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BEFORE THE HEARING BOARD OF THE SANTA BARBARA COUNTY

AIR POLLUTION CONTROL DISTRICT

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. 2017-21-AP; H.B. Case No. 2017-24-AP **DECLARATION OF STEVEN BRANOFF IN SUPPORT OF WINE INSTITUTE'S PETITION FOR REVIEW**
IN RE: PETITION OF WINE INSTITUTE FOR REVIEW OF ATC ISSUED TO CENTRAL COAST WINE SERVICES FINAL AUTHORITY TO CONSTRUCT MODIFICATION 15044-01; FID 11042; SSID 10834.	Date: TBD Time: TBD Place: TBD

I, Steven Branoff, hereby declare:

1. I make this declaration of my own personal knowledge, except where stated on information and belief, and if called to testify to the matters stated herein, I could and would do so competently.

I. Relevant Experience

2. I am a Principal of Ramboll, an engineering consulting firm with offices throughout the U.S. and overseas. I have worked in the field of air quality for twenty years, including performing air-quality consulting for fifteen years. I hold a Master of Science degree in Environmental Engineering from the University of California at Berkeley. I also hold a Certified Air Permit Professional (CAPP) certification from the San Joaquin Valley Air Pollution Control District (SJVAPCD).

3. One of my primary areas of expertise is the assessment of air pollution control technologies, such as are at issue in this appeal. I have performed numerous air pollution control technology assessments, as required for compliance with Local, State, and Federal air quality regulations for various industrial source categories, including wineries.

4. Prior to joining Ramboll, I worked for five years in the Air Permits Office of the United States Environmental Protection Agency (USEPA) Region 9 office in San Francisco, California. While at USEPA, in 1999, I performed the technical review of an emissions control technology called SCONOx used to control emissions from power plant turbines. In that case, the vendor petitioned USEPA to determine that SCONOx had demonstrated an emission rate below the current "achieved in practice" limit. This was a challenging case, involving the review of a significant amount of continuous emission monitoring data gathered over a year-long period. Based on my review, USEPA concluded that SCONOx was capable of meeting—but not exceeding—the current "achieved in practice" limit. The primary issue in that case was the lack of consistent data, measured over a continuous period of operation, documenting compliance with the requested limit.

5. While at Ramboll, I have assisted several wineries with air quality regulatory compliance. Among other projects, in 2015, I worked as a consultant for the Monterey Bay Unified Air Pollution Control District (MBUAPCD) to perform the technical review and draft permit conditions for air permit applications submitted by Kendall Jackson Wine Estates, Ltd.

This work included an analysis of BACT for wine fermentation tanks.

6. Also while at Ramboll, in 2013, I served as an expert witness on behalf of DTE Energy in the successful appeal of an air permit containing an "achieved in practice" BACT determination made by the Bay Area Air Quality Management District (BAAQMD). In that case, BAAQMD determined that the use of Selective Catalytic Reduction (SCR) had been "achieved in practice" for engines fired on collected landfill gas. At the time, there was one similar facility in the Bay Area using this technology, and its compliance record was inconsistent. The BAAQMD Hearing Board remanded the permit back to BAAQMD staff for further review, who then postponed the "achieved in practice" decision.

7. The following are opinions that I have developed after a review of the administrative record for this appeal, as well as relevant regulations and guidance.

II. Background on Determining BACT

8. Commercial and industrial facilities located in Santa Barbara County, California are subject to regulations adopted by the Santa Barbara County Air Pollution Control District (SBCAPCD). Those regulations include a requirement to obtain an air permit prior to construction of a new or modified source. Sources of emissions that exceed the thresholds listed in SBCAPCD Rule 802 ("New Source Review") are required to apply Best Available Control Technology (BACT).

9. The pollutant of concern in this appeal is Reactive Organic Compounds (ROCs). ROCs are considered a "nonattainment" pollutant because Santa Barbara County is designated as "Nonattainment-Transitional" because it has not attained the California Ambient Air Quality Standard (CAAQS) for ozone. ROCs are regulated as a precursor to ozone.

10. SBCAPCD Rule 802.D.2 defines BACT for nonattainment pollutants to be the most stringent of the following:

- 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

- The most stringent limitation contained in any State Implementation Plan; or
- Any other emission control device or technique determined after public hearing to be technologically feasible and cost-effective by the Control Officer.

11. Central Coast Wine Services (CCWS) operates a winery located in Santa Maria, California, within the area regulated by the SBCAPCD. On August 18, 2017, SBCAPCD issued an Authority to Construct (ATC) permit to CCWS for a proposed modification to its facility. This permit contains a requirement that CCWS must employ BACT to achieve a combined capture and control efficiency of 67.0% (mass basis) of its ROC emissions during fermentation. Compliance with this limit is determined over the course of the fermentation season, through the use of one or both of the existing emissions control systems at CCWS (two NohBell NoMoVo systems and one EcoPAS system).

III. The Emission Control Systems Have Not Demonstrated a Level of Control That Should be Considered "Achieved in Practice."

12. On the same day as the issuance of the ATC to CCWS (August 18, 2017), SBCAPCD also released a memorandum entitled "Achieved in Practice Determination for Wine Fermentation Emission Control Technologies." This memorandum discusses SBCAPCD's basis for determining that the NoMoVo and EcoPAS systems used at CCWS, along with the packed bed scrubber system used at Terravant Wine Systems, are considered achieved in practice emission control technologies for wine fermentation operations.

13. Based on my review of the record for the CCWS permit and the August 18, 2017 SBCAPCD Wine Fermentation BACT memorandum, it is clear that the emission control technologies listed by SBCAPCD have not been "achieved in practice" for wine fermentation operations. The basis for this opinion is outlined below.

A. Criteria for Determining "Achieved in Practice"

14. SBCAPCD Policy Number 6100.064.2017 contains guidelines on determining

BACT, including a discussion of requirements for a control option to be considered "achieved in practice." This term is not defined in SBCAPCD or USEPA regulations. The BACT Policy contains few criteria for how to determine when a control option has been achieved in practice, other than that it must have a "proven 'track-record' of reliability."

15. USEPA has outlined criteria it recommends for making an achieved in practice determination. These criteria have been adopted by the South Coast Air Quality Management District (SCAQMD) into its BACT Guidelines.[1] These criteria include: (1) commercial availability, (2) reliability, (2) effectiveness and (4) cost, for a class or category, rather than for an individual facility. These criteria are further discussed below with respect to BACT for wine fermentation tanks.

16. Similar criteria were also used by SJVAPCD in its memorandum describing the reasons why they believe add-on controls have not been achieved in practice for wine fermentation tanks.[2] To date, in multiple BACT determinations for wineries located in the San Joaquin Valley, SJVAPCD has continued to treat add-on control options for consideration as potentially "technologically feasible and cost effective" BACT options, but not as achieved in practice.[3] This is also codified in the SJVAPCD BACT Guidelines, a listing of current BACT for commonly permitted source categories.[4]

B. The Control Efficiency Achieved by the Emission Control Systems Has Not Been Adequately Quantified.

17. The SBCAPCD BACT Policy states that a BACT determination must include a BACT "performance standard" and that BACT "is not achieved solely through the specification of the BACT control technology being employed." (See Section 8.1) In other words, BACT must be associated with a numerical emission limit or control efficiency, and not simply involve the

[1] SCAQMD BACT Guidelines, Part C - Policy And Procedures For Non-Major Polluting Facilities, December 2016.
[2] SJVAPCD memorandum, "Achieved in Practice Analysis for Emission Control Technologies Used to Control VOC Emissions from Wine Fermentation Tanks," February 9, 2015 (Revised May 9, 2016).
[3] SJVAPCD Top Down BACT Analysis determinations for Permits N-1237-670-0 through -693-0 (Bear Creek Winery) and for Permits C-447-330-1 through -341-1 (E & J Gallo Winery).
[4] SJVAPCD BACT Guideline 5.4.14, available online at http://www.valleyair.org/busind/pto/bact/bactLoader.htm.

use of a specific technology.

18. The control efficiency listed in the CCWS ATC (67.0% reduction) was reportedly proposed by CCWS based on guarantees provided by the manufacturers of the NoMoVo and EcoPAS systems. Under the permit, the control efficiency will be determined based on the amount of ethanol captured by the systems as compared to a theoretical uncontrolled emissions value. This theoretical value will be calculated using emission factors for red and white wine fermentation developed by the California Air Resources Board (CARB).[5] CARB developed these factors for use by California Air Districts in estimating District-wide emissions from wineries as part of its regional planning obligations. These factors were calculated using a model published in a scientific paper, which showed the relationship between fermentation temperature and wine must sugar content.[6] Since there is significant variability in all of these factors in the real world, CARB used average values for temperature and sugar content to determine average emission factors, one for red wine and one for white wine.

19. The actual emission reduction achieved by the controls used at CCWS in prior years has never been determined. Although CCWS has recorded the amount of ethanol collected, the uncontrolled level of emissions has not been measured or accurately calculated. The model cited by CARB could be used for this purpose, but this has not been done to date. Instead, captured ethanol has been compared to a baseline developed using a standard factor (lb/gallon) that may not reflect the actual wine produced by a given facility during a given fermentation cycle. This may help explain the wide variety of control efficiencies listed in the SBCAPCD Wine Fermentation BACT memorandum (values ranging from 47.6% to 91%). If the baseline used to determine reductions were too high, the overall control efficiency would look low. Likewise, if the baseline were too low, it would appear that a larger percentage of ethanol emissions was being controlled.

[5] CARB Emission Estimation Methodology, 2005. Chapter 5.1: Food & Agriculture, Wine Fermentation.
[6] L.A. Williams & R. Boulton, "Modeling and Prediction of Evaporative Ethanol Loss during Wine Fermentation," *American Journal of Enology and Viticulture*, 32:234-242, (1983).

20. The controls used at CCWS should therefore not be considered "achieved in practice" since the "performance standard" (in this case, the level of emissions reduction achieved by these controls) has not been adequately documented.

C. The Most Stringent Control Option Has Not Been Identified

21. The definition of BACT in Rule 802.D.2 requires BACT to be determined as the "more stringent of" the three BACT categories, including "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." In its Wine Fermentation BACT memorandum and in its determination of BACT for CCWS, SBPACD has not determined the "most effective" control option. Instead, the Wine Fermentation BACT memorandum lists three control technologies that should all be considered "achieved in practice" and makes no mention of the fact that each has apparently achieved very different levels of control (83.6% control listed for the packed bed scrubber vs. 67.0% control listed in the ATC for CCWS). In its letter to SJVAPCD supporting the achieved in practice determination, USEPA staff also do not acknowledge that the most stringent option should be required since in two different paragraphs they cite two very different control efficiencies (76.6% and 47.6%) as the "lowest achievable emission rate" that has been achieved in practice for wine fermentation operations.

22. I question the accuracy of any of these control efficiencies, given the use of an average emission factor as the uncontrolled baseline when calculating these, as described above. However, it is important to note that SBACPD has not followed its own regulations in determining BACT for CCWS because it has not attempted to identify the most effective control technology.

D. The Emission Control Systems Have Not Been Used or Tested During All Operating Periods

23. The SBAPCD BACT Policy states that "the permitting process must ensure that the selected BACT is effective overall [sic] operating ranges." The controls used at CCWS have not been proven effective over all expected operating ranges for which they are now required to

be used. For example, neither system used by CCWS has operated over a full fermentation cycle. The NoMoVo system was operated on 147 out of 223 days of fermentation between 2014 and 2016.[7] The EcoPAS system was operated on 108 out of 145 days in 2015 and 2016.[8] However, SBAPCD notes that neither system was operated during the beginning and end of the fermentation season, since emissions are expected to be lower during these periods. And there is no documentation that either system has been used over a full fermentation cycle on any tank. Despite this limited use, the ATC for CCWS now requires the use of these controls "at all times during fermentation operations" to achieve a control efficiency of 67.0%.

24. There is also inadequate use of the control technologies to support an achieved in practice determination for red-wine fermentation. The controls have reportedly only been used for the control of white wine fermentation at CCWS. SBCAPCD acknowledges this fact, stating that "the EcoPAS system would be expected to capture and control more ethanol if connected to tanks used for red wine fermentation." This type of speculation is not appropriate when making an "achieved in practice" BACT determination.

25. Before determining "achieved in practice" BACT, additional testing is required over a complete fermentation cycle, over the full fermentation season, and for a more representative variety of wine anticipated to be produced.

IV. USEPA's Letter to SJVAPCD is Not Binding on SBCAPCD

26. In its August 18, 2017 Wine Fermentation BACT Memorandum, SBCAPCD quotes a September 30, 2016 USEPA letter to SJVAPCD concerning the use of add-on controls for wine fermentation tanks. In this letter, USEPA staff state that the add-on controls used at CCWS and the packed bed water scrubber used at Terravant represent the lowest achievable emission rate (LAER) for wine fermentation.

27. This USEPA letter is inconsistent, stating first that a control efficiency of 76.6%

[7] SBCAPCD memorandum "Achieved in Practice Determination for Wine Fermentation Emission Control Technologies," August 18, 2017. p.5.
[8] Ibid., p.6.

represents LAER for wine fermentation, and then later that a control efficiency of 47.6% represents LAER for wine fermentation. Like BACT, LAER is defined as the "most stringent" emission limitation that has been achieved in practice.[9] So, USEPA's contention that two different levels of control both represent LAER for the same operation is inconsistent with its own regulations and longstanding practice.

28. Nevertheless, a letter stating USEPA's opinion about a LAER determination is not binding on SBCAPCD in its BACT determination. First, this letter represents the stated opinion of USEPA Region IX staff. It is not an enforceable standard, such as a regulation that has been adopted after public notice and comment. It also does not carry the import of a guidance document that has been released by USEPA Headquarters after internal deliberation and discussion about official Agency policy. The opinions expressed in USEPA's letter would be subject to change, pending additional information, or discussions with SJVAPCD, which we understand are ongoing.

29. It is also important to note that SJVAPCD is a Federal extreme ozone nonattainment area, so the wineries that were the subject of USEPA's letter are considered major sources of air pollution under the Clean Air Act. This means that these SJVAPCD wineries are subject to the Federal LAER requirement, which is satisfied by meeting California BACT. By contrast, SBCAPCD is a Federal ozone attainment area, meaning Federal LAER is not applicable. SBCAPCD's BACT requirement still applies to sources of ROC emissions, but BACT is not used to satisfy Federal LAER for wineries located in Santa Barbara County.

V. The "Achieved in Practice" BACT Determination Sets a Precedent for All Future Winery BACT Determinations

30. An "achieved in practice" determination for the NoMoVo and EcoPAS emissions controls will constrain the SBCAPCD, limit its discretion, and require the use of the emissions controls at all wineries that apply for similar permits in the future.

[9] See definition of LAER in 40 CFR 51.165(a)(1)(xiii).

31. Of the three categories listed in the definition of BACT in SBCAPCD Rule 802.D.2, the requirements listed in any State Implementation Plan (SIP) serve, essentially, as a baseline for what should be considered BACT. The SBCAPCD has no power to alter such requirements, and has very little discretion in their implementation. For controls that are not already required by a SIP-approved rule, the two other BACT categories are controls considered "technologically feasible and cost-effective" and controls considered "achieved in practice."

32. In my experience, SBCAPCD's BACT Policy is consistent with the way that other California Air Districts determine BACT. Controls are only deemed to be "achieved in practice" for a given type of equipment once they have a "proven 'track-record' of reliability." Until such time, controls may be selected as BACT if they are both "technologically feasible" and "cost-effective." However, once a control option has been deemed "achieved in practice," cost or other feasibility issues are no longer allowed to be considered in the BACT determination. So, the "achieved in practice" category may be considered to be the most stringent category of BACT.

33. If determined to be achieved in practice, the emissions controls will be required at many facilities in Santa Barbara County, including relatively small wineries. SBCAPCD Rule 201 contains a general requirement for facilities to obtain an air permit, and Rule 202 contains exemptions from this requirement. Rule 202.K.7 states that wineries with emissions below 1.00 ton per year are exempt from permitting. Using the CARB average emission factor for red wine, this translates to a fermentation facility producing about 4,000 gallons/day of red wine. The daily ROC emissions from a fermentation facility of this size would be 25 lb/day, meaning that any fermentation facility requiring an air permit in Santa Barbara would also trigger BACT. The achieved in practice BACT determination made by SBCAPCD would therefore require that any new or modified wine fermentation facility in Santa Barbara would require the use of a control device, regardless of cost.

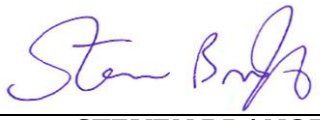
34. This requirement is significantly more stringent than any other District in California. SJVAPCD, for example, lists several control options that must be considered for

technological feasibility and cost effectiveness when determining BACT.[10] However, they have not listed these controls as "achieved in practice" and have rejected this determination in response to USEPA comments. The result is that the District retains the ability to make a final decision about BACT on a case-by-case basis, considering the individual operations at each source, including overall size, type of wine produced and cost effectiveness of control options.

VI. Conclusion

35. For the reasons described above, the use of air pollution control systems on wine fermentation tanks have not satisfied the criteria to be considered "achieved in practice." The designation of these systems as "achieved in practice" BACT would set an unnecessarily strict precedent for air permits issued to all future wine fermentation operations.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration was executed this 5th day of January, 2018, at San Francisco, California.



STEVEN BRANOFF

[10] SJVAPCD BACT Guideline 5.4.14.