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Water Availability Analysis



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Department of Public Works

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Donald G. Ridenhour, P.E.
Director

WATER AVAILABILITY ANALYSIS - PHASE ONE STUDY

Introduction: As an applicant for a permit with Napa County, It has been determined that Chapter 13.15 of the Napa County Code is applicable to approval of your permit. One step of the permit process is to adequately evaluate the amount of water your project will use and the potential impact your application might have on the static groundwater levels within your neighborhood. The public works department requires that a Phase 1 Water Availability Analysis (WAA) be included with your application. The purpose of this form is to assist you in the preparation of this analysis. You may present the analysis in an alternative form so long as it substantially includes the information required below. Please include any calculations you may have to support your estimates.

The reason for the WAA is for you, the applicant, to inform us, to the best of your ability, what changes in water use will occur on your property as a result of an approval of your permit application. By examining the attached guidelines and filling in the blanks, you will provide the information we require to evaluate potential impacts to static water levels of neighboring wells.

Step #1: ← Attached at back of application

Provide a map and site plan of your parcel(s). The map should be an 8-1/2"x11" reproduction of a USGS quad sheet (1:24,000 scale) with your parcel outlined on the map. Include on the map the nearest neighboring well. The site plan should be an 8-1/2"x11" site plan of your parcel(s) with the locations of all structures, gardens, vineyards, etc in which well water will be used. If more than one water source is available, indicate the interconnecting piping from the subject well to the areas of use. Attach these two sheets to your application. If multiple parcels are involved, clearly show the parcels from which the fair share calculation will be based and properly identify the assessor's parcel numbers for these parcels. Identify all existing or proposed wells

Step #2: Determine total parcel acreage and water allotment factor. If your project spans multiple parcels, please fill a separate form for each parcel.

Determine the allowable water allotment for your parcels:

Parcel Location Factors

The allowable allotment of water is based on the location of your parcel. There are 3 different location classifications. Valley floor areas include all locations that are within the Napa Valley, Pope Valley and Carneros Region, except for areas specified as groundwater deficient areas. Groundwater deficient areas are areas that have been determined by the public works department as having a history of problems with groundwater. All other areas are classified as Mountain Areas.

Please underline your location classification below (Public Works can assist you in determining your classification if necessary):

- Valley Floor 1.0 acre feet per acre per year
- Mountain Areas 0.5 acre feet per acre per year
- MST Groundwater Deficient Area 0.3 acre feet per acre per year

Assessor's Parcel Number(s)	Parcel Size (A)	Parcel Location Factor (B)	Allowable Water Allotment (A) X (B)
036-190-007	10.84	1	10.84

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Step #3:

Using the guidelines in Attachment A, tabulate the existing and projected future water usage on the parcel(s) in acre-feet per year (af/yr). Transfer the information from the guidelines to the table below.

EXISTING USE:		PROPOSED USE:	
Residential	0.5 af/yr	Residential	0 af/yr
Farm Labor Dwelling	af/yr	Farm Labor Dwelling	af/yr
Winery	1.18 af/yr	Winery	1.42 af/yr
Commercial	af/yr	Commercial	f/yr
Vineyard*	4.2 af/yr	Vineyard*	4.2 af/yr
Other Agriculture	af/yr	Other Agriculture	af/yr
Landscaping	0.3 af/yr	Landscaping	0.3 af/yr
Other Usage (List Separately):		Other Usage (List Separately):	
<u>Kitchen/tasting</u>	0 af/yr	<u>Kitchen/tasting</u>	0.03 af/yr
_____	af/yr	_____	af/yr
_____	af/yr	_____	af/yr

TOTAL: 6.18 af/yr TOTAL: 5.95 af/yr
 _____ gallons** TOTAL: _____ gallons**

Is the proposed use less than the existing usage? Yes No Equal

Step #4:

Provide any other information that may be significant to this analysis. For example, any calculations supporting your estimates, well test information including draw down over time, historical water data, visual observations of water levels, well drilling information, changes in neighboring land uses, the usage if other water sources such as city water or reservoirs, the timing of the development, etc. Use additional sheets if necessary.

The Modified use permit is being submitted to reflect current land use as well as proposed improvements for for wine tasting events. Robert Biale Vineyards 2001 UP - #00271 allowed up to 40,000 gal/yr for winery production. RBV has historically produced between 45,000 to 55,000 gal/yr of wine over the last 5 years. To date there has been no changes to water availability or consumption that warrant or show any significant variance to the groundwater.

Increased wine production has occurred through utilization of off site grapes. No change in parcel vineyards has occurred. Slight decrease in overall water usage reflects; (1) increase in wine production to 60,000 gal/yr; (2) new VIP tasting area; and (3) converted Storage Building tasting room with kitchen which is more than offset by the elimination of the residential water use. Kitchen catering events were estimated based on 2 events/month for a 5 month period with a 1000 gal/event or about 0.03 af/yr.

Conclusion: Congratulations! Just sign the form and you are done! Public works staff will now compare your projected future water usage with a threshold of use as determined for your parcel(s) size, location, topography, rainfall, soil types, historical water data for your area, and other hydrogeologic information. They will use the above information to evaluate if your proposed project will have a detrimental effect on groundwater levels and/or neighboring well levels. Should that evaluation result in a determination that your project may adversely impact neighboring water levels, a phase two water analysis may be required. You will be advised of such a decision.

Signature: Stephen A. Gonzalez Date: 11/14/2016 Phone: (530) 891-1710

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SCALE 0 750 1500 3000 ft

Plot Date: September 07, 2016 - 11:14 am
 File Name: S:\work\16-5491 Biale Winery Expansion\CADD\Sheets\Grading Plan.dwg

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WELL VICINITY MAP

Use Permit Modification
 Robert Biale Vineyards

A

1

DR. SAG
DT. 08/25/2016
SC. AS NOTED
NO. 16-5491

Balcher, Wyntress

From: Steve Gonsalves <gonsalves@nrmrdesign.com>
Sent: Monday, April 03, 2017 9:35 AM
To: Balcher, Wyntress
Cc: 'Jeffrey Redding'
Subject: Biale Water Use
Attachments: Biale Water Demand Calculations Summary.docx; Biale Water Demand Calculations Summary.pdf

Good morning Wyntress,

I am attaching an updated draft of the Biale current and projected water use with the domestic and winery production water broken out separately. The PDF has a second page with the details of how the water use is calculated. In doing this exercise, I noticed we did not account for a slight decrease in irrigation water use which is due to the slight decrease in vineyard acreage caused by the construction of the new driveway in our application. I have corrected the vineyard irrigation water estimate in the attached documents.

Stephen A. Gonsalves, LEED® AP

Partner

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The analysis indicates that the existing total water demand is 6.18 AF/YR, specifically:

EXISTING BIALE WINERY WATER DEMAND	
	Acre feet per year
Existing Residence	0.50
Winery Processing – 43,090 gallons in 2015	0.83
Employees (15 gallons/day (g/d))	0.17
Tasting Visitors (21/weekday; 45/weekend day) x 3 g/d	0.09
Domestic landscaping irrigation	0.30
Event Visitors (830 x 3 g/d)	0.01
7.11 acres Vineyard – Irrigation (no heat or frost)	4.20
Water used not entering Wastewater System	0.07
TOTAL	6.18

The analysis concluded that the projected water use for the project is 5.89 AF/YR, specifically:

PROPOSED BIALE WINERY WATER DEMAND	
	Acre feet per year
Winery Processing – 60,000 gallons	1.16
Employees (13 full-time; 9 part-time) x 15 g/d	0.17
Tasting Visitors (30/weekdays; 60/weekend days) x 3 g/d	0.09
Domestic landscaping irrigation	0.30
Event Visitors	0.01
6.86 acres Vineyard – Irrigation (no heat or frost)	4.05
Kitchen/tastings (2 events/mo with 1000 gal/event)	0.03
Water used not entering Wastewater System	0.07
TOTAL	5.89

Napa County has established a threshold of 10.84 AF/YR for this parcel; therefore the estimated water demand of 11.05 AF/YR is below the threshold established for the parcel. With the removal of the residential use, there is a reduction in water demand of .23 AF/YR. No further analysis is required.

Robert Biale Vineyards
Current and Estimated Future Water Use

Estimated Annual Domestic Waster Use

		Gallons per Day	Gallons per Year	AF/YR
Tasting Room Visitors	10,236	3.00	30,708	0.09
Employee Days	3,791	15.00	56,865	0.17
Event Visitors	830	3.00	2,490	0.01
Total Annual Domestic Water Use Estimate			90,063	0.28

Calculated Winery Production Water Use (2015 -2016 records)

		Gallons per Year	AF/YR
Total Wastewater Treated by Onsite System		371,384	1.14
Total Winery Water Use	(371,384 -100,023 = 271,361)	271,361	0.83
Total Wine Production - 2015		43,090	

Production Water Used per Gallon of Wine Produced 6.30 gallons / gallon

Estimated Water Used Not Entering the Wastewater System 22,810 0.07

Total Current Winery Water Use (0.31+0.83+0.04 = 1.18 af/yr) 1.18

Additional Current Water Uses

	AF/YR
Residence	0.5
Vineyard Irrigation (7.11 acres)	4.2
Landscape Irrigation	0.3
Total Current Water Use	6.18

Estimated Future Water Use

	Gallons per Year	AF/YR
Tasting Room Visitors (no increase proposed)	30,708	0.09
Employees (no increase anticipated)	56,865	0.17
Event Visitors	2,490	0.01
increase Winery Production Use - 60,000 gal/year	377,852	1.16
Water Consumed but not Entering Wastewater System	22,810	0.07
Total Estimated Future Winery Water Use	490,725	1.51

Vineyard Irrigation (6.86 acres)	4.05
Landscape Irrigation	0.3
New Kitchen/Tasting Facility	0.03
Total Estimated Future Water Use	5.89