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Water Availability Analysis

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

Stillwater Civil Design
1090 Shetler Ave., Napa, CA 94559 – (707) 974-9261 – rangel@stillwatercivil.com

February 9, 2024

Hillwalker Vineyards

Water Availability Analysis
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, four wells, water storage tanks and an engineered septic system. The 4 existing onsite wells will be used to supply water for the proposed winery. No new wells are proposed for this project.

This winery use permit is proposing to produce 7,000 gallons of wine per year. This project proposes to convert the existing residential cave into a winery that will produce up to 7,000 gallons of wine per year onsite. The proposed winery will perform crushing, fermenting and bottling onsite in the existing cave. The winery use permit application proposes minimal winery visitation for tours and tastings.

Water Use Estimate

Approximately 4.5 acres of vineyard are currently on the property. 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. The existing vineyard was previously irrigated with up to 0.5 acre-feet per acre per year (733,000 gallons per year [2.25 ac-ft/yr]). The vineyards are no longer irrigated which will provide a very large water saving.

The winery proposes to produce up to 7,000 gallons of wine per year. The Hillwalker Vineyard Winery strives to use very little water by implementing water conservation techniques in wine production. The proposed 7,000 gallons of wine that will be produced onsite is estimated to use less than 3 gallons of water per gallon of wine during the wine making process.

Estimated annual water use for vineyard irrigation and wine projection are as follows:

Vineyards-
4.5 acres of vineyard (dry farmed) @ 0.2 acre-feet per acre per year = 0.9 acre-feet

Winery-
7,000 gal of wine produced using 3 gal of water/gal of wine = 21,000 gallons (0.064 ac-ft)

Domestic Water Use for Employees and Guests-
5 employees @ 15 gallons/employee/day * 365 days/year = 27,375 gallons/year

35 guests for wine tasting @ 3 gal/guest/day * 47 days/year = 4,935 gal/yr

13 guests for wine tasting @ 3 gal/guest/day * 306 days/year = 11,934 gal/yr

45 guests for wine marketing events @ 5 gal/guest/day * 12 days/yr = 2,700 gal/yr

Total Domestic Water Use = 46,944 gallons per year (0.14 ac-ft)

Landscaping-
0.5 ac-ft/year/100,000 gal wine * 5,000 gal wine = 0.025 ac-ft

Total estimated water use for vineyard and winery =
0.9+0.064+0.14+0.025 = **1.13 ac-ft per year**

Estimated water use for existing onsite residence-
0.5 ac-ft per year

Total estimated water use for vineyards, winery and residence = 1.13 + 0.5 = 1.63 ac-ft per year

Water Use Screening Criteria

The proposed winery is located in the southwestern portion of Napa County. It is located in the forested area accessed from Mt. Veeder Road between Pickle Canyon and Redwood Canyon. The site is located at an elevation of approximately 1,000 feet above mean sea level.

According to the Napa County Water Availability Analysis Guidance Document, Table 1, characterizes the property to be located in "All Other Areas". Under this Project Screening Criteria Applicability, the project is required to perform a Tier 1. The water use estimate below satisfies the Tier 1 requirements. The Tier 2 analysis requires Well and Spring Interference Criterion when a neighboring non-project well is located within 500 feet of the onsite project well. A Tier 2 analysis is not required for this project as no new wells are being proposed and the proposed water use for this project is estimated to be less than pre project water use for vineyard irrigation.

Tier 1 Allowable Water Allocation and Site Specific Groundwater Recharge Analysis

The proposed winery is located in the mountainous areas to the west of the Napa Valley Floor. The parcel is located outside of the Napa Valley Subbasin and is subject to a Parcel Specific Recharge Analysis for the Tier 1 Water Availability Analysis. Of the 20.46 acre parcel, approximately 8.5 acres is estimated to be on slopes less than 30%. Slopes over 30% are not considered to contribute to groundwater recharge. The average rainfall 10-year PRISM data is shown to be 31.76 inches annually for the property. The percent of rainfall that contributes to groundwater recharge is found in the Napa County document titled, Updated Hydrogeologic Conceptualization and Characterization of Conditions, completed by Luhdorff & Scalmanini Consulting Engineers and MBK Engineers, dated January 2013. Table 8-10 of this document show that approximately 10% of rainfall may contribute to groundwater recharge. Therefore, the average annual recharge can be estimated as 31.56 inches X 1 ft/12 in X 8.5 X 0.10 = **2.23 acre-feet** of groundwater recharge per year.

The proposed water use for the project is 1.63 ac-ft per year which is less than the estimated groundwater recharge rate of 2.23 acre-feet per year.

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Conclusion

The project takes pride in minimizing impacts to the environment. The project uses dry farming techniques and water conscientious wine making techniques. This project is estimated to use less water than was previously used to irrigate onsite vineyards. The proposed Hillwalker Vineyards Winery proposes to use a very small amount of water that is estimated to be 1.63 acre-feet per year. This is a very small amount of proposed water use for this 20.46-acre property. The site specific groundwater recharge for the property is estimated to be 2.23 acre-feet per year.

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