“F”

Water Availability Analysis

Conn Creek Winery Use Permit Major Modification P19-00317
Planning Commission Hearing April 21, 2021

WATER AVAILABILITY ANALYSIS

CONN CREEK WINERY

8711 Silverado Trail

St. Helena, California

APN 030-120-032

SUMMIT

CIVIL STRUCTURAL WATER|WASTEWATER ELECTRICAL PLANNING

Project No. 2018205
July 10, 2019
Revised: November 17, 2020

TABLE OF CONTENTS

LIST OF ENCLOSURES

Enclosure A: Overall Site Plan

PROJECT OVERVIEW

Conn Creek Winery, located at 8711 Silverado Trail in St. Helena, CA (APN 030-120-032), is applying for a use permit modification to Use Permit Modification 95532-MOD to increase employees and allow limited food pairing with existing wine tasting. There are no proposed changes to the approved wine production of 260,000 gallons per year of fruit crushed on site and 590,000 gallons of bulk wine processed, or additional changes to the approved marketing plan. The winery site is on a 5.99-acre parcel in an agricultural area on Silverado trail. The topography consists of gently sloping vineyards and the winery property is located wholly within in the 100-year floodplain and partially within the 100-year floodway. Please refer to Enclosure A for an Overall Site Plan showing the general layout of the project components, including the floodway boundary.

Summit Engineering has prepared the following Water Availability Analysis to demonstrate that the increased water consumption associated with the proposed increase in employees should not exceed the water allocation for the property.

There are two existing operational wells onsite. Only Well 01 is connected to the public water system and supplies the required potable water demand for the entire winery property. An older well on the property located within the production building is no longer actively used but is reserved for potential irrigation use.

EXISTING WATER DEMAND

Existing water uses on the property are based on the following:

- Winery process water demand for 850,000 gallons per year of total wine production
- Winery domestic water demand
- Winery landscaping irrigation water demand
- Vineyard irrigation water demand

WINERY PROCESS WATER DEMAND

Water demand for wine production is expected to correlate to the process wastewater (PW) generated at the facility. The projected process wastewater generation and associated winery process water demand are calculated in Table 1.

Table 1: Existing winery process water demand.

Parameter	Value	Units
Annual Wine Production, (Crushed Onsite)	260,000	gal/year
PW Generation Rate, (Crushed)[a]	4.0	gal PW / gal wine
Annual Wine Production, (Bulk Processed)	590,000	gal/year
PW Generation Rate, Gallons PW / Gallon Wine (Bulk) [a]	0.5	gal PW / gal wine
Annual Wine Production, (Combined)	850,000	gal wine / year
Annual PW Generation Rate, Gallons PW / Year	1,335,000	gal PW / year
Total Annual Winery Process Water Demand	1,335,000	gal water / year
	4.10	ac-ft water / year
Average PW Flow (based on 365 days/year)	3,658	gal PW / day
Notes:		
a. Generation rate based on observed water records at facility.		

WINERY LANDSCAPE IRRIGATION WATER DEMAND

Treated process wastewater effluent from the onsite pond is used for landscaping irrigation on the winery parcel. There is no change in landscaping associated with the proposed Use Permit modification. The total landscape area is estimated to be approximately 0.5 acres, so the available treated process wastewater effluent will exceed the landscape irrigation water demand. Therefore, 0 ac-ft/year water demand for landscape irrigation will be used as it is assumed no additional makeup water is required.

VINEYARD IRRIGATION DEMAND

Water from the both the existing well and treated PW effluent is currently used to irrigate the 2 acres of existing vineyard on the winery parcel. Napa County Water Availability Analysis (WAA) Phase 2 standard rates for vineyard irrigation are 0.2 to 0.5 ac-ft/acre/year. For conservative estimation purposes, the high end of the range is used to determine annual vineyard irrigation:

$$2\ acres \times \frac{0.5\ acre-feet}{acre \cdot year} = 1.0\ \frac{acre-feet}{year}$$

EXISTING DOMESTIC WATER DEMAND

The existing domestic water demand from the winery facility is determined based on a maximum of 15 full-time and one part-time employees, 500 total public visitors per week (assumed to be a maximum average of 70 wine tasting visitors per day, or 500 guests divided by 7 days per week) and visitors for marketing events. The facility is also allowed to have up to 15 daily marketing event guests, and 2 events per year with up to 60 guests in the outdoor garden. Sanitary sewage (SS) generation and winery domestic water demand are expected to be equivalent, and as such prescribed sewage flows are used to calculate estimated domestic water demand. Per capita water demand is based on the Guidelines for Estimating Non-Residential Water Usage in Napa County's Water Availability Analysis Guidance Document. The existing annual domestic water demand for the winery is outlined in Table 3.

Table 3: Existing winery domestic water demand.

Use Type	Number (persons/day, maximum)	Water Demand (gal/person)	Demand (gal/day)	Frequency (days/year)	Annual Water Use (gal/year)
FT Employee [a]	15	15	225	365	82,125
PT Employee [a]	1	15	15	90	1,350
Tasting Visitors [b]	70	3	210	365	76,650
Private Marketing Event [c]	15	5	75	365	27,375
Garden Event [c]	60	5	300	2	600
				Total Annual Winery Domestic Water Demand (Gallons)	**188,100**
				Total Annual Winery Domestic Water Demand (ac-ft/year)	**0.6**
				Average Daily Water Use (GPD)[d]	**520**

Notes:

a. Peak number of employees assumed every day of the year to be conservative.

b. Tasting visitation is conservative because the water demand from 500 weekly tasting guests and the water demand from separate marketing events is considered, while the approved marketing plan caps the total visitation at 500 weekly guests.

c. No onsite food prep occurs at the winery, with all meals and food service catered

d. Average daily water use calculated as total annual water use divided by 365 days and will differ from a "typical" day water use.

PROPOSED WINERY WATER DEMAND

There are no proposed changes to the operation of the facility that would increase winery process or irrigation water use. Therefore, all existing process water demand will remain unchanged, with the only additional demand associated with increases in employees.

The proposed domestic water demand from the winery facility is determined based on the proposed maximum of 20 full-time employees. The only change to visitation is to include cheese pairings with wine tasting. No commercial kitchen or onsite food preparation is proposed, so no additional water demand is included. Any water use associated with plating or serving prepared food is expected to be captured within the 3 gallons per person estimate for wine tasting. Sanitary sewage (SS) generation and winery domestic water demand are expected to be equivalent, and as such prescribed sewage flows are used to calculate estimated domestic water demand. The proposed annual domestic water demand for the winery is outlined in Table 4.

Table 4: Proposed winery domestic water demand.

Use Type	Number (persons/day)	Water Demand (gal/person)	Daily Demand (gal/day)	Frequency (days/year)	Annual Water Use (gal/year)
FT Employee [a]	20	15	300	365	109,500
PT Employee [a]	1	15	15	90	1,350
Tasting Visitors [b]	70	3	210	365	76,650
Private Marketing Event [c]	15	5	75	365	27,375
Garden Event [c]	60	5	300	2	600
				Total Annual Winery Domestic Water Demand (Gallons)	**215,500**
				Total Annual Winery Domestic Water Demand (ac-ft/year)	**0.7**
				Average Daily Water Use (GPD)[d]	**600**

Notes:

a. Peak number of employees and visitors assumed every day to be conservative.

b. Tasting visitation is conservative because the water demand from 500 weekly tasting guests and the water demand from separate marketing events is considered, while the approved marketing plan caps the total visitation at 500 weekly guests.

c. No onsite food prep occurs at the winery, with all meals and food service catered

d. Average daily water use calculated as total annual water use divided by 365 days and will differ from a "typical" day water use.

TOTAL PROPOSED WATER DEMAND

The total water demand for the project with the increase in employees, visitation and events is expected to be 5.76 ac-ft per year, compared to an existing water demand of 5.67 ac-ft per year. See Tables 5 & 6.

Table 5: Total Projected Annual Water Demand

Source of Demand	Gallons per day	Gallons per year	Acre-feet per year
Winery Production	3,658	1,335,000	4.10
Winery Domestic Use	600	215,500	0.66
Vineyard Irrigation [a,b]	866	316,075	1.00
Landscape Irrigation [b]	0	0	0.00
Total	**5,123**	**1,866,575**	**5.76**

Notes:

a. Based on Napa County WAA standard rates

b. Daily average based on 365 days per year

Table 6: Existing and Proposed Water Demand Comparison

Water Use	Existing (ac-ft)	Proposed (ac-ft)	Difference (ac-ft)
Wine Production	4.10	4.10	0.00
Domestic Use	0.58	0.66	0.08
Vineyard Irrigation	1.00	1.00	0.00
Landscape Irrigation	0.00	0.00	0.00
Total	5.67	5.76	0.08

TIER I ANALYSIS: WATER USE CRITERIA

The Tier I analysis criteria is required for all parcels located within the "Napa Valley Floor" in the WAA guidelines. Conn Creek Winery is located wholly within the Napa Valley floor, therefore the screening criteria is based on 1.0 acre-ft/acre/year of water use, and a Tier I analysis estimating annual recharge during average and dry years is not required. The total water allotment for the project is 5.99 acre-feet/year.

CONCLUSION

The proposed total annual water demand of Conn Creek Winery is projected to be 5.76 ac-ft/yr, which is below the total 5.99 acre-feet/year water allotment.

ENCLOSURE A

PW REUSE AREAS:
- VINEYARD
- LANDSCAPE

OWNER/APPLICANT:
CONN CREEK WINERY
8711 SILVERADO TRAIL
ST. HELENA, CA 94574
(707) 963-9100

APN 030-120-030

APN 030-120-031

APN 030-120-014

APN 030-120-015

APN 030-120-032

APN 030-120-033

SILVERADO TRAIL

SAGE CANYON ROAD

CONN CREEK ROAD

CONN CREEK

APPROXIMATE LIMIT OF FLOODWAY

(E) PW PRESSURE DISTRIBUTION LATERALS TO BE CONVERTED TO SS RESERVE, TYP OF 4 - 400 LF

(E) PW PRESSURE DISTRIBUTION LATERALS TO BE CONVERTED TO SS, TYP OF 2 - 200 LF

(E) SANITARY SEWAGE PRESSURE DISTRIBUTION LATERALS, TYP OF 2 – 210 LF

(E) ENTRANCE

(E) DISTRIBUTION LATERALS END, TYP

(E) PW PRESSURE DISTRIBUTION LATERALS TO BE ABANDONED IN PLACE ~ 1000 LF

APPROXIMATE LOCATION OF (E) PG&E SERVICE

(E) LANDSCAPE IRRIGATION REUSE AREA, TYP

(E) DRIVEWAY & PARKING

LIMIT OF (E) VINEYARD, TYP

NAPA COUNTY BLUELINE CREEK

(E) WINERY BUILDING

(E) WASTEWATER & IRRIGATION POND

(E) RECEIVING AREA

(E) BLDG

APRROXIMATE PROPERTY LINE, TYP

LIMIT OF (E) VINEYARD, TYP

(N) PUMP HOUSE

(N) FIRE PROTECTION STORAGE TANK

(N) WATER STORAGE TANK

(E) BLDG

(N) RETAINING WALL

(E) WATER STORAGE TANK

(E) FIRE PUMP HOUSE

(E) CONCRETE PAD

APPROXIMATE LOCATION OF 4" PG&E CONDUIT, INSTALLED PER PG&E STANDARDS. SEE PG&E PLAN FOR EXACT LOCATION

APPROXIMATE LIMIT OF FLOODWAY

0 20 40 80
GRAPHIC SCALE IN FEET

SUMMIT
Summit Engineering, Inc
463 Aviation Blvd., Suite 200 • Santa Rosa, CA 95403
707-527-0775 • www.summit-sr.com

CONN CREEK WINERY
8711 SILVERADO TRAIL
ST. HELENA, CA 94574
APN 030-120-032

USE PERMIT APPLICATION

WASTEWATER SITE PLAN

	2019-07-12 PERMIT SUBMITTAL
	2019-10-21 PLAN CHECK RESPONSE
	2020-01-10 PLAN CHECK RESPONSE

DATE:	2019-07-12
JOB NO:	2018205
SCALE:	AS SHOWN
DRAWN:	JA
CHECKED:	MS

SHEET **UP7**

SUMMIT ENGINEERING, INC.
463 Aviation Blvd., Suite 200
Santa Rosa, CA 95403
707 527-0775
Contact: Steve Worrell (steve@summit-sr.com)