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Noise Study

Bonny's Vineyard P22-00002
Planning Commission Hearing Date
December 18, 2024



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Hygiene Services, Inc.*

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June 29, 2022
CIHS Project 410-01

Mr. Matt Dexter
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1607 Capell Valley Road
Napa, CA 94558

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Subject: Bonny's Vineyard
Estimated Noise Levels for Outdoor Wine Tasting and Marketing
Events

Dear Mr. Dexter:

California Industrial Hygiene Services Inc. (CIH Services) is pleased to provide this estimation of noise levels for outdoor wine tasting and marketing events (outdoor events).

Background

The Meyer Family Enterprises, LLC is in the process of obtaining Napa County (County) approvals and permits to construct a winery. As part of the approval process the County has requested a determination of noise levels, from outdoor events, at a residence located within 500 feet of the proposed winery.

Site Description

The proposed project is located at 1555 Skellenger Lane, Napa, California. The nearest noise receptor (a single-story residence) is approximately 490 feet to the west of the proposed winery location. The area surrounding the site is mainly flat and planted with grapes. There is a wooded creek (Conn Creek) between the proposed winery location and the nearest noise receptor.

Outdoor Events

The following are some details concerning the proposed outdoor events:

- There may be up to 45 daily visitors for wine tours and tastings.
- Nine small events per year are planned, with a max of 80 persons per event.



- Two large events per year are planned, with a maximum of 150 persons per event.
- There will be no outdoor amplified music.

Napa County Noise Limits

The Napa County Code of Ordinances¹ (Code) provides maximum limits for exterior noise. According to Table 8.16.070 of the Code, the noise limits for the nearest receptor are 45 dBA (between 10 pm and 7 am) and 50 dBA (between 7 am and 10 pm).

Note: This assumes a receiving land use category of "Residential" and a noise zone classification of "Rural."

This noise standard cannot be exceeded:

- for a cumulative period of more than thirty minutes in any hour; or
- The noise standard plus five dB for a cumulative period of more than fifteen minutes in any hour; or
- The noise standard plus ten dB for a cumulative period of more than five minutes in any hour; or
- The noise standard plus fifteen dB for a cumulative period of more than one minutes in any hour; or
- The noise standard plus twenty dB or the maximum measured ambient level, for any period of time.

Calculated Noise Levels

Assumptions:

The following are the assumptions that were used to calculate crowd noise at the nearest receptor site:

1. The maximum number of guests at a single event would be 150.
2. All 150 guests would be there at the same time.
3. The outdoor events would be held at the proposed winery location.
4. It will be a diffuse crowd with no unifying influence.
5. Alcohol consumption will be moderate.
6. Each individual making up a crowd will have his or her own orientation with respect to the receiver.

¹ Napa County Code of Ordinances; Title 8. Health and Safety; Chapter 8.16. Noise Control Regulations



Sound Power Calculation

Sound power levels (L_{WAeq}) for a crowd size N can be approximated from the following formula:

$$L_{WAeq} = 15 \log N + 64 \text{ dBA}$$

Sound Pressure Calculation at the Receptor

Using the sound power level calculated above the sound pressure level (Lp) at a distance (d) in ft, can be calculated from the following formula for sound radiating in a hemisphere from a point source:

$$L_{WAeq} = Lp + 10 \log 2\pi d^2 - 10$$

The calculated sound pressure levels for various numbers of attendees are provided in Table 1. None of the calculated levels were above the maximum noise limits in the Code.

Table 1
Sound Pressure at Nearest Receptor for Various
Numbers of People Attending Events or Tasting
Wine

Sound Pressure (dBA)	Distance to Receptor (ft)	Sound Power Level (L_{WAeq})	Number of People
44.9	490	96.6	150
40.8	490	92.5	80
37.0	490	88.8	45

Opinion

The calculated noise levels at the nearest receptor were not above the County limits.

Limitations

This opinion was prepared by California Industrial Hygiene Services Inc. under the professional direction and review of the person whose name and seal are provided below. The professional services provided by California Industrial Hygiene Services, Inc. were performed within the limits prescribed by the client and in accordance with generally accepted industrial hygiene industry practices. The findings and recommendations presented herein reflect the professional opinions of

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M.J. Hayne, J.C. Taylor, R.H. Rumble, and D.J. Mee; *Prediction of Noise from Small to Medium Sized Crowds*; Paper Number 133, Proceedings of Acoustics 2011




California Industrial Hygiene Services, Inc. No warranties, either express or implied, or guarantees, are made as to the sole benefit of client and shall not be construed to create benefits to, responsibilities to, or rights in any third party.

Thank you for the opportunity to work on this project. Please do not hesitate to contact us if you have any questions.

Best regards,

CALIFORNIA INDUSTRIAL HYGIENE SERVICES INC.



William J. Cornils, Ph.D., CIH, CSP, PE
Executive Vice President



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By Electronic Mail

