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Water Availability Analysis



A Tradition of Stewardship
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Department of Public Works

1195 Third Street, Suite 201
Napa, CA 94559-3092
www.co.napa.ca.us/publicworks

Main: (707) 253-4351
Fax: (707) 253-4627

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:

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)
031-040-002	16.96	1.0	16.96

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	<u>0</u> af/yr	Residential	<u>0</u> af/yr
Farm Labor Dwelling	<u>0</u> af/yr	Farm Labor Dwelling	<u>0</u> af/yr
Winery	<u>0.44</u> af/yr	Winery	<u>0.71</u> af/yr
Commercial	<u>0</u> af/yr	Commercial	<u>0</u> f/yr
Vineyard*	<u>7.28</u> af/yr	Vineyard*	<u>7.16</u> af/yr
Other Agriculture	<u>0</u> af/yr	Other Agriculture	<u>0</u> af/yr
Landscaping	<u>0.07</u> af/yr	Landscaping	<u>0.12</u> af/yr
Other Usage (List Separately):		Other Usage (List Separately):	
_____	_____ af/yr	_____	_____ af/yr
_____	_____ af/yr	_____	_____ af/yr
_____	_____ af/yr	_____	_____ af/yr

TOTAL:	<u>7.79</u> af/yr	TOTAL:	<u>7.99</u> af/yr	TOTAL:
	_____ 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.

SEE ATTACHED CALCULATIONS

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: Robert A. Karn Date: JULY 12, 2017 Phone: 707-435-9999
 Robert A. Karn

WATER AVAILABILITY ANALYSIS - PHASE ONE STUDY

Attachment A: Estimated Water Use Guidelines

Typical Water Use Guidelines:

Primary Residence	0.5 to 0.75 acre-feet per year (includes some landscaping)
Secondary Residence	0.20 to 0.30 acre-feet per year
Farm Labor Dwelling	0.06 to 0.10 acre-feet per person per year

Non-Residential Guidelines:

Agricultural:

Vineyards

Irrigation only	0.2 to 0.5 acre-feet per acre per year
Heat Protection	0.25 acre feet per acre per year
Frost Protection	0.25 acre feet per acre per year
Farm Labor Dwelling	0.06 to 0.10 acre-feet per person per year
Irrigated Pasture	4.0 acre-feet per acre per year
Orchards	4.0 acre-feet per acre per year
Livestock (sheep or cows)	0.01 acre-feet per acre per year

Winery:

Process Water	2.15 acre-feet per 100,000 gal. of wine
Domestic and Landscaping	0.50 acre-feet per 100,000 gal. of wine

Industrial:

Food Processing	31.0 acre-feet per employee per year
Printing/Publishing	0.60 acre-feet per employee per year

Commercial:

Office Space	0.01 acre-feet per employee per year
Warehouse	0.05 acre-feet per employee per year

JULY 12, 2017

A15055

SADDLEBACK CELLARS

WATER AVAILABILITY ANALYSIS

EXISTING

WINERY

EXISTING WINERY PRODUCTION = 13,695 gal/yr

PROCESS WATER = $(2.15/100,000) \times 13,695 = .29$ AC-FT

EMPLOYEES = 5 FT Employees + 2 PT Employees = 6 X 15 gpd = 90 gpd

= $90/325,851 = 0.00028$ ac-ft/shift x 365 days = .10 ac-ft

CUSTOMERS = 15 X 3 gpd = 45 gpd x $365/325,851 = .05$ ac-ft

WINERY TOTAL = 0.44 ac-ft

VINEYARD

EXISTING VINEYARD = 14.0 ac

Irrigation = $.2 \times 14 = .28$ ac-ft

Heat Protection = $.25 \times 14 = 3.5$ ac-ft

Frost Protection = $.25 \times 14 = 3.5$ ac-ft

VINEYARD TOTAL = 7.28 ac-ft

LANDSCAPING

LANDSCAPING = $.50$ ac-ft X $13,695/100,000 = .07$ ac-ft

LANDSCAPING TOTAL = .07 ac-ft

EXISTING GRAND TOTAL = 7.79 AC-FT



JULY 12, 2017

A15055

SADDLEBACK CELLARS

WATER AVAILABILITY ANALYSIS

PROPOSED

WINERY

PROPOSED WINERY PRODUCTION = 24,000 gal/yr

PROCESS WATER = $(2.15/100,000) \times 24,000 = .52 \text{ AC-FT}$

EMPLOYEES = 5 FT Employees + 2 PT Employees = 6 X 15 gpd = 90 gpd

= $90/325,851 = 0.00028 \text{ ac-ft/shift} \times 365 \text{ days} = .10 \text{ ac-ft}$

CUSTOMERS = 15 X 3 gpd = 45 gpd x $365/325,851 = .05 \text{ ac-ft}$

EVENTS = 4/YR X 200 GUESTS X 15 gallons / 325,851 = .04 ac-ft

WINERY TOTAL = 0.71 ac-ft

VINEYARD

PROPOSED VINEYARD = 13.75 ac

Irrigation = $.2 \times 13.75 = .28 \text{ ac-ft}$

Heat Protection = $.25 \times 13.75 = 3.44 \text{ ac-ft}$

Frost Protection = $.25 \times 13.75 = 3.44 \text{ ac-ft}$

VINEYARD TOTAL = 7.16 ac-ft

LANDSCAPING

LANDSCAPING = $.50 \text{ ac-ft} \times 24,000/100,000 = .12 \text{ ac-ft}$

LANDSCAPING TOTAL = .12 ac-ft

PROPOSED GRAND TOTAL = 7.99 AC-FT

