange**
(agent's name - print)

of **M. F. Strange & Associates**
(agent's business name - print)

to serve as the Authorized Agent for my company: **Central Coast Wine Services**
(applicant or permitted company's name - print)

at **2717 Aviation Way, Santa Maria, CA 93455**
(facility name(s) - print)

in dealing with the Santa Barbara County Air Pollution Control District (APCD) in matters regarding (check as appropriate):

- [x] Permitting
- [ ] Billing
- [x] Air Toxics/HRA
- [x] Source Testing
- [x] Inspections and Permit Compliance
- [ ] All of the above
- [ ] Other (state purpose):

This Designation included written correspondence, telephone discussions and meetings and shall remain in effect until it is suspended in writing by my company or the following date: _____ whichever is earlier.

As a designated Responsible Official, I hereby authorize the above mentioned agent to represent my company in the matters identified above:

Name (print)	**Richard Mather**
Title	**Business Manager**
Phone	**(805) 450-8219**
Email	**rmather@thornhillcompanies.com**
Address	**2717 Aviation Way, Suite 101**
City, State, Zip	**Santa Maria, CA 93455**
Signature	Richard L. Mather

For APCD use only. FID # _____ **App. #** _____

CCWS
400-Series Tank Modification & Barrel Room Addition

ATC Application – Process Description

Central Coast Wine Services (CCWS) is seeking to modify the allowable uses of the existing 400-series tanks in PTO 14696. Ten (10) of these tanks are currently permitted for wine storage and fermentation of white wines. The remaining thirty (30) tanks are permitted for wine storage only. CCWS is seeking to modify these operational limitations through this Authority to Construct (ATC) application. CCWS is requesting to have all forty (40) of the 400-series tanks available for red or white wine fermentation as well as wine storage. Table 1 below summarizes the current and proposed uses for the 400-series tanks.

Table 1 – 400-Series Tank Details

APCD Device ID	Tank No.'s	Qty	Current Use	Proposed Use	Individual Tank Capacity, gal	Net Capacity, gal
388059	401-405 & 411-415	10	F&S (White Fermentation Only)	F&S	14980	149800
388060	421, 423-424, 452	4	S	F&S	14980	59920
388061	422, 431-434, 441-444, 451, 453-454	12	S	F&S	20736	248832
388062	461-465, 471-475, 481-484	14	S	F&S	7527	105378

In addition to these operational changes to the 400-series tanks, CCWS is requesting authority to construct barrel storage and fermentation in the existing room immediately north of the tank room. (See Attachment A: Drawings Sheets B3 & B4). This barrel room will be capable of containing up to 2500 oak barrels. These barrels will be used for both fermentation and storage.

Emissions Control

Per Condition 12 of PTO 14696, this ATC represents an increase in facility emissions; therefore the requirements of Best Available Control Technology (BACT) as described in Rule 802.D (New Source Review) are applicable to this project.

The District is in the process of registering the EcoPAS and NohBell control technologies as BACT in the CARB database and has given instructions that CCWS should consider these technologies as BACT for this project. Accordingly, CCWS agrees that one of these controls will be in place any time fermentation is occurring in a 400-series tank. Additionally, CCWS agrees to apply emission's control to the legacy tanks in the facility during all fermentation.

As per the District's guidance on emission controls on the 400-series tanks and legacy fermentation tanks, CCWS requests that the ROC emission limit for the entire facility be increased to 240 pounds per day: Facility Emission Offset requirement threshold. CCWS understands that a project emission limitation of 240 pounds per day may not be allowable due to the results of an Air Quality Impact Analysis (AQIA) per Rule 802.G. Therefore, a project emission limit between 120 pounds per day (AQIA threshold) and 240 pounds per day could be agreed upon per the results of the District's AQIA analysis.

BACT Control Efficiency

Each vendor of the emissions control devices has provided CCWS with individual performance guarantees for their technologies. It is CCWS' understanding that the District will be conditioning this permit with similar recordkeeping requirements as the existing facility permit (PTO 14696). Additionally, the BACT efficiency of these technologies will be based upon the combined capture rates on a rolling thirty-day efficiency as measured during the Source Compliance Demonstration Period (SCDP). The rolling thirty-day efficiencies will then be used to establish the permitted BACT control efficiency for this project.

CCWS would like to request that the permitted BACT efficiency be based upon the lowest of the thirty-day efficiencies measured during SCDP minus five percent. Experience has shown that the efficiencies of these technologies are both very dependent upon the fermentation stage of the must in the tanks that are being controlled. There are also variables within each season that could affect the efficiency of these technologies across any thirty day period: variability in the Brix numbers of the fruit being delivered (affected by weather), variability in the profiles of fruit deliveries (affected by the weather), and the variety of wines being fermented during any thirty day period (affected by the market). CCWS is confident that any permitted BACT control efficiency established using the lowest SCDP control efficiency minus 5% will be achievable in future years.

EcoPAS Technology

Attachment B contains a District Form 02, EcoPAS literature, and a performance guartenttee for the EcoPAS control technology. Notable in this performance guarantee are:

- The performance guarantee requires a minimum and maximum vapor flow rate to the control device (50 to 300 CFM)
- The performance guarantee is not valid when the Brix reduction is less than 25% (e.g. first 25% of fermentation).
- The performance guarantee is not valid when the tank man-ways are open. (tank man-ways are frequently required to be open during the fermentation process).

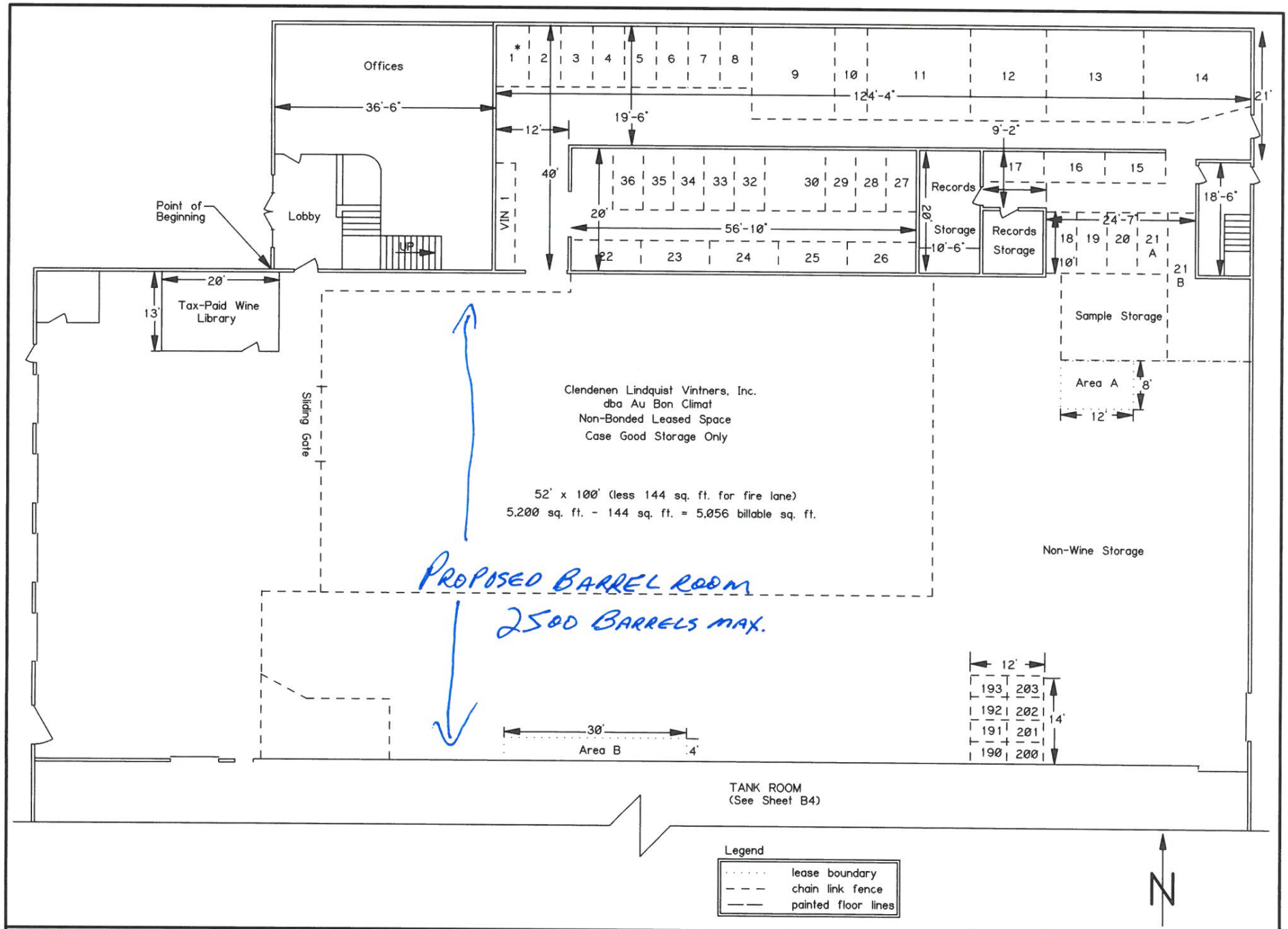
NohBell's NoMoVo Technology

Attachment C contains a District Form 02, NohBell literature, and a performance guartenttee for the NoMoVo control technology. Notable in this performance guarantee are:

- The variability of the absorption efficiency across a single fermentation cycle.
- NohBell is confident that, taking into account the stated variable nature of their technology, and the unknown performance of the capture manifold, this device can still obtain a 67% overall capture and absorption efficiency. NohBell engineering has a solid understanding of winemaking operations at CCWS and has incorporated that understanding into their estimation of the impacts of the intermittent nature of the capture manifold into their performance guarantee. However, this understanding still requires validation.

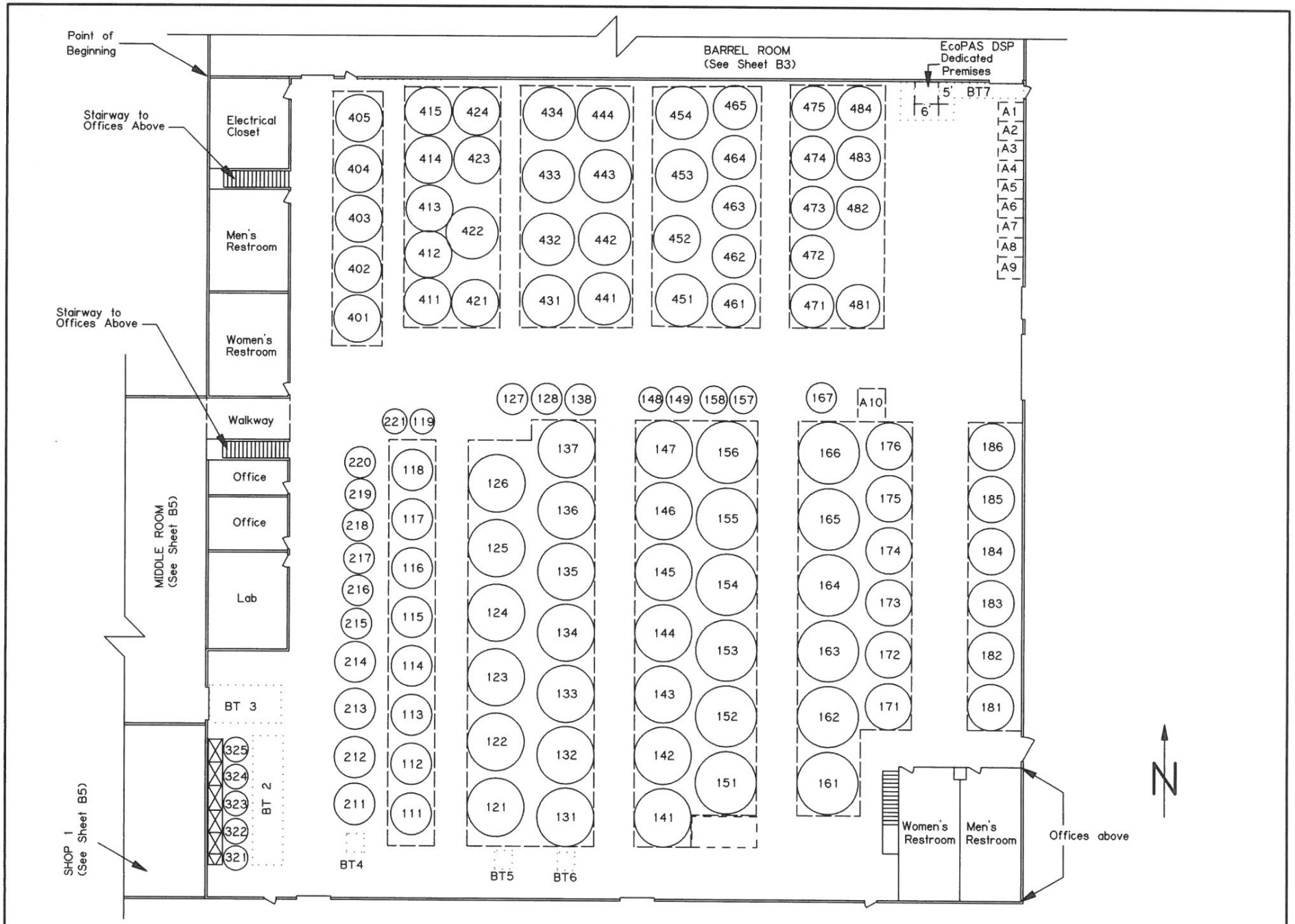
Attachment A

Facility Drawings



Project for: Central Coast Wine Services	Sheet title: The 16K Room	Scale: 1" = 20'	Sheet No.: B3
Location: 2717 Aviation Way Santa Maria, CA 93455		Drawn: JT	
		Date: 02/10/17	

WI 0433



Project for: Central Coast Wine Services	Sheet title: TANK ROOM	Scale: 1" = 30'	Sheet No.: B4
Location: 2717 Aviation Way Santa Maria, CA 93455		Drawn by: LB	
		Date: 8/03/15	

WI 0434

Attachment B

EcoPAS Technology

Santa Barbara County
Air Pollution Control District
Our Vision: Clean Air

BACT ANALYSIS SUMMARY FORM

This form must be submitted by all applicants when Best Available Control Technology ("BACT") is required, except for small sources that utilize BACT as listed on the APCD's *Small Source BACT List*, for which case this form is not required. This form supplements APCD Regulation II and applicable APCD application guideline documents. Please fill in all sections of this form completely. Also, fill in a separate form for each emissions unit subject to BACT (multiple units with the same BACT may use only one form). Use additional sheets as necessary.

COMPANY NAME: Central Coast Wine Services (CCWS) DATE: April 20, 2017

FACILITY\SOURCE NAME: Central Coast Wine Services – Santa Maria Winery

1. POLLUTANT(S) SUBJECT TO BACT REVIEW: ROC (Ethanol)

2. EMISSION UNIT(S)/PROCESS(ES) SUBJECT TO BACT REVIEW: Closed Tank Fermentation

3. BACT SUMMARY:

   Technology: Vapor Condensation – EcoPAS

   Performance Standard: To be Determined – EcoPAS has provided CCWS with a performance guarantee of 67%. However this control efficiency has not been validated. Limitations of the capture system were not taken into consideration. Only with proper validation can a real control efficiency be assigned to this combination of vapor capture and ethanol extraction from the vapor stream. Performance as described is only valid when determined by the existing mass-balance process.

4. BACT SELECTION PROCESS DISCUSSION: On a separate sheet of paper, describe the justification for the selected control technology as BACT. Include the following in your description: documentation of technical infeasibility which would preclude the use of a more effective control technology; operating conditions at which the maximum daily and hourly emissions will be generated (baseline parameters); maximum daily and hourly emissions at the baseline conditions and the basis of how the emission rates were estimated; calculations, emission data, and/or other information to determine control effectiveness of each potential control technology; and emission limits expressed both in terms of an emissions cap (e.g., pounds per day) and in terms which ensure compliance at any operating capacity (e.g., pounds per million British thermal units, or parts per million by volume).

APPLICATION No

5. BACT EFFECTIVENESS: Discuss how BACT will be effective over all operating ranges.

This technology is not effective over all operating ranges. These devices operate passively and require a minimum vapor flow before performance is guaranteed. Additionally, performance is not guaranteed during the first 25% of Brix reduction.

6. BACT DURING NON-STANDARD OPERATIONS: Discuss whether the proposed BACT is achievable during non-standard operations and if not, what BACT is for those operations.

BACT will not be achievable during non-standard operations. During non-standard operations the control efficiency will be zero. Non-Standard operations are any time the tank man-way is opened to perform normal winemaking operations (e.g. visual inspections or tank pump-overs).

7. OPERATING CONSTRAINTS: Identify all process variables for which operating limits need to be set in order to ensure compliance with the selected BACT standards.

To Be Determined

8. MONITORING BACT: Describe, in detail, how the selected BACT is to be monitored for its emission reduction effectiveness.

Until a source test protocol is promulgated by the US EPA, as has been indicated, effectiveness will be determined by mass balance calculations using existing recordkeeping protocols.

9. ALTERNATE BASIC EQUIPMENT: Discuss whether alternate basic equipment (e.g., electric motors in lieu of IC engines) can be applied to this application.

No alternatives are known

10. [X] Yes [ ] No Will this be a multi-year and/or multi-phase project?

11. [X] Yes [ ] No Are all referenced documents attached?

12. [ ] Yes [X] No If PSD BACT is triggered, was a detailed Top-Down BACT Analysis prepared and submitted with the application? Please be aware that the applicant is responsible for providing the APCD with this analysis.

Performance Guarantee

Proposal #17102
Date: April 14, 2017

1. **Guarantee**
    a. EcoPAS guarantees that the Combined Capture & Control Efficiency of the PAS-100 system operating at CCWS will be 67% or higher, provided that all Performance Conditions are met.
2. **Definitions**
    a. "Capture Efficiency"
        i. The percentage of air emission that is collected and routed to the control equipment is referred to as capture efficiency.
    b. "Control Efficiency"
        i. The percentage of air pollutant removed from the exhaust/venting stream by the control device.
    c. "Combined Capture & Control Efficiency"
        i. Overall VOC removal percentage is derived from the multiplication of *capture efficiency (%)* by *control efficiency (%)*.
    d. "Performance Conditions"
        i. The conditions under which this guarantee is valid
    e. "Performance Test"
        i. The test method agreed upon to determine if Combined Capture & Control Efficiency % is achieved.
3. **Performance Conditions**
    a. Primary Conditions
        i. Flow
            1. Vapor flow (CO_2, water vapor, and ethanol vapor) shall be greater than 50 CFM and less than 300 CFM
        ii. Fermentation stage
            1. The average stage of fermentation for all tanks connected and fermenting at a given time shall be between 25% and 100% Brix reduction

b. Secondary Conditions (generally required to meet primary conditions)
    i. Physical
        1. All manway covers and lids shall mate properly to reduce vapor leaks at the perimeter of lids. (One or more of the lids last season were warped and did not seal effectively during fermentation.)
        2. All manway gaskets must be supple and compressible. Over time the neoprene gaskets lose flexibility and allow leakage at the manway lids.
        3. Manifold connections must be tight and capable of operating without leaks while under slight backpressure. (<0.2 psi)
        4. Adequate glycol flow (5gpm) and incoming temperature (33-36dF) must be delivered to the PAS.
        5. Foam-overs shall be avoided by maintenance of adequate tank headspace (>15% tank capacity). If lower headspace percentages are anticipated, a foam-over preventer will need to be installed at each manway valve assembly.
    ii. Operational
        1. Cellar crew must connect hoses to manifold and direct vapor exhaust flow into manifold system to PAS
        2. Manway lids and gaskets shall be flat (not folded over) and centered to avoid leaks that will reduce capture efficiency. This should be checked each time a lid is opened and reset.
        3. When lid is lifted for additions, pumpovers or other winemaking purpose hose valve must be set to bypass. Duration of lid opening should be recorded and once lid is closed following operation, the valve should be reset to collect.
        4. When manway lid is reclosed during active fermentation, valve should be returned to the “collect” position and the manway lid rechecked to ensure it is centered and that there is no perceptible vapor leak around the perimeter of the lid
        5. A running log of condensate volume collected and proofing is to be maintained by CCWS laboratory staff.

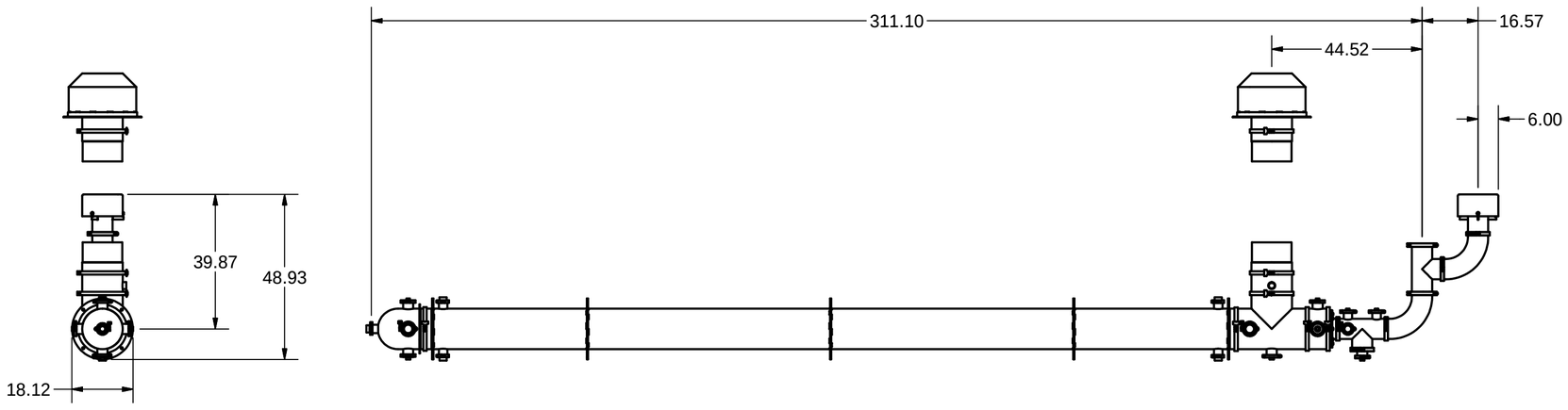
4. Performance Tests

a. The Performance Test shall be a comparison of calculated emissions to actual captured VOCs.
b. Emissions shall be calculated using an agreed-upon formula, based on ARB emissions factors. Required inputs for this calculation shall include, at a

minimum, connected fermenting tank fill volumes, daily brix reduction, and fermentation temperatures.

c. Captured VOCs shall be calculated by multiplying daily collection volume by ethanol concentration %
d. Captured VOCs, divided by calculated emissions, shall yield a CC&CE %.
e. The test period will be a minimum of 3 sequential days, all in full compliance with the Performance Conditions, and EcoPAS shall have the right to approve and witness Performance Tests.
f. If the system does not satisfy Performance Guarantee as determined by the Performance Test, then EcoPAS shall, at our option, either:
    i. Repair, replace, or modify the system until it satisfies the Performance Guarantee, or
    ii. Pay CCWS as liquidated damages in full satisfaction of all claims arising out of failure to meet Performance Guarantee, and amount equal to all payments made to us under this contract.

PARTS LIST		
ITEM	QTY	PART NUMBER
1	1	1002.517A.0
2	7	1002.636.0
3	13	1002.632.0
4	1	1002.518.0
5	1	1002.522.0
6	3	1002.525-working.0
7	1	1002.526-12.0
8	1	1002.526-18.0
9	1	1002.527-1.0
10	1	1002-528.0
11	2	1002.529.0
12	2	1002.530.0
13	1	1002.531.0
14	1	1002.532.0
15	2	1002.610.0
16	1	1002.521.0-edit
17	1	1002.519-G.0
18	2	1002.524-Neoprene.0
19	1	1002.524-Stainless.0
20	8	92198A628
21	8	washer_0.375
22	13	TriClamp-6.0
23	2	1002.518-A.0
24	6	1002.518-C.0
25	16	1002.629.0
26	9	1002.628.0
27	2	1002.518-D.0
28	5	1002.518-F.0
29	2	1002.518-H.0
30	3	1002.518-I.0
31	9	TriClamp-2.5
32	1	1002.524-Silicone.0
33	1	1002.523.0
34	16	TriClamp-3.0
35	2	1002.519-L.0
36	3	1002.519-K.0
37	7	6-TriClamp
38	1	1002.514.0
39	1	55-Gallon_Drum-Closed_Head



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CHECKED		TITLE: General Arrangement - Horizontal	
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MFG			
APPROVED		SIZE C	DWG NO 1002.503.0 REV
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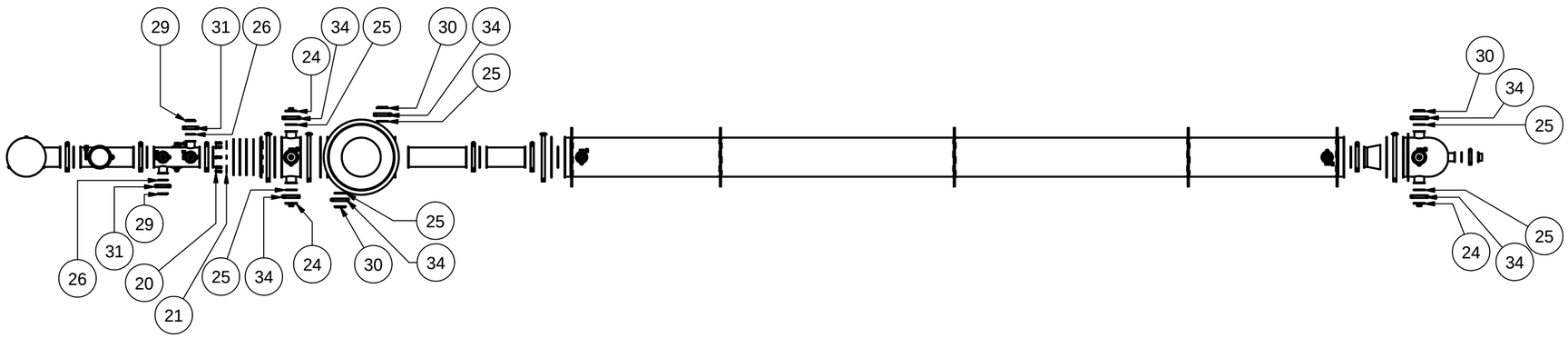
WI 0441



PARTS LIST		
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3	13	1002.632.0
4	1	1002.518.0
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6	3	1002.525-working.0
7	1	1002.526-12.0
8	1	1002.526-18.0
9	1	1002.527-1.0
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13	1	1002.531.0
14	1	1002.532.0
15	2	1002.610.0
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20	8	92198A628
21	8	washer_0.375
22	13	TriClamp-6.0
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33	1	1002.523.0
34	16	TriClamp-3.0
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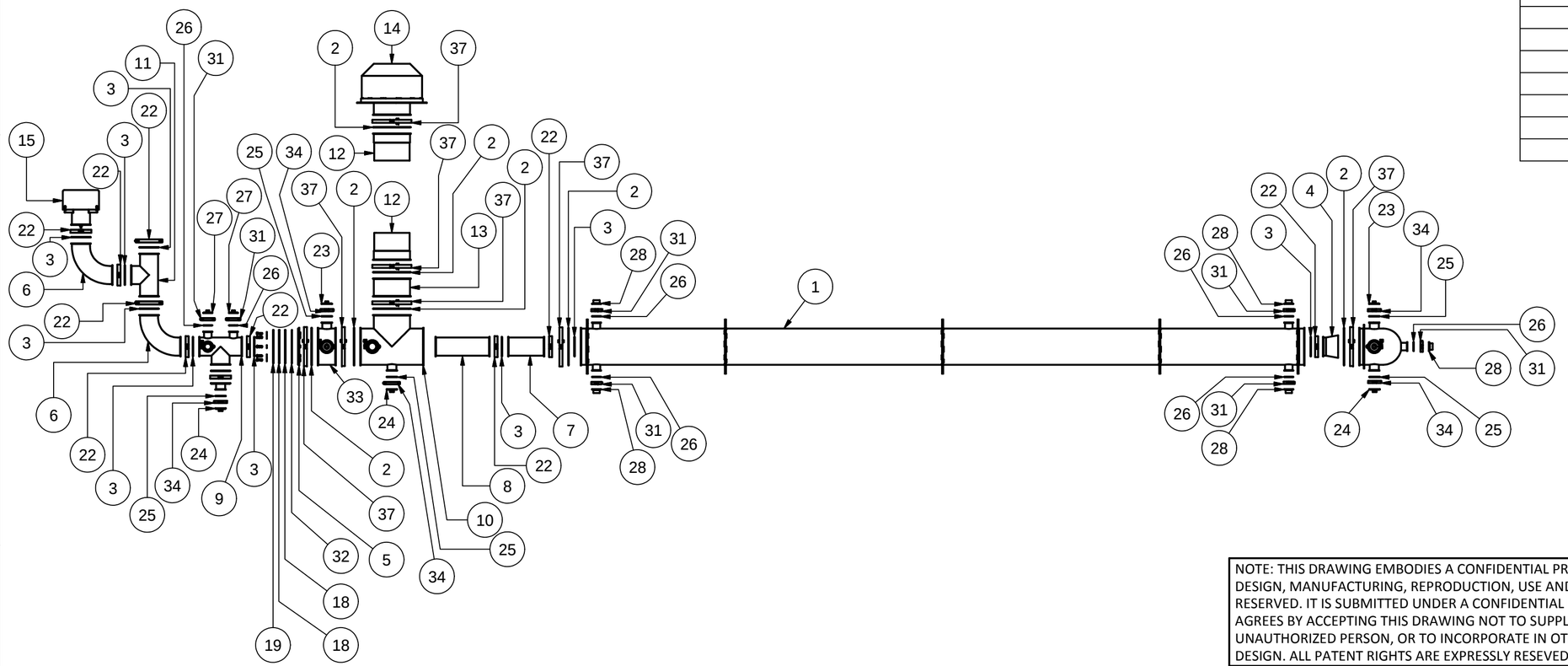

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DRAWN	Marci	1/4/2013
CHECKED		
QA		
MFG		
APPROVED		

EcoPAS, LLC

TITLE: General Arrangement - Horizontal Exploded

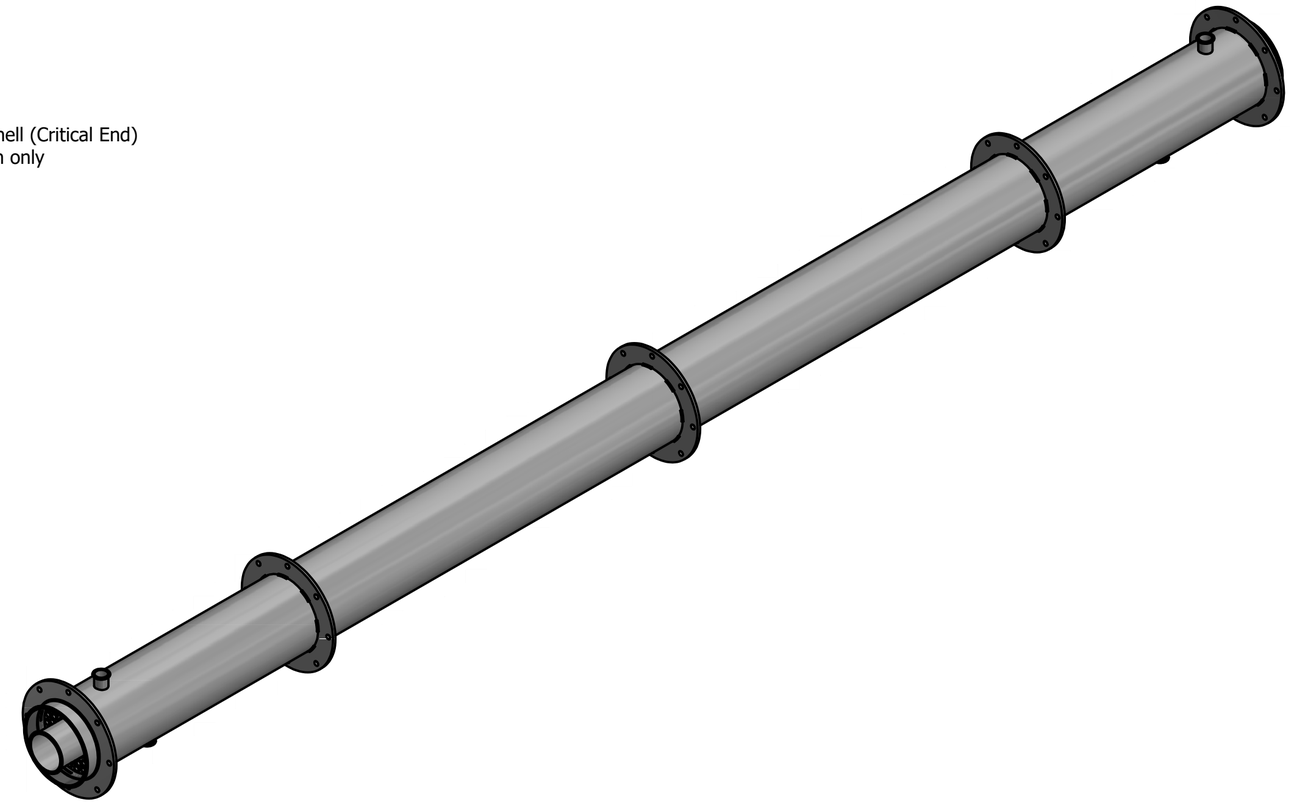
SIZE		DWG NO	REV
C		1002.503.0-EXPLODED	

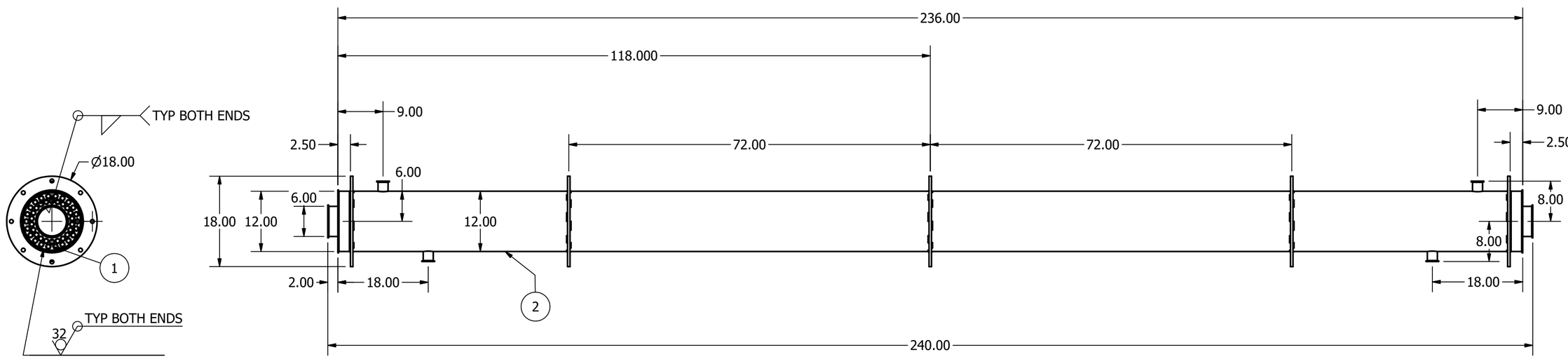
SCALE 1/32 SIZE SHEET 1 OF 1

WI 0442

NOTES:

- Insert tube bundle assembly (Part #1002.516.0) and set 6" Inner Tube (Critical End) flush with 12" Shell (Critical End)
- Do not remove material on welds connecting the Inner Barrel with the Condenser Shell (typ 2) - polish only





CRITICAL END

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
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2	1	1002.510.1	Condenser Shell

T304SS
RA-32 finish
650-lbs

DRAWN	Marci	12/10/2012
CHECKED		
QA		
MFG		
APPROVED		

EcoPAS, LLC

TITLE: Condenser, Assembled

SIZE: C | DWG NO: 1002.517.0 | REV:

SCALE: 1/16 SIZE | SHEET 1 OF 1

WI 0443

PAS
Passive Alcohol System

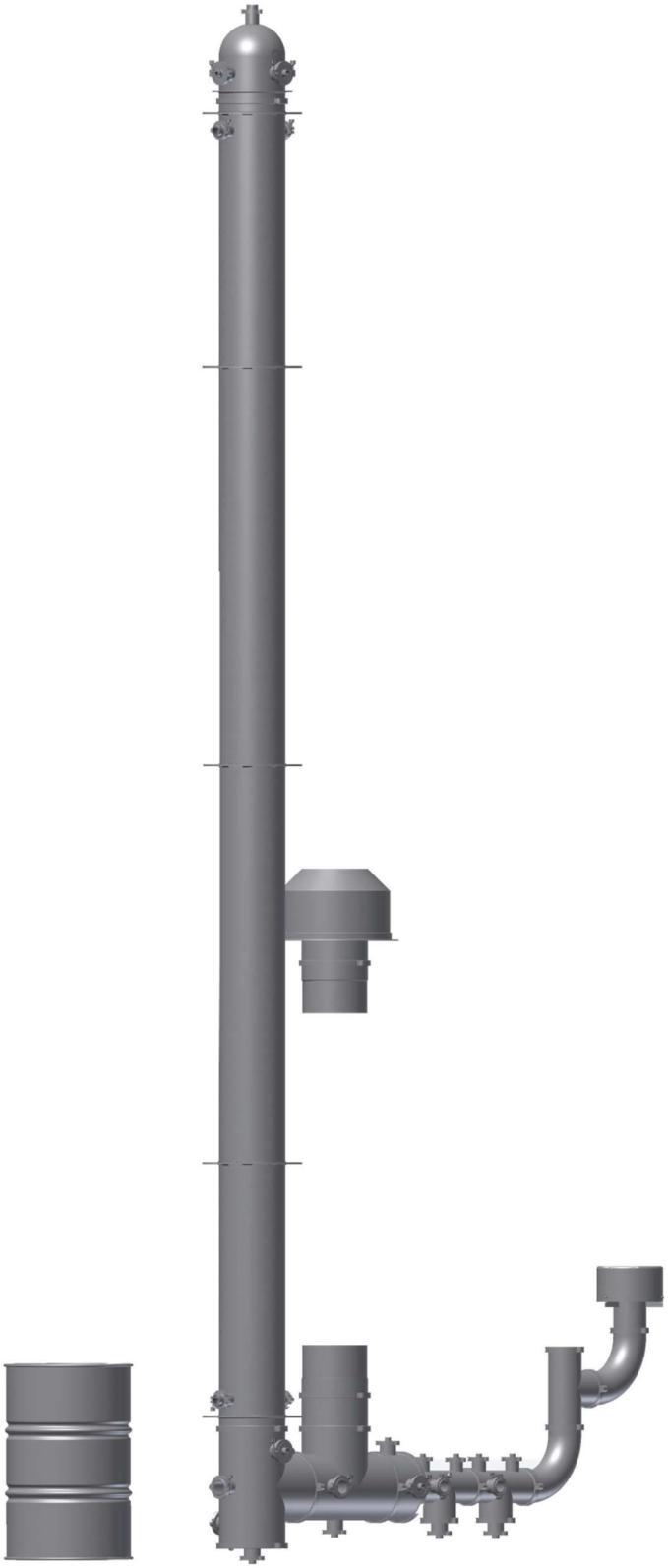
PAS Operator Manual

Version 2015-1.0

EcoPAS

Innovation Science & Engineering Solutions for the Wine Industry

WI 0444



EcoPAS, LLC was established in 2007 to provide innovative solutions for the wine industry. We take pride in our integrity, expertise, and service to our customers. Our mission is to bring scientific and technological innovations to the wine industry, create the highest quality and best-value products, and do no harm to winemaking or the environment.

EcoPAS Products:

- FermenTracker
- Ferment Inspect - software
- Passive Alcohol System (PAS)

Symbol Legend:


Caution


Warning


Explosion Hazard

Stop and observe carefully before proceeding


Shock Hazard


Asphyxiation Hazard

Table of Contents

Chapter 1 - General Information

1. Function

   The Passive Alcohol System (PAS) device is intended for fugitive ethanol capture, commonly emitted during wine fermentation. The primary function of the device is to reduce the ozone impact created by the entrained ethanol (EtOH) with the carbon dioxide (CO_2) which is released during primary wine fermentation. A secondary function on the device is utilization of the captured ethanol-water mixture for other purposes, such as: increase the alcohol in the host wine; a spirit beverage; pharmaceutical; cosmetic; food; fuel; and, other applications that utilize a food-grade ethanol.

2. Purpose

   PAS is designed as a food-grade application device which is compatible with wine production and use with standard winery equipment, such as fermentation tanks, house glycol system, and tri-clamp connections.

3. Use

   The device is engineered to operate at less than 5"-H_2O pressure. The piping system, manifolds, and hoses must not contain any traps or liquid retention locations, other than at the liquid capture tanks designed for that purpose. All components are designed to be self-draining without use of mechanical, electrical, or other means of drainage. No fans, pumps, or other power-activated air-handling devices are required for the operation of the PAS device as intended.

4. Specifications

   Prior to installation of the PAS in any configuration or application, it is recommended that the attachment/support method be reviewed by a State Licensed Professional Structural Engineer. Review of the seismic forces, wind forces, PAS unit weight (including glycol), and moment on the tank/structure supporting the PAS unit should be considered in addition to other forces and field conditions. When charged with refrigerant (such as glycol), the PAS device total dead weight can exceed 1,200-lbs (>545-Kg).

   Depending on the configuration, the **<u>minimum</u>** suggested installation clearance is:

   Horizontal Mount (such as: ground or platform): 4' h x 30' w x 4' d
   Vertical Mount (such as: tank, wall, or column): 30' h* x 10' w x 4' d
   **Allowance for drain hoses and capture tanks not included in height*
   Note: dimensions are approximate and depending on obstacles and varying field conditions, smaller or greater clearances could be required.

   A valved chilled glycol supply and return connection with hoses is required. Ideally, the glycol supply should be between 34°-F (1°-C) to 40°-F (4°-C), although other temperatures may be utilized effectively as explained in the "Installation" section of this

manual. Depending on the PAS orientation, distance from the supply and return piping and fittings, the required minimum glycol system pressure will vary. It is recommended that a review by a Licensed Professional Mechanical Engineer or other professional familiar with the system determine the required minimum delivery pressure and total loss created by the PAS and connections. Depending on the required flow volume and unit orientation, the pressure loss through the PAS unit could vary between 0.04-psi to 0.18-psi (1" H_2O to 5" H_2O).

The glycol supply line to the PAS device should be the same pipe size or larger than the device connection. The glycol return line from the PAS device should be the at least one pipe size larger than the device connection. It is recommended that a Licensed Professional Mechanical Engineer determine the supply and return piping size or contact EcoPAS for assistance.

5. Warnings

To prevent possible injury and damage to the fermentation tank and PAS device, never operate the PAS device with a greater must volume, higher daily Brix reduction, and higher must temperature than intended for safe operation range of the device. Use the EcoPAS calculator (available upon request) or the formula below (based upon the Lynn Williams formula for CO_2 potential release from wine fermentation); note: typically, 190 g/L is a more accurate factor for most commercial wine fermentation rather than the 240 g/L utilized for personnel Life-Safety calculations.

Lynn Williams Formula for Potential CO_2 Release (Life-Safety Factor@ ≈27-Bx start):

$$\frac{Liters\ CO_2}{Liter_{juice}} = \left[\frac{22.4\ Liters}{mole_{CO_2}}\ x\ \left(\frac{240\ grams}{Liter}\ x\ \frac{1\ mole_{sugar}}{180\ grams}\ x\ \frac{2\ moles_{CO_2}}{1\ mole_{sugar}}\right)\ x\ \frac{273.2+T_{must\ °C}}{273.2}\right]$$

Suggested Formula for Potential CO_2 Release to the PAS device:

$$\frac{Liters\ CO_2}{Liter_{juice}} = \left[\frac{22.4\ Liters}{mole_{CO_2}}\ x\ \left(\frac{190\ grams}{Liter}\ x\ \frac{1\ mole_{sugar}}{180\ grams}\ x\ \frac{2\ moles_{CO_2}}{1\ mole_{sugar}}\right)\ x\ \frac{273.2+T_{must\ °C}}{273.2}\right]$$

Always utilize EcoPAS supplied components, gaskets, and recommended parts to insure proper and safe operation.

It is recommended that direct ventilation of the CO_2 gas be provided to atmosphere to prevent possible injury or death from lack of safe levels of oxygen and exposure to CO_2.

6. Safety

All components should be thoroughly sanitized prior to initial use, as well as, prior to and following each subsequent seasonal use. The PAS components are manufactured from materials that are commonly used within a winery and the winemaking process. Standard wine industry sanitation methods and procedures should be sufficient to clean and sanitize the PAS components; EcoPAS recommends following 3A guidelines for proper sanitation.

The PAS will be subjected to higher levels of alcohol than found in most sanitizing solution; minimal or no sanitizing should be required between use with the same or other tanks.

SAFETY CHECKS:

- Never operate the PAS device without verifying that the glycol supply and return lines are connected, the valves fully open, and that glycol is flowing through the device.
- Never operate the PAS without the appropriately sized capture tanks connected and the drain valves fully open.
- To avoid over-pressurizing the fermentation tank and PAS, verify that the Tank Manufacturers maximum suggested pressure is not exceeded.
- Verify the EcoPAS Pressure Release Valve (PRV) and the tank PVR are installed properly, functioning as designed and intended, and, free of debris, sticky coating, and residual sugars.
- Avoid glycol supply temperature below 34°F (1°C), as freezing of the condenser tubes may occur typically before a Brix reduction of **at least** 1.75°-Bx below the initial starting Brix. Glycol temperatures below 20°F (-6°C) are not recommended at any time.

- Avoid glycol temperature above 40°F (4°C) to insure maximum capture efficiency.
- Insure that the PAS device is vented to atmosphere and exhausts in to a safe area.

- Maintains a safe clearance from air-handling equipment or intake vents; consider down-wash of the CO_2 (heavier than air) from the PAS exhaust vent.
- Prior to each operation:
    - Insure that all valves are in proper operating position.
    - Insure that there is sufficient capacity in the capture tanks for at least 150% of the calculated volume of captured liquid.

Chapter 2 – Installation

1. Safety

All components should be sanitized prior to initial use. Standard wine industry sanitary component cleaning and sanitation methods and procedures should be sufficient to clean and sanitize the PAS components; EcoPAS recommends following standard 3A guidelines for proper sanitation.

Prior to installing, connecting, or supporting the PAS device on any structure or building component, the installation and anchoring method should be reviewed by a Licensed Professional Structural Engineer.

WARNING: NEVER EXCEED the PAS rated capacity for process gases. Ferment tank pressure should **NEVER exceed 6" H_2O and ideally never greater than 5" H_2O**. Always calculate the total potential CO_2 release and system pressure prior to each operation to verify safe and effective operating ranges. See Formula in Section 1.5.

CONDITIONS AND INSTALLATIONS VARY: CHECK WITH AN APPROPRIATE LICENSED PROFESSIONAL ENGINEER IF BONDING AND GROUNDING MAY BE REQUIRED FOR SAFE OPERATION OF THE PAS UNIT AND CAPTURE STORAGE TANKS TO PREVENT POSSBLE FIRE OR EXPLOSION.

VERIFY IF REGULATIONS SUCH AS: NFPA 30 "FLAMMABLE AND COMBUSTIBLE LIQUIDS CODE", NFPA 91 "STANDARD FOR EXHAUST SYSTEMS FOR AIR CONVEYING OF VAPORS, GASES, MISTS, AND NONCOMBUSTIBLE PARTICULATE SOLIDS", AND SIMILAR REGULATIONS ARE APPLICABLE TO YOUR INSTALLATION, APPLICATION, AND USE.

VERIFY IF PERMITS ARE REQUIRED FOR THE DEVICE, INSTALLATION, AND OPERATION FROM THE AIR REGULATORY AGENCY HAVING JURISDICTION.

VERIFY IF PERMITS ARE REQUIRED FOR THE DEVICE, INSTALLATION, AND OPERATION FROM LOCAL BUILDING REGULATORY AGENCY HAVING JURISDICTION, SUCH AS: BUILDING, MECANICAL, FIRE, AND OTHER DEPARTMENTS/AGENCIES THAT MAY REQUIRE PERMITS.

Lightening Protection: It is recommended that lightning protection, in accordance with NFPA 780, be provided to prevent potential explosion and fire in case of a lightening or static discharge through the system.

CO_2 Asphyxiation: Carbon dioxide (CO_2) naturally released from the fermentation process is vented through the PAS unit. Insure that that the PAS vent placement is in a safe location with consideration of downdrafts, wind, and physical barriers which could direct the carbon dioxide into worker zones. Carbon dioxide is a colorless, odorless, non-flammable and slightly acidic liquefied gas. CO_2 is heavier than air and soluble in water.

2. Mounting
    a. PAS Unit
        i. The PAS may be installed and operate as intended in either a horizontal, vertical, or inclined orientation. Different connecting components are required for each configuration; verify you have the correct components for the orientation desired or contact EcoPAS for assistance.

    PAS mounting suggestions:
        1. Fermentation tank
        2. Post or column
        3. Rack or support frame at ground level
        4. Wall
        5. Cart
    b. Hoses
        i. Avoid condensate traps; position the PAS unit lower than the ferment tank connection and avoid increasing elevation with the hose between the tank connection and the PAS unit to insure proper drainage of condensate.
        ii. Provide allowance in the hose length for open/swing of the access port/lid/door to the fermentation tank, if the connection port is mounted to the ferment tank hatch port/lid/door.

3. Manifold
    a. The ferment tank connection port should be the same diameter or larger that the EcoPAS recommended hose size, except for ganged fermentations.

4. Process Hose
    a. If the captured ethanol is intended for beverage, pharmaceutical, or other food grade applications, than Teflon™ or PTFE lined hoses are recommended to avoid imparting a taste from the hose material.
    b. Hoses should be manufactured from materials and methods compatible with and compliant for food grade application and exposure to ethanol.

5. Pressure-Vacuum Relief (PVR) - [fermentation tank]
    a. For proper and efficient operation of the PAS unit, it is recommended that a PVR be installed that will release at pressures greater than 6" H_2O, ideally greater.

Chapter 3 – Operation

1. First Time Use

The PAS was design to last for many ferment seasons and function as a valuable tool to the winemaker. Utilize ONLY EcoPAS components or authorized components, as damage, improper operation, or explosion could occur. All components must be cleaned and sterilized prior to use. Standard winery sanitation and component sterilization practices should be sufficient for the PAS parts.

Read the manual carefully for information on the proper use and maintenance of the PAS device and components.

2. Sanitizing
   a. Utilize standard industry sanitizing procedures for wine fermentation tanks to sanitize the PAS and components, or:
      i. Thoroughly wash all components and flush the condenser tubes with cold water to remove any solids.
      ii. Utilize an industry standard sanitizing solution, such as one tablespoon sodium metabisulphite per gallon water, to flush and sanitize all components interior and exterior surfaces.
      iii. Flush all surfaces with hot water **at least** three times. A high-pressure hose is best, as it will help blast any remaining particulate and organisms from the walls.
      iv. Rinse with cold water and let dry.
      v. Utilize standard industry practices for sealing and protecting the unit after sanitizing, if the unit will be inactive (see Section 3.4).

3. Activation

   a. Ideally, the PAS device should be operated at 34°-F (1°-C) minimum to 40°-F (4°-C) maximum coolant temperature to prevent potential freezing of captured moisture within the condenser columns and maximize capture efficiency. While the device can operate at lower temperatures, operating below 34°-F (1°-C) could cause freezing of the captured water vapor and plug the condenser tubes; operating above 40°-F (4°-C) could reduce the capture efficiency. Extreme caution should be used if operating with a coolant (glycol) temperature below 34°-F (1°-C), as plugged condenser tubes could cause over-pressurization of the fermentation tank above a safe level and release of the ferment vapor through the PVR or the EcoPAS high-pressure PRV. If operating with a glycol temperature below 34°-F (1°-C), it is recommended that the device not be connected to the fermentation tank until at least a Brix reduction of 1.75°-Bx or greater. Typically, the alcohol level with the released CO_2 will be sufficient to lower the freezing point of any water vapor when the Brix reduction of the must has decreased 1.75°-Bx from the initial starting Brix.
   b. The PAS device may be operated effectively in the horizontal, vertical, or inclined positions. The device is designed to operate effectively in both interior and exterior applications, including exposure to direct sunlight. To reduce energy demand, an indoor or shaded location is preferred.

c. The PAS inlet manifold may be connected to the fermentation tank with either rigid tubing (such as T304/L or T316/L tubing) or flexible hose (ideally with a PTFE lining if the captured liquid will be utilized to fortify the wine or for other applications to prevent tainting the liquid with a potential plastic taste)

4. Deactivation
   a. Sanitize all components, as recommended Section 3.2 above, and seal all open ports with blank plates after the unit is thoroughly dry.

5. Annual servicing prior to first seasonal use
   a. Sanitize the PAS unit and components prior to initial use per Section 3.2.
   b. Test the PRV's and PVR for proper release pressure.
   c. Replace any warped, damaged, or worn gaskets.

Chapter 4 – Maintenance

The EcoPAS PAS unit and components are durable products and should exceed the longevity of the wine fermentation tank. Since there are no motors, pumps, electrical components, or fuel operated components, the only expected wear items are the springs (EcoPAS Pressure Relief Valve), hoses, and the PTFE Tri-Clamp gaskets.

1. Check hoses and piping periodically for "traps" that may contain liquid in the supply line.
    a. Exception: Traps are **required** in the drainage hoses to prevent release of EtOH vapors during low flow conditions.
    b. Hoses should be checked periodically for issues such as wear, abrasion, kinks, and pin holes.

2. Operation outdoors
    a. Exterior installation locations will be subjected to ambient temperatures (possibly varying from 0°-F to 120°-F), ultraviolet rays, infrared rays, wind, rain, snow, and other atmospheric conditions that could affect the performance of the PAS unit and system. While the unit and system should perform as intended under these conditions, variation of the refrigerant temperature or flow could be required.

3. Cleaning and Sanitizing
    a. Follow the instructions in Chapter 3.2.

Chapter 5 – Troubleshooting

1. Reduced Flow
   a) Check for a blockage in the system, such as:
      i) Closed, partially opened, or blocked valves
      ii) Frozen condenser tubes
      iii) Blank plate not removed
   b) Stuck or inactive ferment
   c) Hose or system component loose or disconnected

2. Whistling or unusual noise
   a) Excessive flow
   b) Ferment activity higher than expected
   c) Restriction, such as:
      i) Frozen condenser tubes
      ii) Particulate in hose, tubing, or condenser tubes
      iii) Foreign matter in hose or PAS unit
      iv) Blockage in system

3. Lower than normal capture
   a) Leakage in system
      i) Loose connections
      ii) Open by-pass valve
      iii) PVR leakage
      iv) PRV leakage
   b) Blockage in system
   c) No or low fermentation activity
   d) Low must temperature
   e) Sluggish ferment
   f) System coolant (glycol) temperature above 40°-F

4. System pressure greater than 6" H_2O
   a) Excessive flow
   b) Ferment activity higher than expected
   c) Restriction
      i) Frozen condenser tubes
      ii) Particulate in condenser tubes
      iii) Foreign matter in hose/unit
      iv) Blockage, check:
         (1) Condenser
         (2) Exhaust port

Chapter 6 – Service

If you should require assistance, guidance, spare parts, or repair of the PAS or any component, please contact us at:

EcoPAS, LLC
3579 East Foothill Blvd. #251
Pasadena, CA 91107-3119
626-539-5850
info@eco-pas.com email
www.eco-pas.com website

Prior to contacting EcoPAS, please have the following information available:

1) Serial number
2) Tank Identification Number
3) Tank Volume Capacity
4) Ferment Information:
    a) Must Gallons/Tons
        i) Varietal
        ii) Cap (yes/no)
        iii) Starting Brix
        iv) Current Brix
        v) Starting must temp
        vi) Current must temp
        vii) Glycol temperature at the PAS supply line
        viii) Glycol temperature at the PAS return line
5) Additional questions you may be asked when contacting EcoPAS for assistance:
    a) When did the issue first occur?
        i) Is it Intermittent?
    b) Are the ports plugged or blocked?
    c) Have you followed all the recommended component and system checks?

Chapter 7 – Replacement Parts

1) In the unlikely event that replacement parts are required, please contact EcoPAS for the proper component to insure continued safe and effective operation.

2) The Tri-clamp gaskets (utilize only PTFE gaskets) and clamps are available from suppliers such as:
    i. Austenitex
    (302) 504-3100
    www.austenitex.com

    ii. G.W. Kent
    (734) 572-1300
    www.gwkent.com/winery.html

    iii. McMaster-Carr
    (562) 692-5911
    www.mcmaster.com

Appendix A – Glossary and Reference

1. Technical terms
    a. Must: Freshly pressed fruit juice (usually grape juice) that contain the skins, seeds, and stems of the fruit; a mixture of the pomace and juice.

    b. 3-A Standards & Accepted Practices:
    3-A Sanitary Standards, Incorporated
    www.3-a.org

    c. Pressure Vacuum Relief (PVR): A device to prevent excessive pressurization or vacuum to a fermentation vessel due to abnormal conditions above or below a safe operating pressure.

2. Terms
    a. **Could:** possibility; not emphatic

    b. **Might:** an uncertainty; a possibility

    c. **Must:** certainty; emphatic

    d. **Shall:** emphatic; an obligation

    e. **Should:** awareness of a potential cause or action, but a potential unwillingness to follow the direction

    f. **Would:** a condition; may have been done under different circumstances

3. Potential Ethanol Release during Wine Fermentation:
    a. Lynn Williams formula:

$$LOG_{10}\left[\frac{EtOH_{potential\ loss}}{(S_0-S)^2}\right] = K_4 - \frac{K_5}{T+273}$$

***Formula converted for potential EtOH release*:**

$EtOH_{potential\ release}$ in grams per $Liter_{must} = 10^{\left\{K_4-\left[\frac{K_5}{T+273}\right]-LOG_{10}\left[\frac{1}{(S_0-S)^2}\right]\right\}}$

where,

$Brix_{start}$ = degrees Brix, start
$Brix_{finish}$ = degrees Brix, finish
K_4 = 6.682 *(constant)*
K_5 = 2552 *(constant)*
T = must temperature in degrees Celsius
$S_0 = \left[\frac{1}{1-\left(\frac{Brix_{start}}{261.3}\right)}\right] x\ 1000$
$S = \left[\frac{1}{1-\left(\frac{Brix_{fini}}{261.3}\right)}\right] x\ 1000$

b. CARB 5.1 Factor:

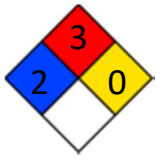
1. Red Wine: 6.2-lbs per 1,000-gallons$_{must}$

2. White Wine: 2.5-lbs per 1,000-gallons$_{must}$

3. Ethanol Data:

a.	Weight per US Gallon:	6.584 pounds
b.	Molecular Formula:	C_2H_6O
c.	Appearance:	colorless liquid
d.	Molar Mass:	46.06844 g/mol
e.	Boiling Point:	173°F, 78.37°C, 352-K
f.	Flash Point:	13°C (55.4°F)
g.	Vapor Pressure:	5.95 kPa (20°C)
h.	Density:	789 kg/m^3
i.	Acidity (pK_a):	15.9
j.	Refractive Index (n_D):	1.361 (20°C)
k.	Viscosity:	1.200 cP (20°C)
l.	Solubility in water:	miscible
m.	Hazard (Fire):	Flammable (F)

n. NFPA 704:



o. Classification:

Appendix B – Drawings

1. General Arrangement
    a. Horizontal Orientation; generic operation configuration
    b. Vertical Orientation; generic operation configuration
    c. Horizontal Orientation; testing configuration

2. Explosion View Drawing
    a. Horizontal Orientation
    b. Vertical Orientation
    c. Demonstration Configuration

3. Process & Instrumentation Drawing
    a. Vertical Orientation
    b. Horizontal Orientation
    c. Horizontal Orientation; testing configuration

PAS-100

Intro

The EcoPAS PAS-100 system is a smart condenser that captures ethanol emissions from primary fermentation during winery processing. The system uses glycol with a tube-in-shell condenser, custom designed to provide high capture efficiency, at a wide range of flow conditions, without negative impacts on the winemaking process (i.e., high headspace backpressure). CO2 released during fermentation is the driving force and carrier gas.

Figure 1: PAS-100, Operational since 2015 at Central Coast Wine Services

Operational Description

Wine fermentation is a biological batch process governed by yeast digestion of grape sugars. Carbon dioxide (CO2) production and ethanol emission change over the batch process and there is never a steady-state condition during a fermentation cycle.

The stoichiometry is well understood. When yeast ferment juice into wine, one mole of sugar is converted to equal molar amounts of carbon dioxide (CO2), and ethanol (EtOH):

$$C_6H_{12}O_6 \longrightarrow 2\ CH_3CH_2OH + 2\ CO_2$$

glucose — ethanol — carbon dioxide

The majority of CO2 produced and a fraction of EtOH produced are lost to the atmosphere. Some useful facts for this process:

1. Wine grapes are typically 20-25% sugar by weight
2. Each volume of wine produces approximately 60 volumes of CO2
3. EtOH is a polar compound, with one of the highest Henry's Law Constants, it easily hydrates and resists leaving the liquid phase
4. Vaporized EtOH is carried from the developing wine with the CO2 carrier gas
5. Yeast fermentation is an exothermic process and tank temperatures, without active cooling, can exceed 32ºC (90ºF)
6. The dominant parameters affecting vapor emission of EtOH are tank temperature and sugar content
7. Fermentation is seasonal and typically occurs between August and November

Fermentation temperature is the single most important factor affecting variation in emission strength for any given starting grape sugar concentration.

(see chart next page)

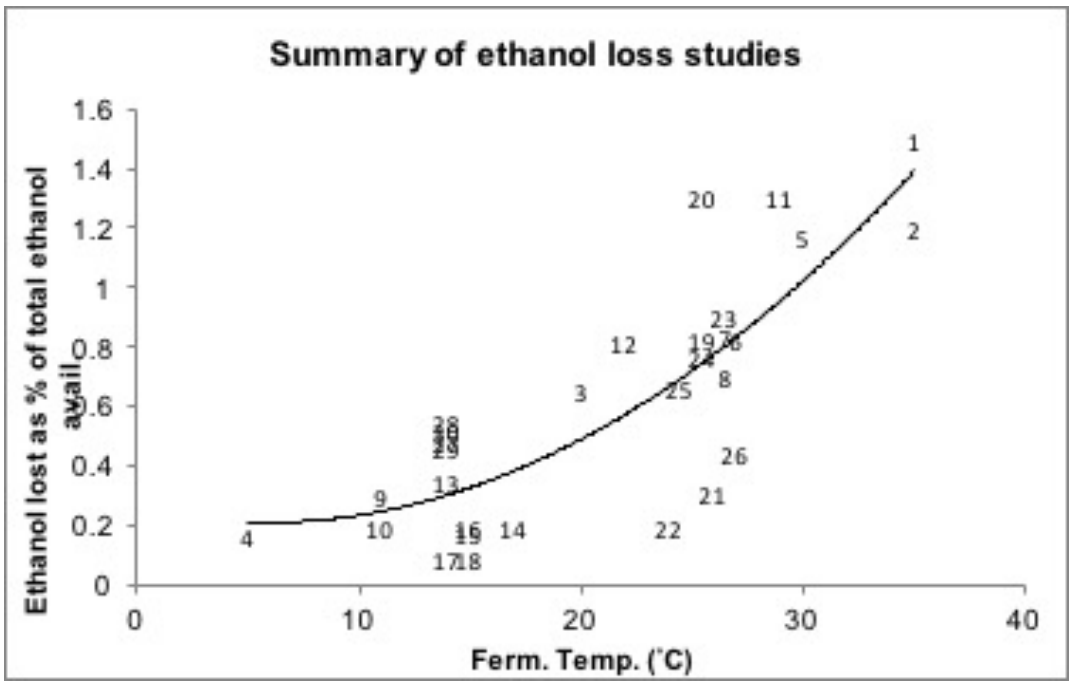


Figure 2: Ethanol lost as a % of total ethanol available with temperature (Fielder and Buamala 1982[1], Todd Castronovo, and Ouchida 1988[2]).

The following figure presents a modeled single batch fermentation based on a chemical engineering model of wine fermentation. Important for our understanding is the time-dependent profile of sugar consumption, CO2 production and ethanol emission. The relative positions of the CO2 and EtOH curves remain the same regardless of the batch duration.

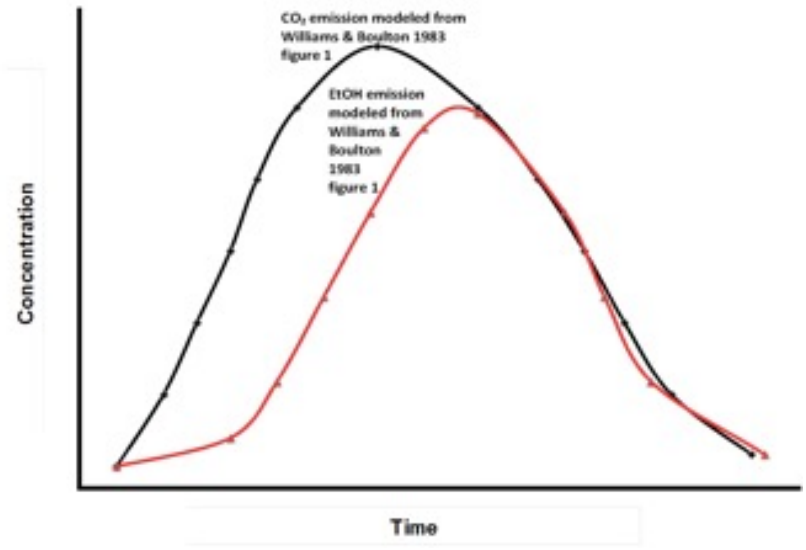


Figure 3: Modeled rates of CO2 production and ethanol emissions. (Williams and Boulton 1983[3]).

The PAS-100 system captures fugitive aromatic volatiles and ethanol vapor from wine fermentation. The resulting byproduct is a ~80-proof highly-aromatic spirit, that may have value. For example, it can be used to enhance the original wine, to "repair" a wine that might have list aromatics somehow, to cross-blend, or to be sold separately as a wine spirit (vodka, brandy, grappa, etc.) EcopAS has also demonstrated that the byproduct can be dehydrated or distilled up to be sold as a "Wine Spirits Addition" (or WSA) without loss of volatile aromatics.

Ground-level ozone forms with the chemical reaction of UV sunlight, nitrogen oxides and volatile organic compounds (VOCs) in the atmosphere. Ethanol vapor is a VOC, and California wineries thousands of tons of VOCs each year during a compressed period of time. Among other health impacts, Ozone is known to cause inflammation and damage to the lining of the lungs. The damaged lungs cells are shed and replaced much like the skin peels after a sunburn. When this type of inflammation happens repeatedly, lung tissue becomes permanently scarred, resulting in permanent loss of lung function and a lower quality of life.

California has some of the worst air quality in the nation, including the most number of areas designated by the EPA as severe ozone non-attainment zones.

The PAS-100 system enables wineries to cost-effectively make a positive impact of air quality. And, as markets are made for the aromatic byproducts, it is possible that the "waste" stream can even become a profit center.

The PAS-100 may be installed on a single tank or multi-tank configuration. May be mounted to a catwalk, ferment tank, post, cart, wall or support structure. No electrical, compressed air or natural gas required.

References

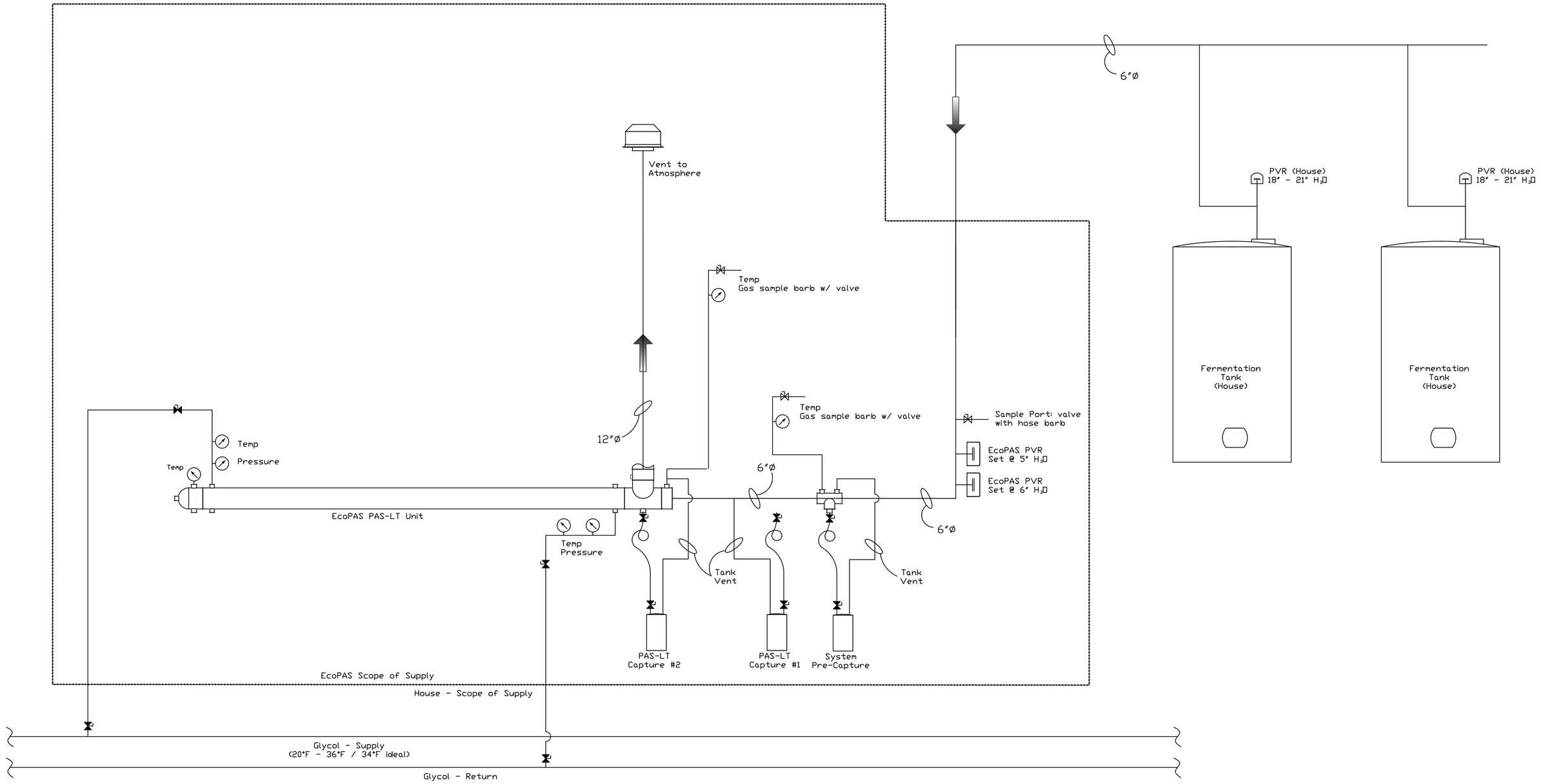
[1]Fielder, D.R., and P.A. Baumala 1982. Characterization of ethanol emissions from wineries. Research Division California Air Resource Board. Fig.13 p.53.

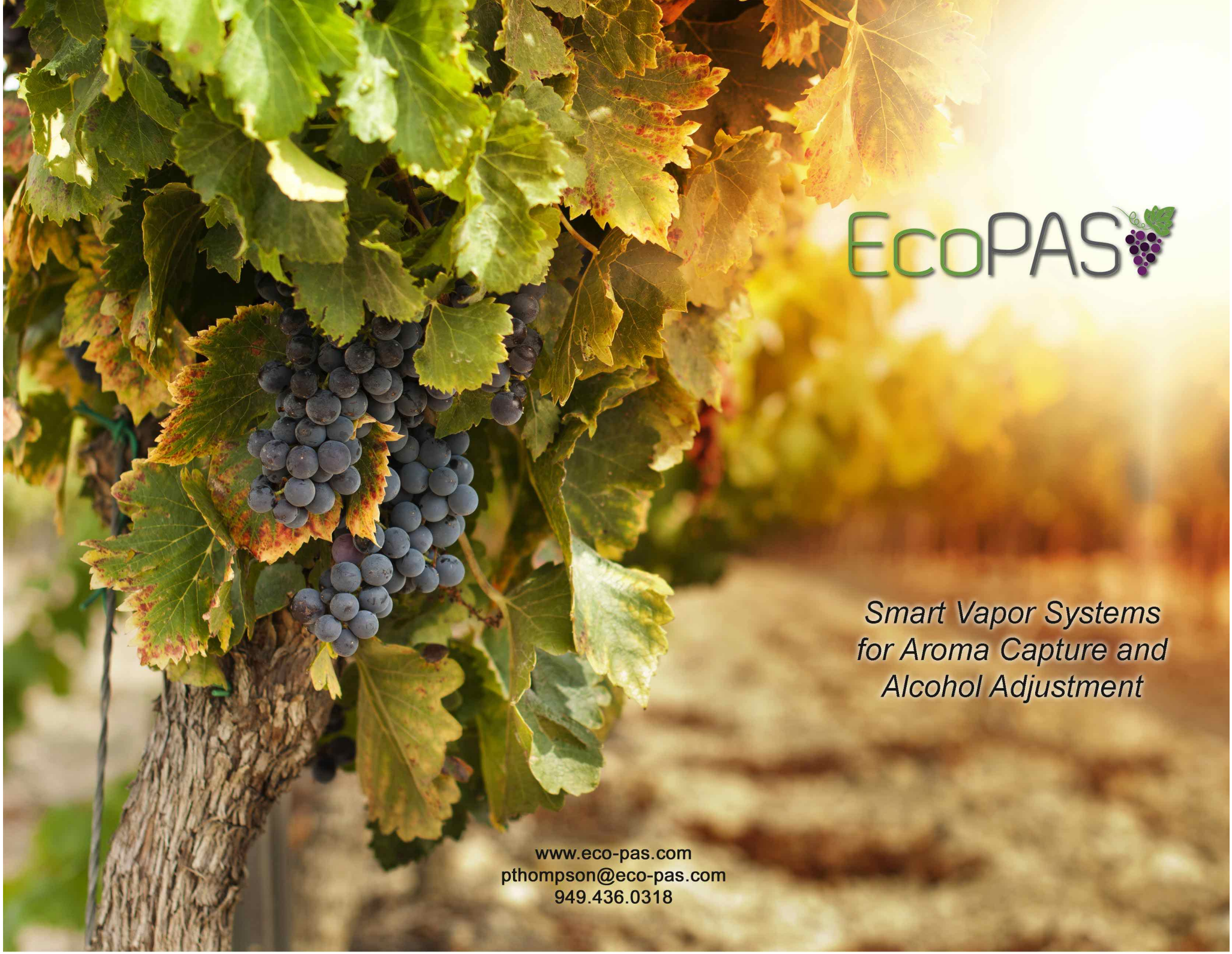
[2]Todd, D.F., C.L. Castronovo, and P.K. Ouchida 1988. Ethanol emissions control for wine fermentation tanks. Report #ARB/ML88-027, California Air Resource Board, Monitoring and Lab Division.

[3]Williams, L.A., and R. Boulton 1983. Modeling and prediction of evaporative loss during wine fermentations. Am. J. Enol. Vitic. 34:234-242.

Specifications (Also see attached Drawings)

Weight:	735-lbs dry & uninsulated
Dimensions:	25'-long x 1.5'Ø
Capacity:	115,000-gallons at 85°-F / 12°-Bx redux daily (310-ft³/min *24-hr average*)
Connection:	Entry: 6"Ø tri-clamp Exit: 12"Ø tri-clamp
Material:	T304-SS (RA32 finish); T316-SS available
Connections:	Tri-clamp with PTFE gaskets
Refrigerant:	57-gallons Glycol
Insulation:	Jackets are made to be easily removed and to replaced, ensuring energy efficiency will not get in the way of regular maintenance. The jackets are made with a hook and loop straps, or 1 inch buckles and D-rings. Jackets are made with high-quality and state of the art materials by USA manufactures. Utilize heat resistant thread and jacketing to ensure the jacket can handle high temperatures, and use fully hydrophobic aerogel insulation or Glass mat, type E needled fiber as insulation. The components are sown together, ensuring the insulation interior is actively sewn into to jacket to prevent shifting. The result is a high quality durable jacket, able to withstand extreme temperatures and removal without losing quality or functionality.


6"ø
Vent to
Atmosphere
PVR (House)
18" - 21" H2O
PVR (House)
18" - 21" H2O
Fermentation
Tank
(House)
Fermentation
Tank
(House)
Temp
Gas sample barb w/ valve
Sample Port: valve
with hose barb
EcoPAS PVR
Set @ 5" H2O
EcoPAS PVR
Set @ 6" H2O
12"ø
6"ø
6"ø
Temp
Pressure
Temp
EcoPAS PAS-LT Unit
Temp
Pressure
Tank
Vent
Tank
Vent
PAS-LT
Capture #2
PAS-LT
Capture #1
System
Pre-Capture
EcoPAS Scope of Supply
House - Scope of Supply
Glycol - Supply
(20°F - 36°F / 34°F ideal)
Glycol - Return


EcoPAS
Smart Vapor Systems
for Aroma Capture and
Alcohol Adjustment
www.eco-pas.com
pthompson@eco-pas.com
949.436.0318

WI 0468

Smart Vapor Systems

Wine fermentation releases significant amounts of fugitive vapors. This “angels’ share” is rich with complex volatile aromatic organics. EcoPAS has developed a technology and process for capturing and converting into valuable wine spirits. These unique aromatic wine spirits can be used to enhance wine quality, as a separate grape-based spirit, or as natural flavors or fragrances. EcoPAS offers three modular smart condensing systems:

- PAS-1 (Experimental scale)
- PAS-10 (Artisan scale)
- PAS-100 (Full scale)

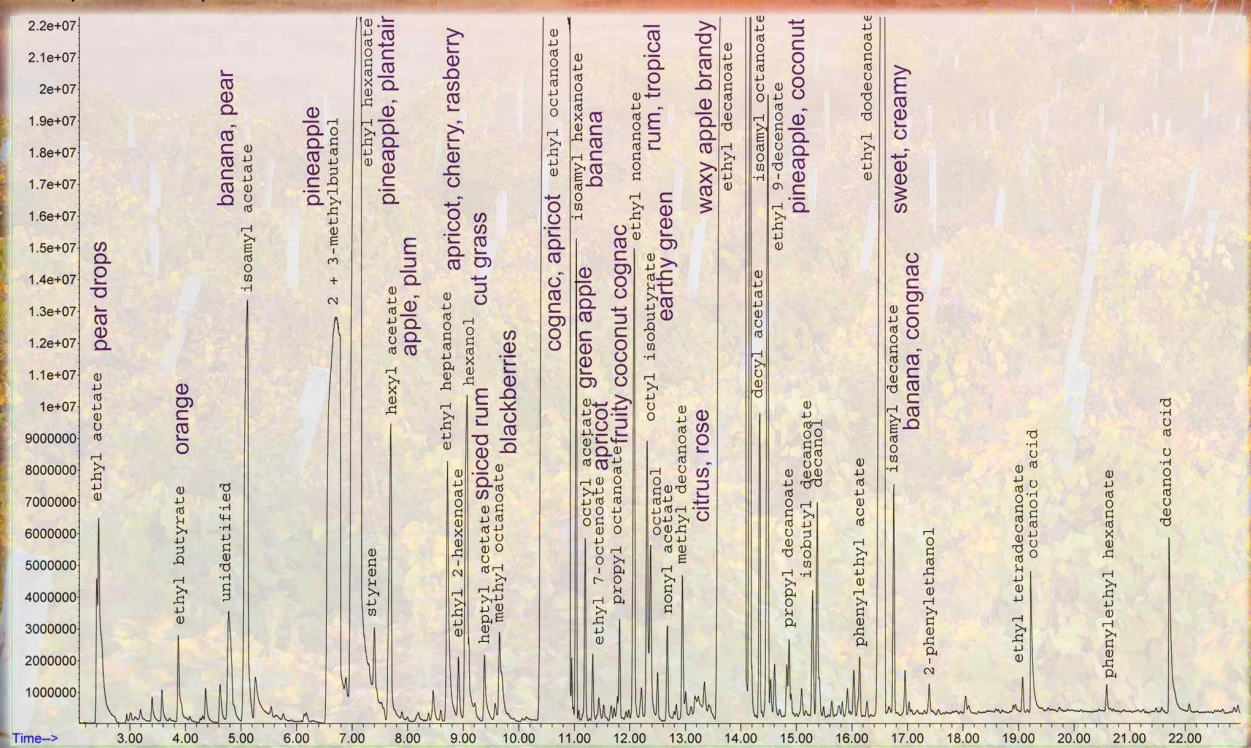
Highly-aromatic wine spirits can enhance wine quality...

Aroma Capture

Key benefits of the patented EcoPAS technologies include:

- Zero water use and zero waste
- Low energy use and small footprint
- Self cleaning and low maintenance
- Yields valuable byproduct

Example of complex aromatics in condensate...



Alcohol Adjustment

Recirculating purified CO_2 into the headspace of the fermentation vessel enables the winemaker to increase evaporation of ethanol, providing a tool for reducing effective conversion ratio, without loss of desirable aromatics.

Carbon Capture

Cool, clean CO_2 can be compressed and used, or sold, displacing fossil sources, and resulting in carbon-negative winery operations.

WI 0469

Attachment C

NohBell's NoMoVo Technology

Santa Barbara County
Air Pollution Control District
Our Vision: Clean Air

BACT ANALYSIS SUMMARY FORM

This form must be submitted by all applicants when Best Available Control Technology ("BACT") is required, except for small sources that utilize BACT as listed on the APCD's *Small Source BACT List*, for which case this form is not required. This form supplements APCD Regulation II and applicable APCD application guideline documents. Please fill in all sections of this form completely. Also, fill in a separate form for each emissions unit subject to BACT (multiple units with the same BACT may use only one form). Use additional sheets as necessary.

COMPANY NAME: Central Coast Wine Services (CCWS) DATE: April 20, 2017

FACILITY\SOURCE NAME: Central Coast Wine Services – Santa Maria Winery

1. POLLUTANT(S) SUBJECT TO BACT REVIEW: ROC (Ethanol)

2. EMISSION UNIT(S)/PROCESS(ES) SUBJECT TO BACT REVIEW: Closed Tank Fermentation

3. BACT SUMMARY:

   Technology: Vapor Absorption – NoMoVo by NohBell

   Performance Standard: To be Determined – NohBell has provided CCWS with a performance guarantee of 67.5%. However this control efficiency has not been validated. Limitations of the capture system were attempted to be taken into consideration. Only with proper validation can a real control efficiency be assigned to this combination of vapor capture and ethanol extraction from the vapor stream be assessed.
   Performance as described is only valid when determined by the existing mass-balance process.

4. BACT SELECTION PROCESS DISCUSSION: On a separate sheet of paper, describe the justification for the selected control technology as BACT. Include the following in your description: documentation of technical infeasibility which would preclude the use of a more effective control technology; operating conditions at which the maximum daily and hourly emissions will be generated (baseline parameters); maximum daily and hourly emissions at the baseline conditions and the basis of how the emission rates were estimated; calculations, emission data, and/or other information to determine control effectiveness of each potential control technology; and emission limits expressed both in terms of an emissions cap (e.g., pounds per day) and in terms which ensure compliance at any operating capacity (e.g., pounds per million British thermal units, or parts per million by volume).

APPLICATION No

5. BACT EFFECTIVENESS: Discuss how BACT will be effective over all operating ranges.

The performance of this technology is not consistent over the entire duration of a fermentation cycle. Absorption performance can vary from 45% to 90+% depending upon the timing of the fermentation cycle. Compound that variability with the normal insistent operations of the capture manifold, and the actual variability of the control efficiency across all operating ranges in indeterminable.

6. BACT DURING NON-STANDARD OPERATIONS: Discuss whether the proposed BACT is achievable during non-standard operations and if not, what BACT is for those operations.

BACT will not be achievable during non-standard operations. During non-standard operations the control efficiency will be zero. Non-Standard operations are any time the tank man-way is opened to perform normal winemaking operations (e.g. visual inspections or tank pump-overs).

7. OPERATING CONSTRAINTS: Identify all process variables for which operating limits need to be set in order to ensure compliance with the selected BACT standards.

To Be Determined

8. MONITORING BACT: Describe, in detail, how the selected BACT is to be monitored for its emission reduction effectiveness.

Until a source test protocol is promulgated by the US EPA, as has been indicated, effectiveness will be determined by mass balance calculations using existing recordkeeping protocols.

9. ALTERNATE BASIC EQUIPMENT: Discuss whether alternate basic equipment (e.g., electric motors in lieu of IC engines) can be applied to this application.

No alternatives are known

10. [X] Yes [ ] No Will this be a multi-year and/or multi-phase project?

11. [X] Yes [ ] No Are all referenced documents attached?

12. [ ] Yes [X] No If PSD BACT is triggered, was a detailed Top-Down BACT Analysis prepared and submitted with the application? Please be aware that the applicant is responsible for providing the APCD with this analysis.

2800—156th AVE SE, STE 200 Bellevue, WA 98007
Telephone 425.223.4253

To: Whom it may concern Thursday April 20, 2017

From: Ad Verkuylen

NohBell Corporation – VP Engineering

Regarding: NoMoVo Specifications and operational performance guarantee.

The NoMoVo units come in two sizes, 1836 and 2448.

The 1826 unit is sized for 0 - 60,000 gallons actively fermenting (Net tank capacity).

The 2448 unit is sized for 0 - 100,000 gallons actively fermenting (Net tank capacity).

Within normal operating parameters, the units will operate at an efficiency no lower than 67.5% measured over the length of a single fermentation.

At any random time during the fermentation the units will never perform below 45% efficiency.

At a large portion of the time during fermentation, the units will operate at 90+% efficiency.

The above take into account normal winery operation parameters, including temporary opening of the tank hatch for pump-overs and inspections.

Respectfully,

Ad Verkuylen

NohBell Corporation – VP Engineering

Fermentation Exhaust Cleaner

1 Introduction

During recent developments in California, state, local and regulatory agencies have shown an increased awareness and sensitivity in regard to Green House Gasses (GHG) emissions.This has started to hit upon the wine industry, and their generation of GHG's. For the scope of this document we will be addressing this issue specifically focused on the fermentation process. While there are other instances of GHG creation (storage both tank and barrel) by order of magnitude, the fermentation is a multitude larger than the next largest cause of GHG's.

1.1 Exhaust Gases

The fermentation of wine creates large amounts of Carbon-Dioxide (CO_2). With that CO_2, small amounts of the volatile organic compound Ethanol (ETOH or C_2H_5OH) escape as well. There are some other compounds that get exhausted, but at this time they are deemed to be in such small concentrations that they have no bearing on the scope discussed in this document.

1.2 Legal Limits

- There is currently no specific limit known for CO_2 emissions
- The current legal limit for ETOH emissions is 55 lbs/day.

2 Problem Definition and Constraints

2.1 Process

Making wine, and fermenting is a sensitive subject, some of the CO_2 inside the tanks acts like a blanket over the top of the wine. The proposed solution that is designed will not negatively influence the fermentation process or undue exposure of the wine to oxygen.

2.2 Foodgrade and Cleanliness

This solution also complies with food safety and cleanliness standards as customary in the wine industry. This means that any and all ducting, piping, vessels and other interfaces that are used and/or connected to existing equipment such as fermentation tanks are cleanable by either COP or CIP methods.

2.3 Construction

In review of the existing facility, and the way their fermentation tanks are typically constructed, there is a limit to the amount of equipment that can be placed on top of a tank, or in the immediate vicinity.

Furthermore, these tanks are atmospherically balanced and not built to withstand pressure or vacuum.

2.4 Economic Feasibility

The solution needs to be able to be designed, build and operated inside economic guidelines that are in check with the economic burden that this sort of operation can carry and still remain feasible as a business.

It is also a goal to meet the cost per ton of reduction targets set by the California Air Quality Department.

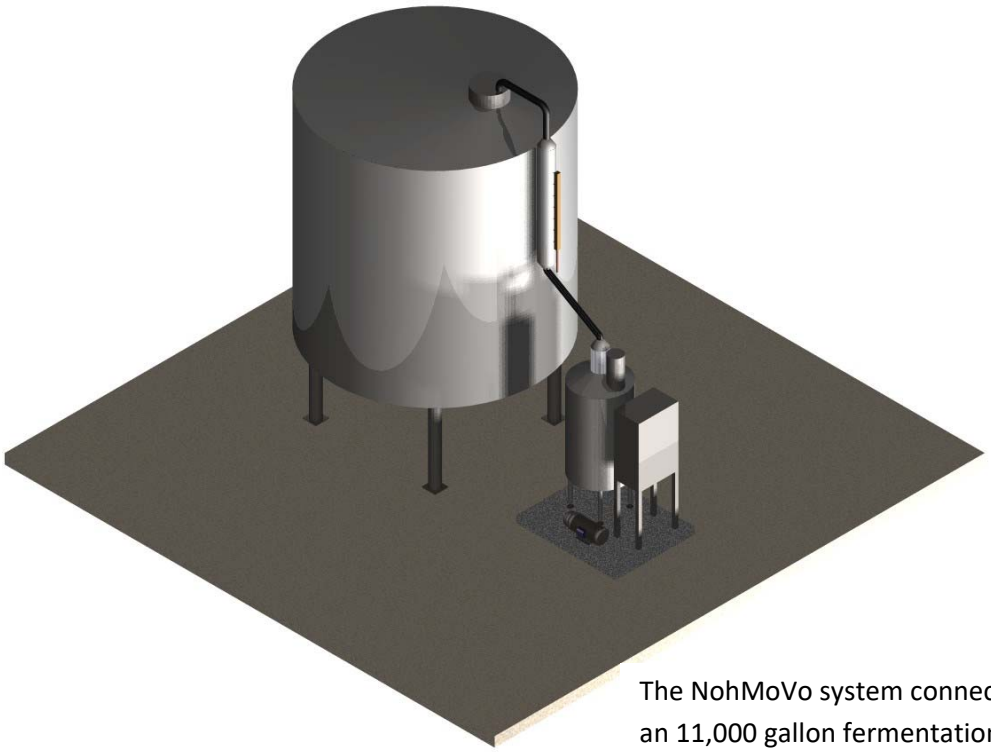
2.5 Size and Scaleability

Fermentation lots come in 3 common sizes (25, 50 and 75 tons) and also have the occasional custom size batch. For the flexibility and scaleability, this design will be able to handle a tank up to 75 tons.

3 The NohMoVo Solution

Looking at existing and or similar technologies, a couple of them seem to fit the criteria but for the most part are cost prohibitive and / or operationally not desireable due to cleaning complexity or utility requirements.

Looking at all factors involved, [redacted] shows potential with some significant enhancements to ensure efficient extraction and collection of the VOCs. A multi-staged hybrid [redacted] system is proposed. (diagram below) “CONFIDENTIAL INFORMATION REDACTED”



The NohMoVo system connected to an 11,000 gallon fermentation tank.

4 Calculations

4.1 Carbon Dioxide

Standard Lots	Liters/Lot	l/day	l/hr	l/min	l/s
25 tons	1160894.42	290223.61	12092.65	201.54	3.36
50 tons	2321788.85	580447.21	24185.30	403.09	6.72
75 tons	3482683.27	870670.82	36277.95	604.63	10.08

4.2 Alcohol

Standard Lots			Total Alcohol in liters			Alcohol Loss in Liters		
			10%	12%	14%	10%	12%	14%
25 tons	20819.8	liters	2082.0	2498.4	2914.8	32.5	39.0	45.5
50 tons	41639.5	liters	4164.0	4996.7	5829.5	65.0	77.9	90.9
75 tons	62459.3	liters	6245.9	7495.1	8744.3	97.4	116.9	136.4

5 The Demolieren Reactor System

5.1 Process Flow Diagram

"CONFIDENTIAL INFORMATION DELETED"

5.2 Functional Description

“CONFIDENTIAL INFORMATION DELETED”

6 Testing

6.1 Winery Onsite Testing

- Phase 1 testing is scheduled to occur the week of September 14th, 2009 for 5 days.
- Phase 1 laboratory results evalutation planned for the week of September 21st, 2009 for 2 days.
- Phase 2 testing (if required) is scheduled for the week of September 28th, 2009 for 5 days.
- Phase 1 and 2 evaluation planned for October 5th, 2009.

6.2 Testing Procedures

The test methodology will follow the guidelines already inplace at the test winery and will initially utilize the onsite laboratory and equipment to perform the necessary analysis for ETOH concentrations.

Samples will be taken every hour during the fermentation cycle to accurately plot concentration rates and to evaluate saturation levels. Based on the typical fermentation cycle of 4 to 7 days, sufficient data points (96 to 168) will be charted to determine the general efficiency of the NohMoVo collection system over the course of the cycle. The results of this Phase 1 test will determine additional data collection requirements for Phase 2 tests.

6.2.1 Phase 1

In the first phase of site testing, liquid samples will only be taken from the tank to determine the amount of ETOH caputured in the slurry versus theoretical calculations.

6.2.2 Phase 2

Assuming successful results in the initial phase of the testing, the second phase of tests will continue to collect slurry samples along with gas samples at both the inlet to the Reactor Column and from the discharge of the Demolier Slurry tank. The planned method will be to collect sealed onsite samples to be later tested at an offsite laboratory equipped to measure ETOH at low concentrations.

6.3 Operational Effeciency

System efficiency levels are currently calculated to be approximately 80 to 85 percent with respect to the removal of ETOH from the fermentation offgassing. It is anticipated that actual capture rates will vary as a result of product types, yeast cultures, alcohol levels, balancing gas additions and atmospheric conditions.

7 Next Steps

7.1 Winery Approval

This approach has been presented to the client and has been given initial approval. This document is the final submittal of intent to test the NohMoVo Control System.

7.2 SBCAPCD Submital and Approval

This document and attached drawing are to be submitted by the client for testing approval.

Fermentation Exhaust Cleaner

(SBCAPCD Information Request – Addendum)

1 Overview

Additional information was requested by the SBCAPCD as a result of a meeting held with CCWS on July 15th, 2009. A conversation held with Mr. Lunt of CCWS and subsequent e-mail (excerpt below) summarizes the request.

"The APCD has follow up questions related to understanding how the NohMoVo system under test in harvest 2009 can be applied as operable equipment for emission control at Central Coast Wine Services by harvest of 2010. They are requesting further information regarding how the equipment will be portable from tank to tank as fermentations finish in any particular tank and begin in another tank, how the equipment can be manifolded to join multiple tanks to a NohMoVo unit, how VOC or emission tests will be performed (test procedures), and how efficiencies will be calculated (mathematical examples)."

We will address these questions to the best of our ability and based on the information we have developed during the course of the systems design and scaled testing. The subsequent sections will address the questions individually.

2 Equipment Portability

2.1 Skid Mount Design

As was noted in section 5.2 of the initial submittal;

[redacted]

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A more detailed image of the major components, mounted on the skid is shown in diagram 1. The skid will be approximately 48" x 60" and will have slotted channels to be moved by fork truck or pallet jack. Post fermentation, the Reactor Column outlet and the Slurry Recycle line, will be disconnected from the Slurry Tank. The skid is powered from a single 230VAC-3PHS flexible cable and can be disconnected at the skid.

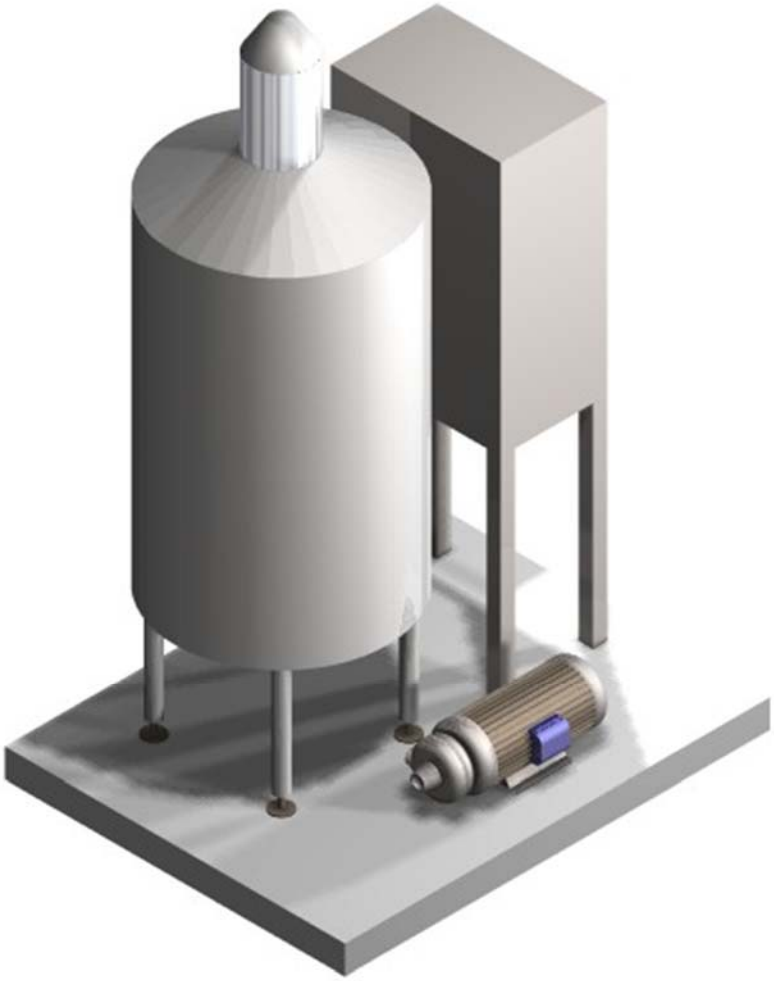

Diagram 1 – Portable Skid Mounted Components

2.2 Transfer to Subsequent Fermentation Tanks

The disconnecting, CIP and relocation of the Demoliertank Skid is tool less and can be completed without concern for the product in the Fermentation Tank. [redacted]

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2.3 Multiple Tank Connection

[redacted]

[redacted]

"CONFIDENTIAL INFORMATION REDACTED"

3 VOC and Emission Testing

As noted in section 4 of the initial submission, based on typical red wine fermentation cycles, one can expect between 78 to 91 liters (17.5 to 20 gallons) of ETOH to be carried out of the tank via CO2 off gassing for a 50 ton (11,000 gallon) batch.

Standard Lots			Total Alcohol in liters			Alcohol Loss in Liters		
			10%	12%	14%	10%	12%	14%
25 tons	20819.8	liters	2082.0	2498.4	2914.8	32.5	39.0	45.5
50 tons	41639.5	liters	4164.0	4996.7	5829.5	65.0	77.9	90.9
75 tons	62459.3	liters	6245.9	7495.1	8744.3	97.4	116.9	136.4

The testing will be carried out as described in section 6 of the initial submittal and will utilize the following instruments and methods;

a) Field sampling and on site lab testing will initially use a hydrometer to test the specific gravity of the liquid in the Slurry Tank. The system is initially charged with [redacted] and will be used as a basis to determine the alcohol percentage in the slurry. "CONFIDENTIAL INFORMATION REDACTED"

Product samples will be collected in 750ml glass containers directly from the sample port on the slurry tank. Samples will be time stamped relative to the fermentation cycle. Sample sizes of this quantity are required due to the volume of liquid required to perform a hydrometer test.

b) Based on field sampling and initial on-site laboratory tests, secondary tests will be performed both in the on-site and preselected off-site laboratories. This secondary test will utilize a refractometer to analyze the alcohol levels in the slurry and off-gas samples. At the current time, it is planned to utilize the laboratory services of COBE Industrials located in Pico Rivera, CA as the off-site testing service.

Product samples for this phase of testing will be collected using 25ml sterilized syringes directly from the slurry tank, [redacted]. It may be necessary to measure the air stream samples utilizing a gas chromatograph due to the low levels in the sample size, which COBE Industrials are capable of performing. "CONFIDENTIAL INFORMATION REDACTED"

4 Efficiency Calculations

4.1 Discussion

As was noted in section 6.3 of the initial submission;

"System efficiency levels are currently calculated to be approximately 80 to 85 percent with respect to the removal of ETOH from the fermentation off gassing. It is anticipated that actual capture rates will vary as a result of product types, yeast cultures, alcohol levels, balancing gas additions and atmospheric conditions."

The objective of the system is to [redacted]. As noted above the amount of VOCs for any given fermentation will vary and in some cases significantly. The calculations noted in section 4.1 of the original submission and again in section 3, the most conservative numbers have been used. "CONFIDENTIAL INFORMATION REDACTED"

4.2 Efficiencies

The initial efficiency of the system will be calculated using total amount of ETOH collected throughout the entire fermentation cycle versus theoretical emission volumes.

Example:

For an 11,000 gallon batch of red wine at a finished alcohol percentage of 12%, theoretical calculations tell us that will yield approximately 78 liters of ETOH loss via fermentation tank emissions during entire cycle. The slurry tank will be charged with 225 liters of water at the start of the cycle and is expected to effectively extract to a 30% ETOH concentration or 67.5 liters. This would effectively result in an 85% efficiency removal of ETOH from the off-gas stream.

Further efficiency analysis will be carried out assuming successful results in the first phase of testing.

		VOC (ETOH) Extraction Efficiency					
		0.0%	55.0%	75.0%	80.0%	85.0%	90.0%
released /	VOC liters / cycle	77.95	35.08	19.49	15.59	11.69	7.79
11,000 gal	VOC liters / day	19.49	8.77	4.87	3.90	2.92	1.95
tank	VOC pounds / day	33.90	15.26	8.48	6.78	5.09	3.39

VOC Emissions per 11,000 gallon Fermentation Tank at various capture efficiencies.

5 Next Steps

5.1 Winery Approval

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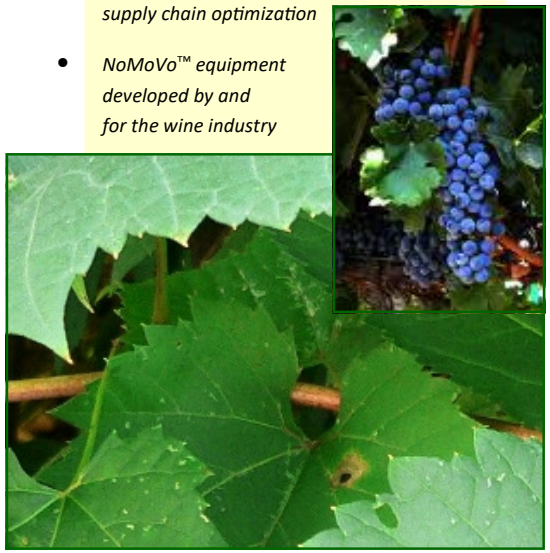
About NohBell Corporation

We are a Think Tank. Clients hire us to craft the integration of current and emerging technologies with traditional business and manufacturing operations. The objective creates seamless transitions that provide measurable benefits with each project.

- ◊ **Knowledge**
- ◊ **Creativity**
- ◊ **Integration**
- ◊ **Execution**

—It's what we are about

- *NohBell is a firm of industry professionals dedicated to practicing the art of solving complex business problems*
- *Over 100 years cumulative experience in the wine and beverage industries*
- *Experts in production efficiency and supply chain optimization*
- *NoMoVo™ equipment developed by and for the wine industry*



FEATURES

- **Fermentation Emissions Control**
- **Capture ETOH**
- **Manage CO_2**

NoMoVo™

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NoMoVo™

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WI 0485

ISSUE

The fermentation of wine creates and emits relatively large amounts of Carbon-Dioxide (CO_2) and the volatile organic compound Ethanol (ETOH or C_2H_5OH). Acetaldehyde, methyl alcohol (methanol), n-propyl alcohol, n-butyl alcohol, sec-butyl alcohol, isobutyl alcohol, isoamyl alcohol, and hydrogen sulfide also are emitted but in much smaller quantities compared to ethanol emissions.

'The Environmental Protection Agency is drafting Green House Gas legislation including hydrocarbon and ozone restrictions'

California's state and district regulatory agencies are demonstrating increased awareness and sensitivity to Green House Gas (GHG) emissions resulting from fermentation processes used to manufacture alcoholic beverages. This has begun to impact the wine industry by way of incremental regulatory oversight and statutory fines. The degree of impact is typically dictated by the volume of regulated GHG's produced by a single entity, in a specific location, as measured against the pre-defined limits for gas emissions in a particular jurisdiction.

NoMoVo™

'NoMoVo™ is a dielectric attraction and extraction, "Emissions Capture System," engineered specifically for the wine industry'

- The system is efficient, cost effective, and versatile in adapting to various wine production techniques
- Does not negatively affect the fermentation process or unnecessarily expose wine to oxygen
- In a typical winery, fermentation is by order of magnitude, the largest single source of VOC emissions in winemaking operations.
- Typically, the most significant of the Volatile Organic Compounds (VOCs) is ethanol (ETOH).

Alternative technologies exist and have been proven effective in the removal of VOCs from emissions streams. They are designed to either selectively remove or to thermally destruct the VOCs. All other solutions have proven either inefficient, cost prohibitive, or have the added burden of operational complexity, significant sanitation concerns, and large utility requirements.

FEATURES

- **Food safety and cleanliness standards compliant**
- **Cleanable by COP or CIP methods**
- **Small footprint—space efficient, easily configurable**
- **Cap management enabled**
- **Can be disconnected, cleaned and moved without special equipment or tools**

CONFIDENTIAL INFORMATION

THIS SECTION CONTAINS INFORMATION
DESIGNATED AS CONFIDENTIAL

Fermentation Exhaust Cleaner

1 Introduction

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2 Problem Definition and Constraints

2.1 Process

Making wine, and fermenting is a sensitive subject, some of the CO_2 inside the tanks acts like a blanket over the top of the wine. The proposed solution that is designed will not negatively influence the fermentation process or undue exposure of the wine to oxygen.

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SANTA BARBARA COUNTY

AIR POLLUTION CONTROL DISTRICT

POLICIES AND PROCEDURES

Policy No.	6100.064.2017 Div Pol Yr	Draft	
Supersedes No.	6100.064.2016 Div Pol Yr	Final	x
Date:	February 3, 2017	Pages	14
Topic:	Best Available Control Technology		
Distribution:	Engineering Division Staff		

1.0 APPLICABILITY

This policy and procedure applies to all Best Available Control Technology ("BACT") determinations required by APCD Rules and Regulations, CEQA or permits issued by other agencies in which APCD-approved BACT is a stated requirement.

2.0 INTRODUCTION

This policy and procedure ("P&P) provides guidance on the meaning, application and tracking of Best Available Control Technology ("BACT"). It was compiled based on past APCD practices, the current APCD New Source Review ("NSR") rule, USEPA regulations and policies and CARB documents. Any questions regarding this P&P should be directed to the Supervisor of the Permitting Section.

3.0 DEFINITIONS

3.1 NAR Best Available Control Technology: For nonattainment review ("NAR"), the APCD's definition of BACT in Rule 802.D.2 is used. This definition is typically referred to as California BACT and is similar to the USEPA's definition of Lowest Achievable Emission Rate ("LAER").

For any stationary source, the more stringent of:

a) The most effective emission control device, emission limit, or technique which has been achieved in practice for the type of equipment comprising such stationary source; or

b) The most stringent limitation contained in any State Implementation Plan; or

c) Any other emission control device or technique determined after public hearing to be technologically feasible and cost-effective by the Control Officer.

3.2 PSD Best Available Control Technology: For attainment review under our local Prevention of Significant Deterioration ("PSD") rules, BACT must be consistent with the Federal definition of BACT as found in Section 21 of 40 CFR 52 (see also Rule 810 for projects that trigger Federal PSD requirements). For the purposes of PSD BACT determinations, the following definition from Rule 802.D.3 shall be used:

BACT shall be an emission limitation based on the maximum degree of reduction achievable for each pollutant. Best Available Control Technology shall be determined on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs. Best Available Control Technology may consist of any of the following: application of production processes, fuel cleaning or treatment innovative fuel combustion techniques, or any other technique *for control of each pollutant. In no event shall application of Best Available Control Technology result in emissions which would exceed the emissions allowed under the applicable New Source Performance Standards.*

Rule 802 also requires the application of BACT under Section D.4:

An applicant shall apply attainment pollutant Best Available Control Technology to a new source or modification of an existing major stationary source, for any emissions increase which would construct within 10 kilometers of a Class I area and which would have an impact on such area equal to or greater than 1 microgram per cubic meter (24-hour average).

4.0 BACT THRESHOLDS

BACT is not required for every permit application. Each application must be reviewed to determine whether the applicable BACT thresholds are exceeded. This process can range from being easy and straightforward to complex and time-consuming. To utilize the New Source Review ("NSR") rule one must understand the concept of Potential to Emit ("PTE"). For Federal PSD projects, there is also EPA's Net Emissions Increase ("NEI") calculation to address. If the applicable NAR or PSD BACT threshold is exceeded, the applicant is required to propose and commit to implementation of BACT as part of their project.

The criteria pollutant thresholds for BACT are:

NAR BACT: 25 pounds per day project PTE [1] (150 lb/day for CO)

PSD BACT: 120 pounds per day project PTE [1] (500 lb/day for CO; 80 lb/day for PM_{10}; 55 lb/day for $PM_{2.5}$; and lower thresholds for specified toxic compounds.)

[1] Emissions are based on reasonable worst case operating scenario and must reflect the permitted emission levels requested in the permit application. See Table 1 for NAR and Table 2 for PSD BACT thresholds in Section D of Rule 802.

5.0 DISTINCTIONS BETWEEN NAR BACT AND PSD BACT

There are several notable differences between NAR BACT and PSD BACT. Most importantly, PSD BACT is evaluated on a case-by-case basis, where NAR BACT is essentially uniform for the class or category of source. The PSD case-by-case evaluation has a large scope of concerns, including energy, environmental, and economic impacts. The NAR BACT definition is narrower. It allows little discretion in the decision other than what is "achieved-in-practice" as well as the class or category of source (i.e., the type of equipment comprising such stationary source). As a result, similar sources may have different PSD BACT requirements, but should not have different NAR BACT requirements.

The PSD BACT definition is very clear in its intent to consider requirements of each source on a case-by-case basis. The decision must include economic, energy, and environmental considerations. In contrast, the “achieved-in-practice” component of the NAR BACT definition is clearly more straight-forward by not allowing economic, energy, or environmental consideration, and only considering the most stringent control achieved in practice for the category of source being considered. Thus, no discussion of costs is necessary or appropriate for such class or category of sources that are already using a level of control considered achieved-in-practice. This is different from the PSD BACT definition, for which the economic feasibility of a control technology is a required consideration. The “technologically feasible” component (part b) of the NAR BACT definition, however, does consider economics in the analysis along with an analysis of whether the technology in question is feasible for the class or category of source subject to review. The fact that a particular control technology is “achieved-in-practice” implies its inherent economic and technological feasibility.

5.1 Specifics of the NAR BACT Definition

(a) Most Effective Control Achieved-in-Practice: There are three important elements to this part of the definition. The first element refers to the *most effective control device, technique, or emission limit.* This element is defined in a broad fashion to allow for the appropriate selection criteria for the specific equipment or process in question. Examples include:

- Concentration limits of 5 ppmv NOx from the stack of a small boiler using a low-NOx burner
- Mass destruction rate efficiency of 98.0 percent for a regenerative thermal oxidizer
- Selective catalytic reduction with a concentration limit of 2 ppmv NOx for a 10 MW combined-cycle/cogeneration combustion gas turbine.

The second element is achieved-in-practice. This element indicates that the technology has a proven "track-record" of reliability. For example, take a biogas fired spark ignited IC engine using SCR controls located at Facility X. This engine meets an emission standard of 9 ppmvd (at 15% O_2) and has done so for a reasonable time period. Next, if Facility Z (in our jurisdiction) triggers BACT for a similar proposed project, then it would need to meet this achieved-in-practice BACT standard. Facility X could be located anywhere in the USA.

The third element of the definition refers to the type of equipment comprising the stationary source (i.e., class or category of source). This could be as large as a group of basic equipment units that provide the same function (e.g., the combination of motors, turbines, or reciprocating engines to provide torsional drive). On the other hand, it could be a more specific size segment or subtype within an equipment type (e.g., boilers over 33 MMBtu/hr heat input, or lean-burn engines).

Provisions for consideration of alternative basic equipment or fuels are not evident in the definition. However, the language of the definition does not preclude the consideration of alternative basic equipment or fuels as a NAR BACT requirement.

(b) Other Emissions Control Devices or Techniques Deemed Technologically Feasible and Cost-Effective: This part of the definition allows the district to require unproven control technologies not yet considered as "achieved-in-practice" as BACT, and is known as "technology forcing" BACT or "TFBACT." This option makes the NAR BACT definition more stringent than the federal LAER definition. Because of it, California districts can participate in advancing the stringency of "California BACT" by requiring unproven control technologies. The process requires a public hearing. The hearing takes place at the APCD's offices under the direction of the Engineering Division. Cost effectiveness is a consideration with this option. Use of this option may not result in a BACT that is less effective than that achieved-in-practice or than that required by local, state or federal laws or regulations.

As discussed above, the NAR BACT definition has two alternative minimum requirements, with the most stringent for the particular circumstance being required. In any case, BACT (NAR or PSD) cannot be less stringent than federal new source performance standards (NSPS) or national emission standards for hazardous air pollutants (NESHAPS).

5.2 Specifics of the PSD BACT Definition

PSD BACT may be less stringent than NAR BACT, and allows for consideration of "energy, environmental, and economic impacts and other costs." It also requires evaluation of alternative production processes and available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques.

The complexity of so many considerations in the PSD BACT determination creates ambiguity regarding the implied procedure for determining BACT requirements. As a result, USEPA has provided guidance[2] on the matter. This guidance is referred to as "The Top-Down Approach", and is neither applicable to LAER nor to NAR BACT definitions patterned after LAER; it is only used for PSD BACT determinations. The guidance essentially dictates that the process of evaluation should include a ranking of candidate PSD BACT requirements, starting with evaluation of the most stringent candidate requirement with subsequent evaluations to cover sequentially less stringent requirements. One cannot proceed down the list to a less stringent PSD BACT candidate

[2] USEPA New Source Review Workshop Manual, Chapter B (BACT), October 1990 Draft

before justifying the rejection of a more stringent candidate that is feasible. The applicant is required to prepare and submit the “Top-Down” BACT analysis with their application.

Pursuant to the USEPA’s "Top-Down" PSD BACT policy guidelines, any PSD BACT determination analysis starts with assessing whether the applicant has proposed LAER (NAR BACT) equivalent limits/standards. If NAR BACT equivalent limits are proposed, then no further justification of the proposed limits (as PSD BACT) are necessary. All possible controls, including NAR BACT, are required in the Top-Down BACT Analysis if the applicant proposes a less stringent limit. The effectiveness of each alternate is evaluated to demonstrate the proposed control as the best feasible PSD BACT for the situation under study.

The determination of PSD BACT may be based on the extent of controls for other pollutants. A PSD BACT analysis should involve all pollutants, including affected pollutants influenced by the control technique selected. Under Federal policy decision (*PSD Appeal No. 85-2: North County Resource Recovery Associates Application Decision, Dated Sept. 4, 1986*), if two equivalent emission control technologies are analyzed in an ATC for a particular pollutant, then the one more effective for all other regulated pollutants should be preferred as BACT, even though it may be costlier. For example, of two proposed control technologies that result in identical NOx emissions, the technology that results in lesser ROC or CO emissions is to be preferred as PSD BACT.

Another notable characteristic of the PSD BACT definition is the direct authorization to consider alternative production processes and available methods, systems and techniques, including fuel cleaning. As a result, PSD BACT is not limited to add-on control technology. Even changes in basic equipment, fuels, and material substitutes can be considered.

6.0 BACT SELECTION PROCESS

It is the responsibility of the applicant to propose the BACT for their project. Many times, however, the applicant does not have knowledge of these aspects of air pollution control, and the APCD is frequently requested to provide detailed technical assistance in helping the applicant ascertain what the appropriate BACT should be. If the BACT threshold has been exceeded, the applicant is required to include a BACT analysis in their application. In the analysis, the applicant may be required to conduct a survey to determine what methods, measures, or control technologies are available for control of emissions. In some cases, alternative basic equipment, processes, and fuels must be considered in addition to emission control technologies and standards. The analysis must also include a justification of the applicant's proposed BACT.

As stated in section 5.2, the PSD applicants are required to prepare and submit the Top-Down analysis with their application. PSD applications that do not contain a Top-Down analysis shall be handled in such a manner that the “achieved-in-practice” part of the NAR BACT definition will be used by the APCD in processing the application.

To research what the appropriate BACT is for a specific project, a number of references are available. Please note that no one document or source of information is absolute. Further, there may be cases where either no existing BACT is found to match the project

at hand, or where APCD staff or the public feel the technology-forcing control is both feasible and cost-effective. The following BACT references are available: [3]

1. Santa Barbara County APCD BACT Determinations: The APCD has made prior BACT determinations for specific devices in ATC permits we issue. These are readily available for those sources we typically regulate (e.g., boilers, oil & gas industry). Check online at the APCD's webpage. We also submit all our BACT determinations to ARB's online BACT Clearinghouse. This acts as our de facto database for BACT (NAR and PSD) determinations in Santa Barbara County.

2. Sacramento Metropolitan AQMD TBACT/BACT Clearinghouse: This BACT Clearinghouse document is a listing of BACT standards for their region. The BACT documentation is thorough and well presented. Common nomenclature is used. See http://www.airquality.org/businesses/permits-registration-programs/best-available-control-technology-(bact).

3. Bay Area AQMD BACT/TBACT Workbook: This Workbook provides a listing of BACT determinations for commonly used equipment in the San Francisco Bay Area. The Workbook follows the CAPCOA naming and categorization system. See http://www.baaqmd.gov/permits/permitting-manuals/bact-tbact-workbook.

4. San Joaquin Valley Unified APCD BACT Clearinghouse: The SJVUAPCD BACT Clearinghouse document is a listing of BACT standards for their region. See http://www.valleyair.org/busind/pto/bact/bactidx.htm.

5. South Coast AQMD BACT Guidelines: The SCAQMD BACT Guidelines document is a listing of BACT standards for that region. The Guidelines follow the CAPCOA naming and categorization system. The Guidelines document are not frequently updated and a number of the BACT listings are out of date. See http://www.aqmd.gov/home/permits/bact .

6. San Diego APCD BACT Guidance Document: The SDAPCD BACT Guidance Document is a listing of BACT standards for their region. The document is not frequently updated and a number of the BACT listings are out of date. See http://www.sdapcd.org/content/dam/sdc/apcd/PDF/Misc/APCD_bact.pdf

7. ARB BACT-LAER Clearinghouse: This is a database maintained by the ARB and is designed to track all BACT-LAER determinations made in the State. The Clearinghouse follows the CAPCOA naming and categorization system. The Clearinghouse should be used with caution, as many of the districts do not report their BACT/LAER determinations to the ARB. As a result, the Clearinghouse data is neither complete nor current. See http://www.arb.ca.gov/bact/bact.htm

[3] Caution should be exercised in reviewing any reference. In some cases, BACT may not have been implemented. In other cases, BACT may be very site specific. When in doubt, contact the reference directly for specific details.

8. USEPA RACT/BACT/LAER Clearinghouse (RBLC): This is a nationwide database maintained by the USEPA. The Clearinghouse does not utilize the CAPCOA naming conventions and may be somewhat difficult to use. All BACT determinations sent to the ARB are forwarded to the USEPA for inclusion in the RBL Clearinghouse. The quality the USEPA's RBL Clearinghouse is affected by the fact that many California districts do not forward their BACT/LAER determinations to the ARB. The user should remember at federal BACT is considered as PSD BACT and that LAER is NAR BACT. Access to the RLB Clearinghouse can be made via USEPA's Technology Transfer Network. See https://cfpub.epa.gov/rblc/

9. Manufacturer Information: Quite often manufacturers of air pollution control or emitting equipment are good sources of information on BACT. They can provide examples of where their equipment was used for projects that required BACT. Caution should be used, however, since a manufacturer may sometimes confuse an "emissions guarantee" with a BACT "performance specification." In addition, other outside factors may influence the manufacturer's statements that should be reviewed in the appropriate context. Emissions guarantees should be clear that they are "not to exceed" standards.

It is important that the agency/source of the BACT determination be contacted to ascertain specific details about the BACT determination in question. That agency/source should be questioned as to the type of facilities subject to the BACT, whether any special operating circumstances exist and if the permit(s) contain any specific operational limits that ensure continuous and constant compliance.

7.0 BACT COST EFFECTIVENESS

7.1 BACT Cost Effectiveness Calculation Procedure

For certain BACT determinations (e.g., PSD, TF NAR) a cost effectiveness calculations is required. This section provides the procedure the District uses to perform this calculation. We follow USEPA's Cost Control Manual [4] as a guiding document. Specifically, we use the Annualized Cash Flow method (aka the Levelized Cash Flow method) described in Section 2.4.4.4 of the Manual to derive an equivalent annual control equipment capital cost. The capital recovery factors (CRF) in Appendix A.2 are used. Control equipment life is 10 years by default; however, the District will evaluate any request for a different period if substantial backup documentation is provided to support the request.

For the interest rate, take as a benchmark the interest rate on United States Treasury Securities with a maturity that most closely approximates the project horizon (typically 10 years), add 2 percentage points for incremental risk, and then round the total up to the next higher integer.

The calculation applies to each pollutant that triggers the BACT requirement.

[4] See http://www3.epa.gov/ttn/catc/dir1/c_allchs.pdf

7.2 BACT Cost Effectiveness Thresholds

The equivalent annual control equipment capital cost calculated using the methodologies specified in section 7.1 above shall be compared to the following $/ton cost effectiveness thresholds:

$/ton				
NOx	ROC	SOx	PM10	CO
30,000	30,000	30,000	30,000	750

Any project with annualized capital costs below the thresholds above is considered cost effective.

These cost effectiveness thresholds may be modified or updated periodically and without advanced notice. This includes application of the California Consumer Price Index to account for inflation as well as other factors. The CPI adjustments shall be performed annually.

8.0 BACT AND THE PERMIT PROCESS

A number of issues must be addressed when evaluating BACT for specific permit applications. The District uses the following procedures to incorporate BACT measures into permits:

8.1 BACT Enforceability Over All Operating Ranges

The permitting process must ensure that the selected BACT is effective overall operating ranges. BACT that is selected based on full load operation should not neglect operations at loads that are likely to occur during the life of the equipment. This criterion is fulfilled through specification of a BACT "performance standard" and is not achieved solely through the specification of the BACT control technology being employed. This performance standard must be in units that take into consideration different operating loads and must be practicably enforceable. For example, a BACT performance standard for a boiler could be defined as an emission limit of 5 ppmvd NO_x at 3 percent O_2. Acceptable performance standard emission limits include but are not limited to:

- Concentration limits (ppmvd at 3 or 15 percent O_2)
- Pounds pollutant per MMBtu heat input
- Grains particulate per dscf at 12 percent CO_2
- Destruction rate efficiency (mass basis) using inlet and outlet values
- Mass removal efficiency (percentage) using inlet and outlet values
- Percent opacity

An equivalent emissions ceiling (or cap) in the units of "lb/hour" must also be proposed for each emission unit subject to BACT to protect air quality standards and increments. However, the use of mass emission rates (e.g., pounds per day) should not be used as a performance standard emission limit. These levels reflect only maximum reasonable worst case operating scenarios. Use of mass emission limits alone can defeat the purpose of BACT to be effective overall operating ranges. For example, a source with an assumed

BACT performance standard of 90 percent mass reduction efficiency is permitted at 7 pounds per hour (maximum load). Also, assume that the emissions unit operates on average at a 40 percent load. Setting BACT at a mass emission rate of 7 pounds per hour in lieu of the emission limitation of 90 percent efficiency would always allow the source to emit at 7 pounds per hour. Thus, the effect, in this example, would be to reduce the allowed effectiveness of the control device from 90 percent down to 75 percent.

8.2 BACT During Non-Standard Operations

Some non-standard operating situations will not lend themselves to adherence to the BACT performance standards identified for normal operating loads. Typical examples of these operations include transient operations such as equipment startup and shutdown; minimum equipment/processing loads such as sulfur recovery plants. When submitting a permit application, the applicant must provide an analysis of any operation that may not comply with the BACT performance standard(s), and must propose an alternative BACT performance standard for these non-standard periods for inclusion in the permit.

8.3 CEMS and BACT

Continuous Emissions Monitoring Systems ("CEMS") may be required pursuant to the NSR process, or by New Source Performance Standards or APCD Rule 328 (*Continuous Emission Monitoring*). Typical sources that require CEMS are:

- Gas Turbines
- IC Engines rated over 1,000 bhp
- Boiler/Steam Generators/Process heaters with a rated heat input greater than 100 MMBtu/hr
- Sulfur Recovery Plants
- Other large and/or complex sources where continuous documentation of the source's compliance status with emission standards is necessary

All determinations to require CEMS must be reviewed by the Supervisor of the Permitting program. Compliance averaging times should be detailed in the CEMS and/or BACT permit conditions.

8.4 Source Testing and BACT

Source Testing is required to ensure that the BACT performance standards and hourly mass emission rates are in compliance. Source testing may not be applicable in some BACT determinations and other means of compliance may be used. Examples of BACT that do not require source testing include:

(a) Gas stations with Phase I and Phase II enhanced vapor recovery that only require control-specific performance tests observed by inspectors during the SCDP.

(b) Sources with an approved fugitive hydrocarbon Inspection and Maintenance ("I&M") program.

(c) Low VOC coatings. Laboratory analysis for VOC content may be required.

Unless otherwise approved by the Supervisor of the Permitting Section, all permits that require BACT should also require source testing. Source testing for BACT during non-standard operations (see Section 8.2) shall be determined on a case-by-case basis. The permit engineer should refer to P&P 6100.039 (*Permit Requirements for Source Tests*) for a more complete description of the source test and permitting relationship.

8.5 BACT Operating Constraints

For sources that use a control device with associated operating constraints, compliance must be verified over a range of operating conditions during SCDP. At a minimum, the operating extremes of the design window should be tested, and any alternative BACT performance standard for non-standard operations shall be demonstrated via testing. For example, if a facility uses SCR and water injection for NO_x control, compliance with emission limits should be verified over the proposed operating range of $NH_3/NO_{x,in}$ injection ratios and water/fuel injection ratios. Emissions in the non-standard operating range shall meet the alternative performance standard requirements. If compliance is not verified over the BACT design operating range, the source shall be limited to operations most protective of air quality. This limitation shall be reflected in the BACT permit condition of the PTO. For example, if a manufacturer specifies a water/fuel ratio range of 0.8 to 1.0, but the source test only verifies compliance at ratios of 0.9 and 1.0, then subsequent operation must occur at a water/fuel injection ratio no less than 0.9 and no greater than 1.0.

Once a compliant operating range is defined during the SCDP, post-SCDP tests may be streamlined by testing only at the most stringent BACT operating condition. If streamlined test requirements are considered for post-SCDP testing, the full effect of BACT process parameters on emissions must be understood and reflected in the test requirements. These determinations will be made on a case-by-case basis.

8.6 Modifications to Emission Units or Processes Previously Subject to BACT

Once an emissions unit or process is subject to BACT, any subsequent modifications to that emissions unit or process is subject to BACT. This also applies to *de minimis* changes and equivalent routine replacements (in whole or part) that may not require a permit. A few examples best clarify the intent of this section.

Example 1: A source using solvents in their process has previously installed a thermal oxidizer to control emissions due to flashing of the solvent. BACT was triggered previously and a performance standard of 98.0 percent control was established. If the source wishes to expand production that results in an increase of emissions of the controlled process, then those new emissions are subject to this existing BACT performance standard.

Example 2: An oil and gas processing line previously triggered BACT for fugitive hydrocarbon ("FHC") emissions and implemented an APCD-approved Inspection and Maintenance Program along with low-emissions technology valves and connectors. If the source wishes to modify this processing line by adding new FHC components, then the new FHC components that are added are subject to BACT standards. If the addition was *de minimis* pursuant to Rule 202, the BACT standards in the existing permit shall be

implemented by the source. If the new FHC components are subject to the permit process and the applicable NSR BACT threshold is not exceeded, then the BACT standards listed in the existing permit shall be implemented by the source. If the applicable NSR BACT threshold is exceeded, then a new BACT analysis is required.

Example 3: A source has an existing Rule 342 boiler that is permitted at 20 ppmv NOx. This was a prior BACT determination made 15 years ago. They have proposed to replace the burners in the unit with new burners also rated at 20 ppmv. The first step in the analysis is to calculate the PTE for the new burners based on the applicable Rule 342 limit of 30 ppmv NOx. If this calculated PTE exceeds the BACT threshold in Rule 802, then the new burners must meet current BACT standards (e.g., 9, 7 or 5 ppmv NOx, depending on the size of the unit). If the BACT threshold is not exceeded, then the new burners must continue to meet the existing BACT standard for the existing unit.

8.7 Engineering Evaluation and BACT

It is very important to document how the BACT determination was made. The Engineering Evaluation is the place for this documentation. The permit engineer is required to complete (as an Attachment to the Evaluation) the *Engineering Evaluation BACT Discussion List*. This checklist contains the items that should be discussed. The amount of detail will vary based on the complexity of the source and the type of equipment and operation being permitted. Where appropriate, BACT Table(s) shall be used in the permit to summarize the BACT determinations for the permit.

These tables must list both the technology and the performance standard. Standardized and boilerplate responses for small sources shall be used without deviation, unless such deviations are approved by the Supervisor of the Permitting program. The BACT documentation should appear in the ATC engineering evaluation.

8.8 Permit Conditions and BACT

If BACT is required, then the permit must have a BACT permit condition. Standard BACT permit condition language should be used as the basis for this condition. At a minimum, the condition should state what the required BACT technology and performance standards are for each BACT determination (if tables are used, the technology and the performance standard should be included in them). In addition, the condition should both refer to the section of the permit that discusses the BACT in detail and incorporate that section as a part of the condition. The condition should also state that the specified BACT must be in place at all times of operation during the life of the project/permit.

Prescribed BACT limits must also be supplemented by permit conditions that require compliance monitoring, recordkeeping and reporting such that the source demonstrates continuous compliance with BACT. Surrogate emission monitoring (e.g., fuel use monitoring, ammonia injection ratios into a gas turbine) may be considered as an alternate or supplemental compliance verification method in lieu of, or in combination with, Continuous Emissions Monitoring ("CEMS"). Specific monitoring, recordkeeping and reporting requirements are determined on a case-by-case basis.

8.9 Multi-Year or Phase Projects

For each phase of a multi-year, multi-phase project with significant time intervals between the phases, a reassessment of BACT may be necessary. The proposed ATC permit conditions should reflect this reassessment requirement. For example, the proposed ATC permit should a BACT Re-Opener permit condition. This permit condition should indicate the specific time prior to the beginning of construction for each phase that this re-analysis must be completed. It is the permit holder's responsibility for initiating the BACT re-analysis for each phase.

9.0 BACT and RULE 331

APCD Rule 331 (*Fugitive Hydrocarbon Inspection and Maintenance*) contains a provision that requires the installation of BACT for specific individual components that fail to meet certain requirements of that rule. BACT required by Rule 331 is treated the same as if it were for a NSR application.

10.0 DOCUMENTING BACT

All BACT determinations made at the APCD must be properly documented. This ensures a level of consistency among similar sources within the County. In addition, good documentation allows our database of knowledge to be accessible to industry, the public and to other agencies, both in and outside Santa Barbara County.

10.1 APCD BACT Database/ARB BACT Clearinghouse

All BACT determinations are to be tracked in a database. Our agency uses the ARB's BACT Clearinghouse as our primary database repository. The permit engineer is responsible for submitting to the Supervisor of the Permitting Section a completed ARB *BACT Determination Reporting Form* when the ATC permit is issued and a *BACT Implementation Reporting Form* when the initial PTO is issued. The Supervisor will ensure that the BACT determination is uploaded to the Clearinghouse.

10.2 USEPA RACT/BACT/LAER Clearinghouse

No additional reporting to EPA is required as long as our BACT determinations are uploaded to the ARB BACT Clearinghouse. ARB automatically transfers our determinations to the EPA Clearinghouse for us.

10.3 Internet Webpage

The Engineering section of the APCD's Webpage contains a listing of BACT information for common source types (e.g., oil & gas industry, boilers).

11.0 RESPONSIBILITIES OF THE PERMIT ENGINEER

The permit engineer is responsible for the following:

11.1 Pre-application meetings for their project. As needed, meet with the applicant up front to address what BACT might be for the proposed project. For larger and/or complex project, have the Supervisor of the Permitting Section attend.

11.2 Initial Application Review. The permit engineer reviews the BACT aspects of the application for completeness performing the following:

- Assess the PTE for the project and the source to determine the pollutants subject to review (seek guidance from the Supervisor of the Permitting Section for Federal PSD projects).

- Assess whether the application is for equipment that has a current BACT determination.

- Review all the BACT Analysis Summary Forms (APCD-02) for each process subject to BACT to ensure all information is provided.

- Review the application against the items listed in the Engineering Evaluation BACT Discussion Checklist to ensure adequate information is provided.

- Brief the Supervisor of the Permitting Section and obtain initial feedback on whether the application should be deemed complete or if the BACT information is inadequate. Initial feedback on whether TF BACT should be considered can also be made at this point.

- For TF BACT and PSD BACT, detailed review and internal deliberations must occur prior to making a completeness determination.

11.3 Permit Processing.

- If NAR BACT review is triggered, the permit engineer compares the applicant-proposed BACT with that identified for the appropriate class or category of source for prior District BACT determinations. The permit engineer must also review other available BACT databases and guidelines (see Section 6.0 above). The permit engineer may make a recommendation based on this supplemental review. The permit engineer shall prepare a summary of the applicant's BACT proposal and attach copies of the applicant-completed BACT Analysis Summary Form(s), proposed BACT related permit conditions and table(s), permit engineering evaluation and any other relevant information.

- If the permit application is for a source category found in the ARB BACT Clearinghouse or for a BACT determination previously made by the District, and the appropriate BACT is proposed, the permit engineer should document these findings. No further review is required.

- For PSD BACT applications, the permit engineer should prepare a summary of the applicant's BACT proposal and include with it a copy of the applicant's PSD BACT Top-Down Analysis for Supervisor review - if included with the application. Applications for PSD BACT should be treated as AIP NAR BACT if no Top-Down Analysis was submitted.

- The permit engineer must keep the Supervisor informed of any applicant proposed changes in the proposed BACT or any applicant concerns. Copies of written correspondence regarding BACT shall be directed to the Supervisor of the Permitting Section for their review.

- Once the ATC permit is issued, the permit engineer shall submit a completed ARB BACT Determination Reporting Form to the Supervisor of the Permitting Section.

- Once the PTO permit is issued, the permit engineer shall submit a completed ARB BACT Implementation Reporting Form to the Supervisor of the Permitting Section.

11.4 Scheduling

The permit engineer is responsible for arranging meetings and/or telephone conferences that are specific to the project. Due to workloads of other staff that may be needed to assist in the BACT review process; the permit engineer should plan sufficient time into the completeness review period.

12.0 ABBREVIATIONS

AIP	-	Achieved-in-Practice
NAR	-	Nonattainment Review
PSD	-	Prevention of Significant Deterioration
PTE	-	Potential to Emit
TF	-	Technology Forcing
NEI	-	Net Emissions Increase
RLBC	-	RACT, LAER, BACT Clearinghouse
LAER	-	Lowest Achievable Emission Rate

From: Michael F. Goldman
To: "Richard Mather"
Bcc: David I. Harris; Kevin M. Brown
Subject: Source Testing
Date: Wednesday, March 1, 2017 2:01:00 PM

Hi Richard,

Just wanted to share with you a conversation I had with EPA recently regarding winery emission control source testing. In particular, we discussed the CCWS question and options, including a potential EPA study to evaluate source testing methodologies (a longer term project). In the meantime, EPA provided us guidance that source testing using the mass balance calculations currently in place would be an acceptable compliance tool in lieu of traditional inlet/outlet source testing. Once complete, we would utilize EPA's test method for new projects. I'll also be sharing this information with Patrick Thompson.

Sincerely,

Mike

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From:	Patrick Thompson
To:	Michael F. Goldman
Cc:	SD Colomé
Subject:	EPA Position on Winery VOCs
Date:	Friday, January 6, 2017 1:00:17 PM
Attachments:	image003.png SJV Wineries EPA Comments 2016 0930.pdf SJV Wineries SJV letter to EPA 2016 1007.pdf SJV Wineries EPA letter to SJV 2016 1007.PDF Dec 16 2016 SJVAPCD ATC.pdf

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Hi Mike,

Thanks again for your time today on the phone. As discussed, attached please find the recent EPA letter to the SJVAPCD ("...0930.pdf").

Also attached are the SJVAPCD's response, the EPA's confirmation (both "...1007..."), and an example of the Final ATCs (prohibiting construction until a Title 5 permit is received. The other 3 were worded identically.)

We share your hope that the EPA is helping to move this to some sort of actionable clarity.

Two other follow ups:

1) When you talk to EPA, can you support the concept that they fund a review of source testing for this category? This may take a while (and even more if it is determined that new method(s) need validating), but it would be good to get it started. In the meantime, we can use mass balance, but a solid assessment of actual emissions factors and inventory is long overdue.

2) Do you have any examples of standard vendor guarantees you can share?

Thanks and best regards!,

-PT

EcoPAS

Patrick Thompson, CEO

Cell: 949.436.0318

CA Contractors Lic. #1018317

"EcoPAS has cracked the code, turning something previously wasted into a wonderful new winemaking resource."

-Clark Smith, 2016 Innovator of the Year (Wine Business Monthly)