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## Water Availability Analysis

TIER I WATER AVAILABILITY ANALYSIS  
FOR THE  
SLEEPING LADY VINEYARD WINERY

LOCATED AT:  
5537 Solano Avenue  
Napa, CA 94558  
NAPA COUNTY APN 034-170-005

PREPARED FOR:  
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## TABLE OF CONTENTS

LIST OF APPENDICES .....	iii
INTRODUCTION .....	I
ESTIMATED GROUNDWATER DEMAND.....	3
WATER USE SCREENING CRITERIA.....	4
ANALYSIS .....	5
CONCLUSION.....	5

## **LIST OF APPENDICES**

APPENDIX I: Water Use Estimate Supporting Calculations.....	6
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## INTRODUCTION

Sleeping Lady Vineyard LLC is applying for a Use Permit to construct and operate a new winery at their property located at 5537 Solano Avenue in Napa County, California. The subject property, known as Napa County Assessor's Parcel Number 034-170-005, is located along the west side of Solano Avenue proximately 0.6 miles south of the intersection of Hoffman Lane and Solano Avenue.



Figure I: Location Map

The Use Permit application under consideration proposes the construction and operation of a new winery with the following characteristics:

- Wine Production:
  - Phase 1: 10,000 gallons of wine per year
  - Phase 2: 30,000 gallons of wine per year
  - Crushing, fermenting, aging and bottling
  
- Employees:
  - 4 employees
  
- Marketing Plan:
  - Daily Tours and Tastings by Appointment
    - 20 visitors per day maximum
  - Marketing Events
    - 10 per year
    - 30 guests maximum
    - Food prepared offsite by catering company
  - Release Events
    - 2 per year
    - 75 guests maximum
    - Food prepared offsite by catering company
    - Portable toilets brought in for guest use

As noted above wine production will be phased. Wine production will be limited to a maximum of 10,000 gallons per year for Phase 1. In Phase 2 when the new fermentation pad is constructed the maximum production level will be increased to 30,000 gallons per year.

Existing structures on the property include a single family residence, a second dwelling unit, a barn, vineyards as well as residential and agricultural accessory buildings that support the existing residential and agricultural uses on the property. According to the applicant all domestic water for the residential structures is supplied from an existing City of Napa water service and groundwater is used for irrigation of vineyards and landscaping.

Groundwater will continue to be used for landscape and vineyard irrigation as well as for the proposed winery facility. There are several groundwater wells on the property and according to the property owner the newest well in the northeast corner of the property is the primary source of all groundwater used on the property.

Sleeping Lady Vineyard LLC has requested that Applied Civil Engineering Incorporated (ACE) prepare a Tier I Water Availability Analysis in accordance with the Water Availability Analysis (WAA) – Guidance Document adopted by the Napa County Board of Supervisors on May 12, 2015. The remainder of this report describes the estimated groundwater demand on the subject property for existing and proposed conditions and compares that to the prescribed water use screening criteria.

## ESTIMATED GROUNDWATER DEMAND

Groundwater is currently used to irrigate approximately 53 acres of vineyard and 0.5 acres of landscaping as shown in Figure 2.

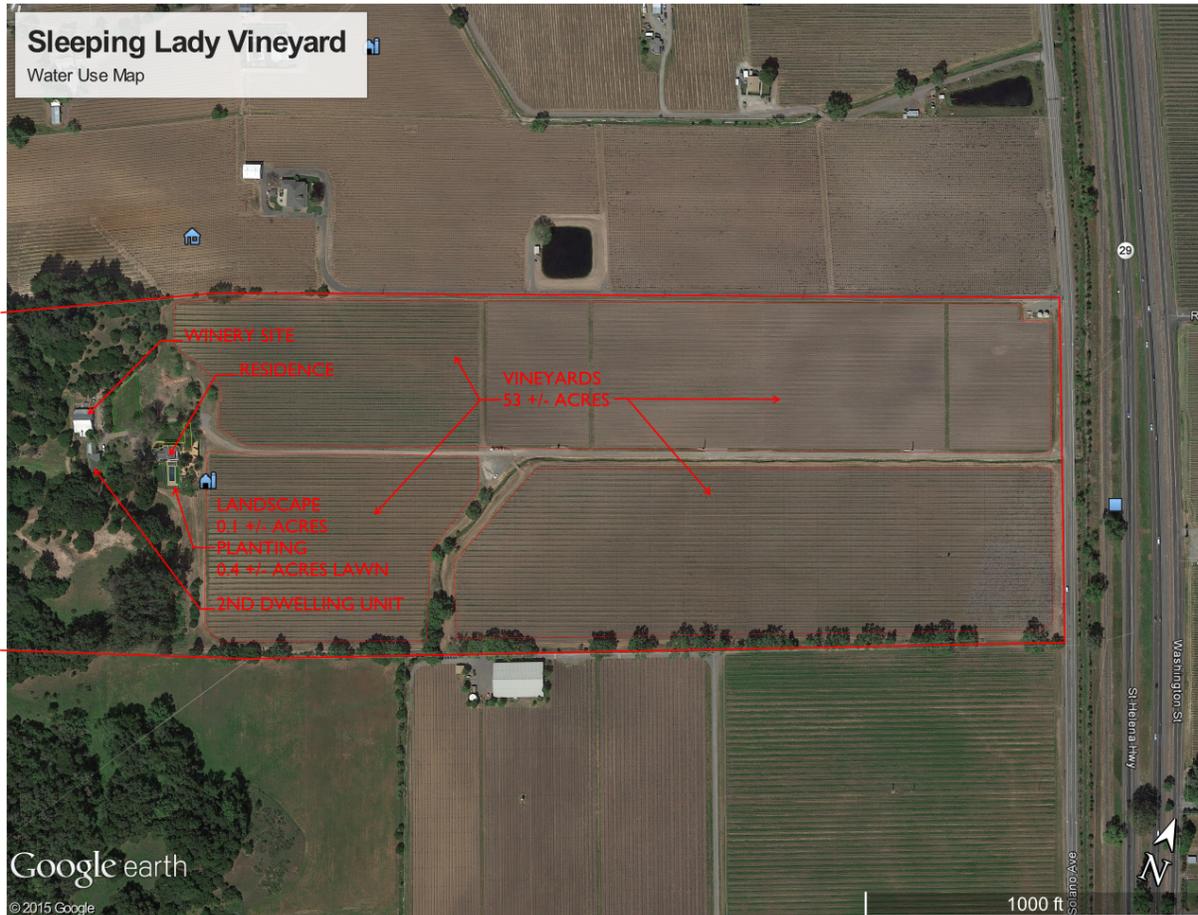


Figure 2: Water Use Map

The estimated groundwater demand is summarized in the table below and details of the calculations supporting these estimates are included in the Water Use Estimate Supporting Calculations in Appendix I.

Table I: Estimated Groundwater Demand

	Existing (ac-ft/yr)	Proposed (ac-ft/yr)
Residential	0.10	0.10
Winery	0	0.79
Vineyard Irrigation	26.5	26.5
Landscape Irrigation	1.96	1.96
<b>Total</b>	<b>28.6</b>	<b>29.3</b>

## WATER USE SCREENING CRITERIA

According to the WAA - Guidance Document properties located in the Napa Valley Floor area are subject to a Water Use Screening Criteria of 1.0 acre-feet of water per acre of land per year. A project complies with the requirements of the Tier 1 WAA if the total water use on the property is less than 1.0 acre-feet per acre per year. If the Tier 1 Water Use Screening Criteria is met and the property is located in the Napa Valley Floor area Tier 2 and Tier 3 Analyses are not required unless substantial evidence exists in the record that indicates a potential significant impact from the project.

The subject property is unique in that it is located partially in the Napa Valley Floor area and partially on the hillsides which are classified as “All Other Areas” in the WAA – Guidance Document. For the purpose of this analysis we have considered the portion of the property shown on the USGS geology maps as Qha (alluvium) to be Napa Valley Floor and the portion of the property mapped as Tpmv (volcanic rocks) to be Hillside as shown in Figure 3.

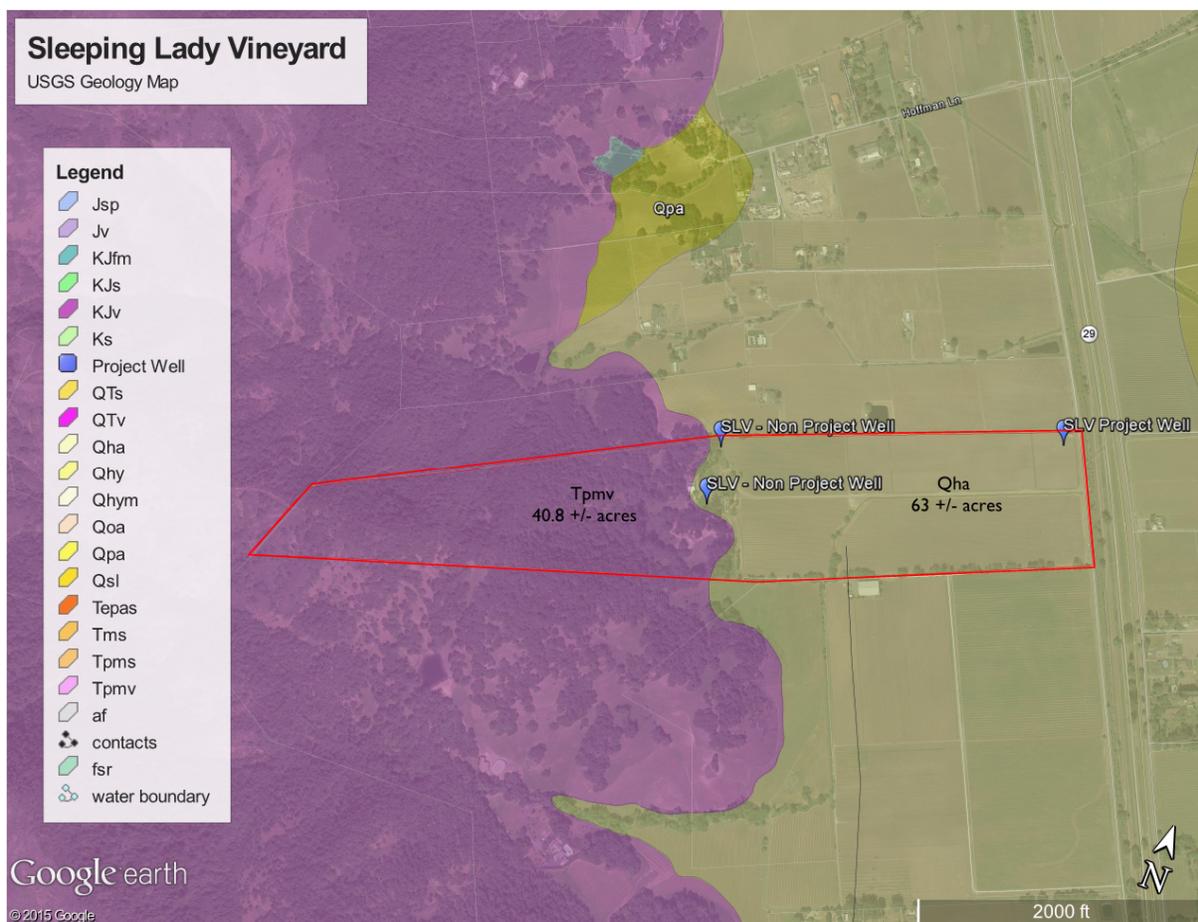


Figure 3: Geology Map Created with Google Earth Pro  
(Source USGS Scientific Investigations Map 2918)

Since all groundwater extraction is from the Napa Valley Floor area we have evaluated only the screening criteria associated with the Napa Valley Floor. The approach is conservative because there is significant additional recharge that occurs in the hillside portion of the property that is not included in this analysis.

Approximately 63 acres of the property are classified as Napa Valley Floor and therefore the water use screening criteria is calculated as follows:

Water Use Screening Criteria = 63 acres x 1.0 acre-foot per acre per year

Water Use Screening Criteria = 63 acre-feet per year

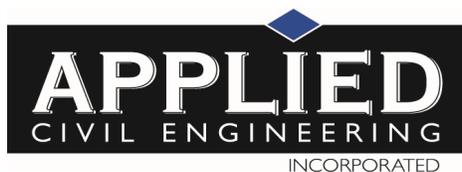
## **ANALYSIS**

The total Estimated Water Use for existing conditions (28.6 ac-ft/yr) and proposed conditions (29.3 ac-ft/yr) are both substantially less than the Water Use Screening Criteria (63.0 ac-ft/yr). Furthermore, this analysis very conservatively does not include groundwater recharge from the Hillside portion of this property.

## **CONCLUSION**

Since the Water Use Screening Criteria is met, even without accounting for recharge from the hillside portion of the property, the project is found to comply with the Napa County Water Availability Analysis requirements. Tier 2 and Tier 3 Analyses are not required according to the WAA – Guidance Document.

APPENDIX I: Water Use Estimate Supporting Calculations



**Sleeping Lady Vineyard Winery  
Groundwater Use Estimate**

	Estimated Water Use (Acre-Feet / Year)	
	Existing	Proposed
<b>Residential Water Use</b>		
Primary Residence <sup>(10)</sup>	0.000	0.000
Pool	0.100	0.100
Second Dwelling Unit <sup>(10)</sup>	0.000	0.000
Guest Cottage - Not Applicable	0.000	0.000
<b>Total Residential Domestic Water Use</b>	<b>0.100</b>	<b>0.100</b>
<b>Winery Domestic &amp; Process Water Use</b>		
Winery - Daily Visitors <sup>(1)(2)</sup>	0.000	0.067
Winery - Events with Meals Prepared Onsite <sup>(1)(3)</sup>	0.000	0.000
Winery - Events with Meals Prepared Offsite <sup>(1)(4)</sup>	0.000	0.007
Winery - Employees <sup>(1)(5)</sup>	0.000	0.067
Winery - Event Staff <sup>(1)(5)</sup>	0.000	0.002
Winery - Process <sup>(6)</sup>	0.000	0.645
<b>Total Winery Water Use</b>	<b>0.000</b>	<b>0.788</b>
<b>Irrigation Water Use</b>		
Lawn <sup>(7)</sup>	1.742	1.742
Other Landscape <sup>(8)</sup>	0.218	0.218
Vineyard - Irrigation	26.500	26.500
Vineyard - Frost Protection	0	0
Vineyard - Heat Protection	0	0
<b>Total Irrigation Water Use</b>	<b>28.460</b>	<b>28.460</b>
<b>Total Combined Water Use</b>	<b>28.6</b>	<b>29.3</b>

Estimates per Napa County Water Availability Analysis - Guidance Document, May 12, 2015 unless noted

<sup>(1)</sup> See attached Winery Production, Guest, Employee and Event Staff Statistics

<sup>(2)</sup> 3 gallons of water per guest per Napa County WAA Guidance Document

<sup>(3)</sup> 15 gallons of water per guest per Napa County WAA - Guidance Document

<sup>(4)</sup> 5 gallons of water per guest used because all food preparation, dishwashing, etc. to occur offsite

<sup>(5)</sup> 15 gallons per shift per Napa County WAA - Guidance Document

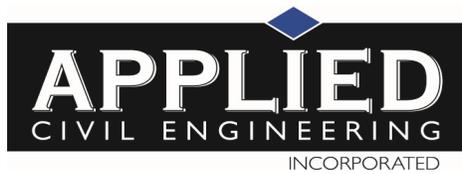
<sup>(6)</sup> 2.15 ac-ft per 100,000 gallons wine per Napa County WAA - Guidance Document

<sup>(7)</sup> 0.1 ac-ft/yr per 1,000 sf of lawn per Napa County WAA - Guidance Document - 0.4 ac lawn

<sup>(8)</sup> 0.1 ac-ft/yr per 2,000 sf landscape per Napa County WAA - Guidance Document - 0.1 ac landscape

<sup>(9)</sup> 0.5 ac-ft/ac/yr per applicant - 53 ac vineyard

<sup>(10)</sup> City of Napa Water used for Main Residence and Second Dwelling Unit



**Sleeping Lady Vineyard Winery  
Winery Production, Visitor, Employee & Event Staff Statistics**

**Winery Production<sup>(1)</sup>** 30,000 gallons per year

**Tours and Tastings by Appointment<sup>(1)</sup>**

Monday through Thursday	20 guests max per day	
Friday through Sunday	20 guests max per day	
<b>Total Guests Per Year</b>		<b>7,280</b>

**Events - Meals Prepared Offsite<sup>(1)</sup>**

10 per year	30 guests max	300
2 per year	75 guests max	150
0 per year	100 guests max	0
<b>Total Guests Per Year</b>		<b>450</b>

**Events - Meals Prepared Onsite<sup>(1)</sup>**

0 per year	0 guests max	0
0 per year	0 guests max	0
0 per year	0 guests max	0
<b>Total Guests Per Year</b>		<b>0</b>

**Winery Employees<sup>(2)</sup>**

4 employees	1 shift per day	
<b>Total Employee Shifts Per Year</b>		<b>1,460</b>

**Event Staff<sup>(3)</sup>**

10 per year, 30 guests	3 event staff	30
2 per year, 75 guests	8 event staff	16
0 per year, 100 guests	10 event staff	0
<b>Total Event Staff Per Year</b>		<b>46</b>

<sup>(1)</sup> Winery production, tours and tasting and event guest statistics per Winery Use Permit Application

<sup>(2)</sup> Employee counts per Winery Use Permit Application

<sup>(3)</sup> Assumes 1 event staff per 10 guests (in addition to regular winery employees)