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# Wastewater Treatment and Disposal Feasibility Study

Hillwalker Vineyards Winery Use Permit P23-00101-UP and Exception  
to the Conservation Regulations P23-00239-UP  
Planning Commission Hearing Date (August 7, 2024)

February 8, 2024



## Hillwalker Vineyards

### Wastewater Treatment and Disposal Feasibility Study Winery Use Permit Application

This project is located at 1871 Mt. Veeder Road in Napa County, California, APN: 034-110-047. The parcel is approximately 20.46 acres. This property is currently developed with a 5-bedroom main house, a 1,500-sf finished cave, a garage, pool, pool bathroom building, several wells, water storage tanks and an engineered septic system.

This project proposes to convert the existing residential cave into a winery. The proposed winery will perform crushing, fermenting and bottling onsite in the existing cave. The winery proposes to produce up to 7,000 gallons of wine per year. A hold and haul system will be used to collect winery process wastewater. A trucking company will be hired to collect winery process wastewater from the hold and haul tanks to be transported to an approved wastewater treatment facility for disposal. The existing onsite domestic wastewater system is an engineered septic system that was installed in 2007 under permit E06-01102. This existing engineered septic system was approved for 900 gallons per day. This existing engineered septic system was installed with excess capacity that will be available to support the increased use from visitors to the proposed winery.

#### Septic History

A septic site evaluation was conducted in 2004 for a residential development under permit E04-0176. This septic site evaluation was used to permit an engineered drip dispersal septic system to serve up to 900 gallons per day. This existing engineered septic system was permitted and installed under Napa County permits E06-0158 and E06-01102.

The existing house has 5 potential bedrooms. The existing engineered septic system was permitted for 900 gallons per day. Each potential bedroom generates 120 gallons per day. Therefore, there is an excess daily capacity of 300 gallons available for use for domestic wastewater from the proposed winery.

Adequate septic reserve area is available on the property. Please see Napa County Records for the existing septic reserve area.

#### Proposed Process Wastewater Production

The proposed winery will perform crushing, fermenting and bottling to produce up to 7,000 gallons of wine per year onsite. The Hillwalker Vineyard Winery strives for very low impact farming and wine making practices. The Hillwalker Vineyard Winery strives to use very little water by implementing dry farming of the vineyard and using water conservation techniques in wine production. The proposed 7,000 gallon per year winery estimates to produce less than 3 gallons

of process wastewater per gallon of wine.

A hold and haul process wastewater disposal system will be permitted and installed to dispose of the process wastewater. It is estimated by the property owner and wine maker that the total process wastewater production will be approximately 3.0 gallons per gallon of wine or 21,000 gallons per year.

The peak daily winery process wastewater production is calculated as follows:

Annual Winery Production in Gallons = 7,000 gallons per year

Multiplication Factor = 1.5

Crush Days for Wineries Producing 20,000 Gallons or Less = 30 days

Daily Peak Process Wastewater Production =  $7,000 \text{ gal} * 1.5 / 30 \text{ day} = 350 \text{ gal/day}$

It is estimated that the peak daily wastewater flow from the proposed winery will be 350 gallons per day.

It is required to provide at least 7 days of storage for a hold and haul winery process wastewater system. The minimum required holding tank will be  $7 * 350 \text{ gallons} = 2,450 \text{ gallons}$ . One 2,500 gallon holding tank will be proposed to be installed for the hold and haul system.

Process wastewater reserve area will be available through onsite treatment and surface drip irrigation to the existing vineyard. The property has two vineyards. An upper vineyard is approximately 1.5 acres and the lower vineyard is approximately 3.0 acres. The upper vineyard contains the existing domestic wastewater system and reserve area. Portions of the upper vineyard also falls within groundwater well setbacks. The upper vineyard is not proposed to be used for the winery process wastewater reserve area. The lower vineyard is outside of all setback and is proposed to be used as the winery process wastewater reserve area. The lower vineyard is approximately 3.0 acres. There are approximately 900 vines per acre for a total of 2,700 vines in the lower 3-acre vineyard. The estimated peak daily process wastewater flow is 350 gallons per day. Irrigation of 350 gallons per day over 2,700 vines would be 0.12 gallons or 0.45 liters per vine. Therefore, the existing available 3-acre lower vineyard will be more than sufficient reserve area for winery process wastewater treatment and disposal. A process wastewater treatment system and treated effluent storage tank would be required as part of this reserve system.

### **Proposed Domestic Wastewater Production**

The proposed Hillwalker Vineyard Winery proposes up to 45 visitors per day. The proposed winery is proposing to have 2 full-time employees and 3 part-time employees. The existing engineered septic system has an approved capacity of 900 gallons per day.

5 bedroom house @ 120 gallons/bedroom = 600 gallons

5 employees @ 15 gallons/employee = 75 gallons

35 guests for daily tours and tastings @ 3 gallons/guest = 105 gallons

45 guests for wine marketing events @ 5 gallons/guest = 225 gallons

The largest daily wastewater volume will be generated during a wine marketing event. Daily tours and tastings will not be held on the same day as a wine marketing event. The peak daily wastewater volume will be a combination of residential, employee and marketing event guests. The total peak daily wastewater volume is calculated below.

Total Peak Domestic Wastewater Production = 600 gallons + 75 gallons + 225 gallons = **900 gallons**

The existing engineered domestic septic system has a capacity of up to 900 gallons per day. Adequate septic reserve area is shown on the approved septic system plan permitted under E06-01102.