

TIER I WATER AVAILABILITY ANALYSIS

FOR THE

A & B VINEYARDS LLC WINERY USE PERMIT MODIFICATION

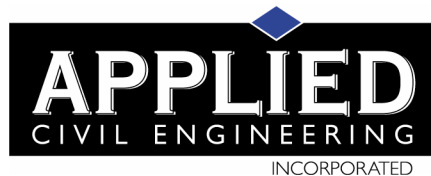
LOCATED AT:

5215 Solano Avenue
Napa, CA 94558
Napa County APN 034-190-040

PREPARED FOR:

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7/7/2025

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INTRODUCTION

A & B Vineyards LLC is applying for a Use Permit Modification to change the entitlements for their existing winery facility located at 5215 Solano Avenue in Napa County, California. The subject property is located just north of the intersection of Solano Avenue and Oak Knoll Avenue and is also known as Napa County Assessor's Parcel Number 034-190-040.



Figure 1: Location Map

The Use Permit Modification application under consideration proposes to increase production and visitation to the following levels:

- Wine Production:
 - o 45,000 gallons of wine per year
 - o Crushing, fermenting, aging and bottling
- Employees:
 - o 5 total employees

- Marketing Plan:
 - o Daily Tours and Tastings by Appointment
 - 34 visitors per day maximum
 - o Marketing Events Type #1
 - 12 per year
 - 30 guests maximum
 - Food prepared offsite by catering company
 - o Marketing Events Type #2
 - 2 per year
 - 125 guests maximum
 - Food prepared offsite by catering company
 - Portable toilets used for restrooms

Existing development on the property includes approximately six acres of vineyards, two wells, access roads, winery buildings and the related access and utility infrastructure typical of this type of agricultural and winery development. Water for the winery will be provided by the existing Winery Well located on the subject property. Please see the A & B Vineyards LLC Use Permit Modification Conceptual Site Improvement Plans for approximate locations of existing and proposed features.

Groundwater is currently used for vineyard irrigation and to support the existing A & B Vineyards LLC Winery. Groundwater will continue to be used for these activities moving forward including the proposed winery use modifications.

The second well on the property is used exclusively by the adjoining winery, Silenus Vintners, located on APN 034-212-035. According to the property owner, this well supplies water for the existing winery and vineyards and the residential uses on the property are supplied by the City of Napa water system.

A & B Vineyards 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 six acres of vineyard and support the existing A & B Vineyards LLC Winery on the subject property and approximately six acres of vineyard and the existing Silenus Vintners Winery on the adjacent property (via a well easement) as shown in Figure 2.

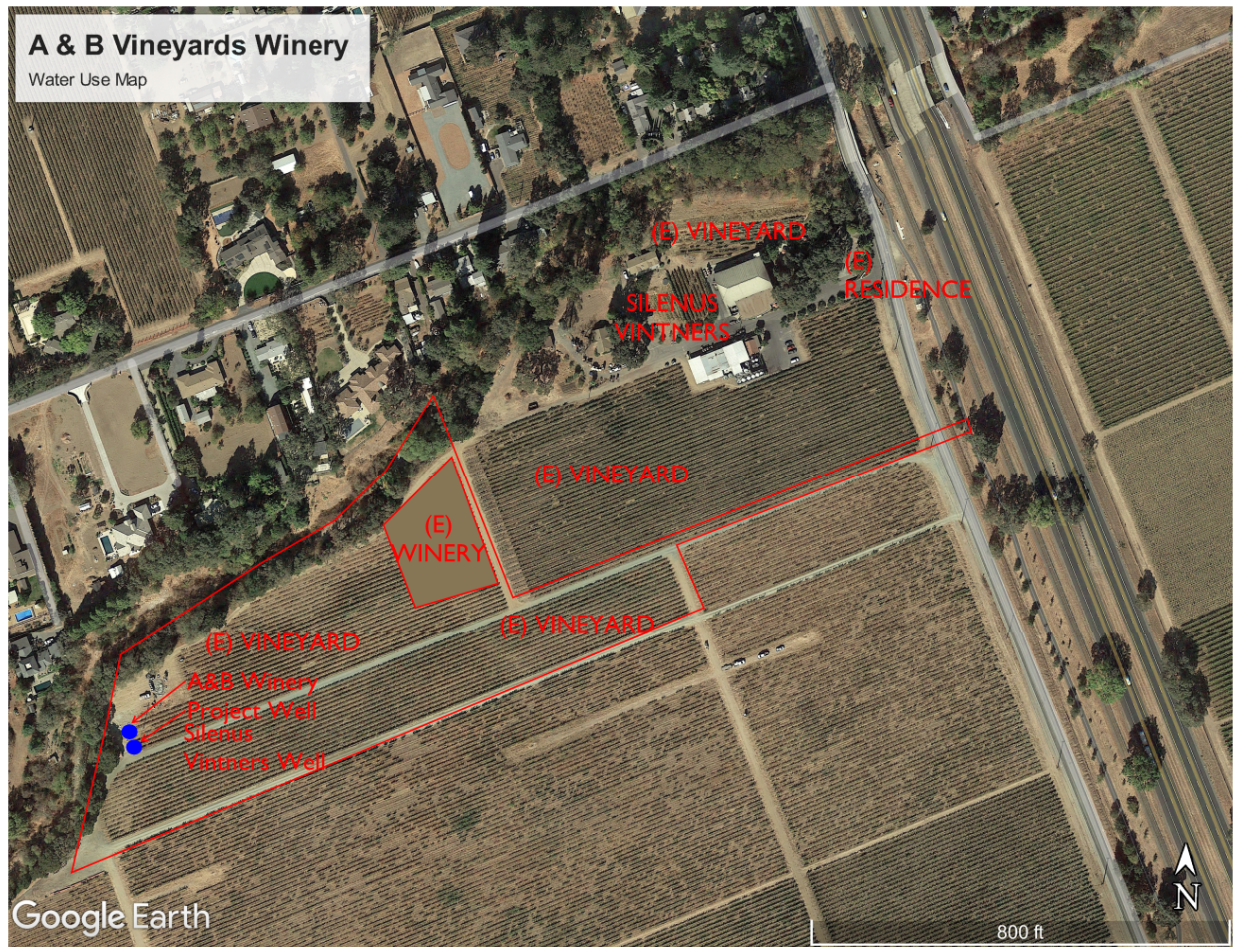


Figure 2: Water Use Map

Proposed water use will include the A & B Vineyards Winery’s increased production and visitation plan and all other existing demands for the subject and adjacent Silenus Vintners property.

The estimated groundwater demand, broken down by parcel, is summarized in the tables 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 – A & B Vineyards LLC Winery Property

	Existing (ac-ft/yr)	Proposed (ac-ft/yr)
Residential	0	0
Winery	0.77	1.18
Vineyard Irrigation	3.00	3.00
Landscape Irrigation	0.2	0.2
Total	3.97	4.38

Table 2: Estimated Groundwater Demand – Silenus Vintners Winery Property

	Existing (ac-ft/yr)	Proposed (ac-ft/yr)
Residential	0	0
Winery	2.00	2.00
Vineyard Irrigation	3.00	3.00
Landscape Irrigation	0.36	0.36
Total	5.36	5.36

Table 3: Estimated Groundwater Demand

A & B Vineyards LLC Winery & Silenus Vintners Winery Properties Combined

	Existing (ac-ft/yr)	Proposed (ac-ft/yr)
Residential	0	0
Winery	2.77	3.18
Vineyard Irrigation	6.00	6.00
Landscape Irrigation	0.56	0.56
Total	9.33	9.74

It should be noted that while both properties have a City of Napa water service for vineyard irrigation the service is not guaranteed (in fact no water was provided in 2022) and therefore it is assumed for this analysis that all vineyard irrigation will come from groundwater.

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.

Furthermore, Napa County is now also requiring that properties in the Napa Valley Floor area limit groundwater use to a Reduced Water Use Screening Criteria of 0.3 acre-feet per acre per year due to extended drought conditions except on properties where current use is more than 0.3 acre-feet per year in which case no-net increase in water use beyond existing baseline conditions is the applicable screening criteria.

The subject property is located in the Napa Valley Floor area and the geology is mapped as Qhy & Qha (alluvium) on the USGS geology maps as shown in Figure 3.

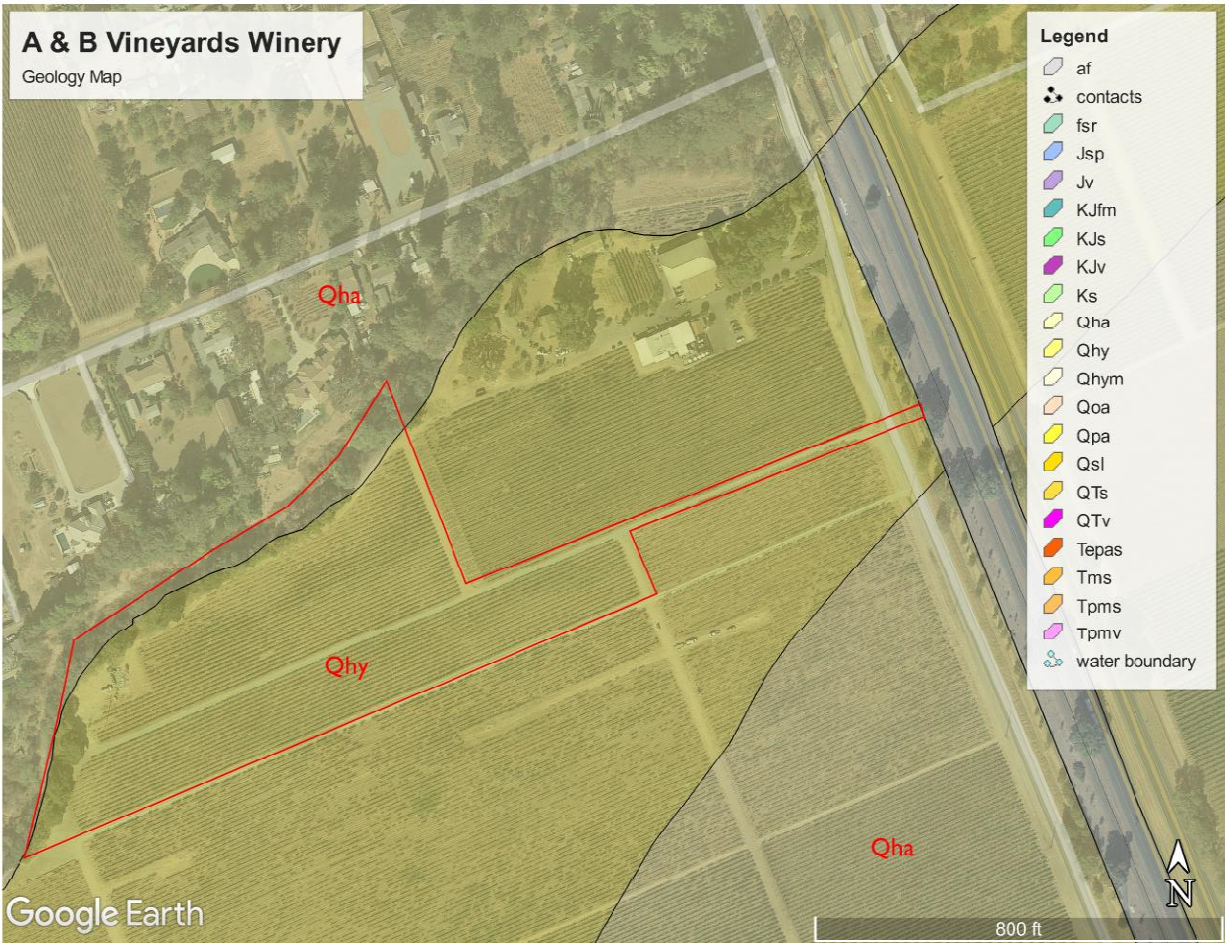


Figure 3: Geology Map Created with Google Earth Pro
(Source USGS Scientific Investigations Map 2918)

Since all groundwater extraction is from the Napa Valley Floor area we have evaluated the screening criteria associated with the Napa Valley Floor.

The parcel size is approximately 10.09 acres and therefore the water use screening criteria is calculated as follows:

WAA Guidance Document Water Use Screening Criteria = 10.09 acres x 1.0 acre-foot per acre per year

WAA Guidance Document Water Use Screening Criteria = 10.09 acre-feet per year

Reduced Water Use Screening Criteria = 10.09 acres x 0.3 acre-feet per acre per year

Reduced Water Use Screening Criteria = 3.03 acre-feet per year

Note that these threshold conservatively exclude any allowance associated with the Silenus Vintners property.

ANALYSIS

The total Estimated Water Use for existing conditions for both parcels combined (9.33 ac-ft/yr) and proposed conditions (9.74 ac-ft/yr) are both less than the WAA Water Use Screening Criteria (10.09 ac-ft/yr) and both are more than the Reduced Water Use Screening Criteria (3.03 ac-ft/yr).

Since the existing property water use is already above the Reduced Water Use Screening Criteria the project must comply with the no net increase criteria and the proposed water use must be the same or less than the current water use (9.33 ac-ft/yr).

RECOMMENDATIONS

In order to comply with the established 9.33 ac-ft/yr threshold the proposed project must reduce water use at the A & B Vineyards LLC Winery from the estimated 4.38 ac-ft/yr by 0.41 ac-ft/yr feet per year to match existing water use conditions. This can be done by implementing a process wastewater treatment and recycling system to offset vineyard and landscaping irrigation demand. Up to 0.97 ac-ft/yr can be reclaimed by this method and only 0.41 ac-ft/yr of offset is needed. The revised water use estimates utilizing a 0.41 ac-ft/yr offset are outlined below:

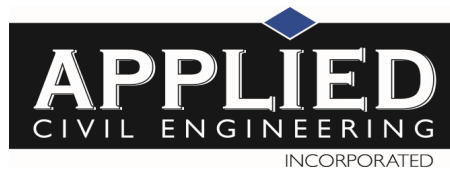
Table 2: Estimated Groundwater Demand With Process Wastewater Recycling

	Existing (ac-ft/yr)	Proposed (ac-ft/yr)
Residential	0	0
Winery	2.77	3.18
Vineyard Irrigation	6.00	6.00
Landscape Irrigation	0.56	0.56
Irrigation Offset Using Recycled Process Water	0	-0.41
Total	9.33	9.33

CONCLUSION

The project complies with the WAA Water Use Screening Criteria of 1.0 acre foot per acre per year of groundwater use but this criteria has been superseded by a new Reduced Water Use Screening Criteria. The groundwater extraction on the property is currently more than the Reduced Water Use Screening Criteria of 0.3 acre-feet per year and therefore the proposed project must not increase water use beyond current levels. By implementing the recommendations outlined above and re-using winery process wastewater for irrigation the proposed project complies with the Napa County's current requirements. A Tier 2 Analysis is not required according to the WAA – Guidance Document and current practice since no increase of groundwater use is associated with this project. A separate Tier 3 Analysis has been prepared by Richard Slade and Associates to address the well's proximity to Dry Creek, a mapped significant stream.

APPENDIX I: Water Use Estimate Supporting Calculations



**A&B Vineyards Winery
Groundwater Use Estimate**

	Estimated Water Use (Acre-Feet / Year)		
	Existing		Proposed
Residential Water Use			
Primary Residence ⁽¹⁾ - Not Applicable	0.000		0.000
Pool ^(1A) - Not Applicable	0.000		0.000
Second Dwelling Unit - Not Applicable	0.000		0.000
Guest Cottage - Not Applicable	0.000		0.000
Total Residential Domestic Water Use	0.000		0.000
Winery Domestic & Process Water Use			
Winery - Daily Visitors ⁽²⁾⁽³⁾	0.050		0.114
Winery - Events with Meals Prepared Onsite ⁽²⁾⁽⁴⁾	0.000		0.000
Winery - Events with Meals Prepared Offsite ⁽²⁾⁽⁵⁾	0.003		0.009
Winery - Employees ⁽²⁾⁽⁶⁾	0.067		0.084
Winery - Event Staff ⁽²⁾⁽⁶⁾	0.001		0.003
Winery - Process ⁽²⁾⁽⁷⁾	0.645		0.968
Total Winery Water Use	0.767		1.178
Irrigation Water Use			
Lawn ⁽⁸⁾	0.000		0.000
Other Landscape ⁽⁹⁾	0.200		0.200
Vineyard - Irrigation ⁽¹⁰⁾	3.000		3.000
Vineyard - Frost Protection - Not Applicable	0		0
Vineyard - Heat Protection - Not Applicable	0		0
Total Irrigation Water Use	3.200		3.200
Total Combined Water Use	3.97		4.38

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

⁽¹⁾ 0.5 to 0.75 ac-ft/yr for Primary Residence, includes some landscaping per Napa County WAA Guidance Document

^(1A) 0.1 ac-ft/yr for pool without cover per Napa County WAA Guidance Document

⁽²⁾ See attached Winery Production, Guest, Employee and Event Staff Statistics

⁽³⁾ 3 gallons of water per guest per Napa County WAA Guidance Document

⁽⁴⁾ 15 gallons of water per guest per Napa County WAA - Guidance Document

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

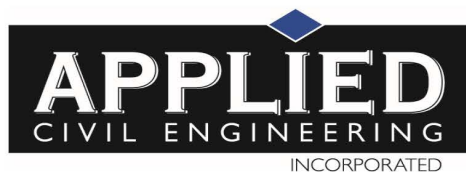
⁽⁶⁾ 15 gallons per shift per Napa County WAA - Guidance Document

⁽⁷⁾ 2.15 ac-ft/yr per 100,000 gallons wine per Napa County WAA - Guidance Document

⁽⁸⁾ 0.1 ac-ft/yr per 1,000 sf of lawn per Napa County WAA - Guidance Document - 0 sf lawn

⁽⁹⁾ Estimate provided by Landscape Architect based on planting design

⁽¹⁰⁾ 0.5 ac-ft/ac/yr per Napa County WAA - Guidance Document - 6+/- acres of vineyard



A&B Vineyards Winery

Existing Winery Production, Visitor, Employee & Event Staff Statistics

Winery Production⁽¹⁾	30,000	gallons per year
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Tours and Tastings by Appointment⁽¹⁾

Monday through Thursday	15 guests max per day	
Friday through Sunday	15 guests max per day	
Total Guests Per Year		5,460

Events - Meals Prepared Offsite⁽¹⁾

7 per year	30 guests max	210
0 per year	0 guests max	0
0 per year	0 guests max	0
Total Guests Per Year		210

Events - Meals Prepared Onsite⁽¹⁾

0 per year	0 guests max	0
0 per year	0 guests max	0
0 per year	0 guests max	0
Total Guests Per Year		0

Winery Employees⁽²⁾

4 employees	1 shift per day	
Total Employee Shifts Per Year		1,460

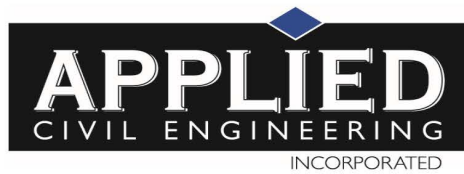
Event Staff⁽³⁾

7 per year, 30 guests	3 event staff	21
0 per year, 125 guests	0 event staff	0
0 per year, 0 guests	0 event staff	0
Total Event Staff Per Year		21

⁽¹⁾ Winery production, tours and tasting and event guest statistics per Winery Use Permit Modification Application

⁽²⁾ Employee counts per Winery Use Permit Application

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



A&B Vineyards Winery

Proposed Winery Production, Visitor, Employee & Event Staff Statistics

Winery Production⁽¹⁾	45,000	gallons per year
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Tours and Tastings by Appointment⁽¹⁾

Monday through Thursday	34 guests max per day	
Friday through Sunday	34 guests max per day	
Total Guests Per Year		12,376

Events - Meals Prepared Offsite⁽¹⁾

12 per year	30 guests max	360
2 per year	125 guests max	250
0 per year	0 guests max	0
0 per year	0 guest max	0
Total Guests Per Year		610

Events - Meals Prepared Onsite⁽¹⁾

0 per year	0 guests max	0
0 per year	0 guests max	0
0 per year	0 guests max	0
Total Guests Per Year		0

Winery Employees⁽²⁾

5 employees	1 shift per day	
Total Employee Shifts Per Year		1,825

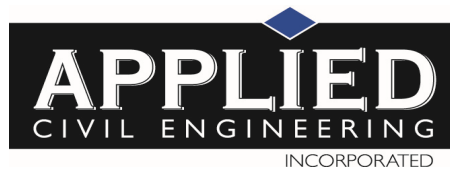
Event Staff⁽³⁾

12 per year, 30 guests	3 event staff	36
2 per year, 125 guests	13 event staff	26
0 per year, 0 guests	25 event staff	0
0 per year, 0 guests	50 event staff	0
Total Event Staff Per Year		62

⁽¹⁾ Winery production, tours and tasting and event guest statistics per Winery Use Permit Modification Application

⁽²⁾ Employee counts per Winery Use Permit Modification Application

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



**Silenus Vintners Winery
Groundwater Use Estimate**

	Estimated Water Use (Acre-Feet / Year)		
	Existing		Proposed
Residential Water Use			
Primary Residence ⁽¹⁾ - Not Applicable	0.000		0.000
Pool ^(1A) - Not Applicable	0.000		0.000
Second Dwelling Unit - Not Applicable	0.000		0.000
Guest Cottage - Not Applicable	0.000		0.000
Total Residential Domestic Water Use	0.000		0.000
Winery Domestic & Process Water Use			
Winery - Daily Visitors ⁽²⁾⁽³⁾	0.235		0.235
Winery - Events with Meals Prepared Onsite ⁽²⁾⁽⁴⁾	0.000		0.000
Winery - Events with Meals Prepared Offsite ⁽²⁾⁽⁵⁾	0.026		0.026
Winery - Employees ⁽²⁾⁽⁶⁾	0.185		0.185
Winery - Event Staff ⁽²⁾⁽⁶⁾	0.008		0.008
Winery - Process ⁽²⁾⁽⁷⁾	1.548		1.548
Total Winery Water Use	2.001		2.001
Irrigation Water Use			
Lawn ⁽⁸⁾	0.000		0.000
Other Landscape ⁽⁸⁾	0.360		0.360
Vineyard - Irrigation ⁽⁹⁾	3.000		3.000
Vineyard - Frost Protection - Not Applicable	0		0.000
Vineyard - Heat Protection - Not Applicable	0		0.000
Total Irrigation Water Use	3.360		3.360
Total Combined Water Use	5.36		5.36

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

(1) All residential water supplied by City of Napa according to owner.

(1A) 0.1 ac-ft/yr for pool without cover per Napa County WAA Guidance Document

(2) See attached Winery Production, Guest, Employee and Event Staff Statistics

(3) 3 gallons of water per guest per Napa County WAA Guidance Document

(4) 15 gallons of water per guest per Napa County WAA - Guidance Document

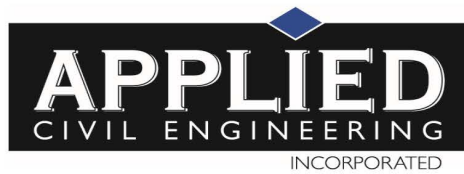
(5) 5 gallons of water per guest used because all food preparation, dishwashing, etc. to occur offsite

(6) 15 gallons per shift per Napa County WAA - Guidance Document

(7) 2.15 ac-ft/yr per 100,000 gallons wine per Napa County WAA - Guidance Document

(8) 0.5 ac-ft/yr per 100,000 gallons wine per Napa County WAA - Guidance Document

(9) 0.5 ac-ft/ac/yr per Napa County WAA - Guidance Document - 6+/- acres of vineyard



Silenus Vintners

Existing Winery Production, Visitor, Employee & Event Staff Statistics (No Change Proposed)

Winery Production⁽¹⁾ 72,000 gallons per year

Tours and Tastings by Appointment⁽¹⁾

Monday through Thursday	70 guests max per day	
Friday through Sunday	70 guests max per day	
Total Guests Per Year		25,480

Events - Meals Prepared Offsite⁽¹⁾

Total Guests Per Year	1,680
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Events - Meals Prepared Onsite⁽¹⁾

0 per year	0 guests max	0
0 per year	0 guests max	0
0 per year	0 guests max	0
Total Guests Per Year		0

Winery Employees⁽²⁾

11 employees	1 shift per day	
Total Employee Shifts Per Year		4,015

Event Staff⁽³⁾

Total Event Staff Per Year	168
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⁽¹⁾ Winery production, tours and tasting and event guest statistics per Napa County Winery Database

⁽²⁾ Employee counts per Napa County Winery Database

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