



NAPA COUNTY

DEPARTMENT OF PUBLIC WORKS

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ROBERT J. PETERSON
Director of Public Works
County Surveyor-County Engineer
Road Commissioner

WATER AVAILABILITY ANALYSIS

PHASE 1 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 assessors 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:

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NAPA CO. CONSERVATION
DEVELOPMENT & PLANNING DEPT.

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 circle 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

Assessors Number(s)	Parcel	Parcel Size (A)	Parcel Factor (B)	Location	Allowable Water Allotment (A) X (B)
036-160-003		50 acres	1.0 AF/acre		50 AF

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:

Residential 0.90 af/yr
 Farm Labor Dwelling _____ af/yr
 Winery _____ af/yr
 Commercial _____ af/yr
 Vineyard* 36.80 af/yr
 Other Agriculture _____ af/yr
 Landscaping _____ af/yr
 Other Usage (List Separately):
 _____ af/yr
 _____ af/yr
 _____ af/yr

PROPOSED USE:

Residential 0.65 af/yr
 Farm Labor Dwelling _____ af/yr
 Winery 1.33 af/yr
 Commercial _____ af/yr
 Vineyard* 36.80 af/yr
 Other Agriculture _____ af/yr
 Landscaping _____ af/yr
 Other Usage (List Separately):
 _____ af/yr
 _____ af/yr
 _____ af/yr

TOTAL: 37.70 af/yr

TOTAL: 12,284, 582.70 gallons**

TOTAL: 38.78 af/yr

TOTAL: 12,636, 501.78 gallons**

*Water use for vineyards should be no lower than 0.2 AF—unless irrigation records are available that show otherwise.

**To determine your existing and proposed total water use in gallons, multiply the totals (in acre- feet) by 325,821 gal/AF.

Is the proposed use less than the existing usage () Yes (x) 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 of other water sources such as city water or reservoirs, the timing of the development, etc. Use additional sheets if necessary.

See Water Availability Analysis Supporting Calculations prepared by Applied Civil Engineering Incorporated (attached).

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: Michael R. Muelrath Date: 6/11/2008 Phone: 707-320-4992



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

WATER AVAILABILITY ANALYSIS PHASE I STUDY SUPPORTING CALCULATIONS
FOR MATERRA

Prepared by: APPLIED CIVIL ENGINEERING INCORPORATED

EXISTING USE:

Assumptions:

1. Per Attachment A, assume Single Family Residence uses 0.65 acre-feet per year including some landscaping.
2. Per Attachment A, assume secondary dwelling uses 0.25 acre-feet per year.
3. Vineyard area cleared in Fall of 2007 will be included in existing use.
4. Vineyard use includes 0.4 acre-feet for irrigation, 0.2 acre- feet for frost protection and 0.2 acre-feet for heat protection for a total of 0.8 acre-foot/acre based on conversations with Madrigal Vineyard Managers and Napa County guidelines.

Residential Use:

0.65	Single family residence
0.25	Secondary dwelling
0.90	Residential Total

Vineyard Use:

46.00	acres
0.80	acre-feet/acre
36.80	Vineyard Total

37.70	acre-feet/year TOTAL EXISTING USE
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WATER AVAILABILITY ANALYSIS PHASE I STUDY SUPPORTING CALCULATIONS
FOR MATERRA

Prepared by: APPLIED CIVIL ENGINEERING INCORPORATED

PROPOSED USE:

Assumptions:

1. Per Attachment A, assume Single Family Residence uses 0.65 acre-feet per year including some landscaping.
2. Production capacity of proposed winery is 50,000 gallons per year.
3. Per Attachment A, winery usage will include process, domestic and landscaping uses for a total of 2.65 acre-feet per 100,000 gallons of wine per year.
4. Vineyard use includes 0.4 acre-feet for irrigation, 0.2 acre- feet for frost protection and 0.2 acre-feet for heat protection for a total of 0.8 acre-feet/acre based on conversations with Madrigal Vineyard Managers and Napa County guidelines.

Residential Use:

0.65 Single family residence
0.65 Residential Total

Vineyard Use:

46.00 acres
0.80 acre-feet/acre
36.80 Vineyard Total

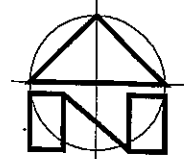
Winery Use:

50,000 gallons of wine/year
2.65 acre-feet/100,000 gallons of wine
1.33 Winery Total

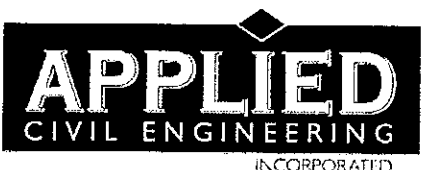
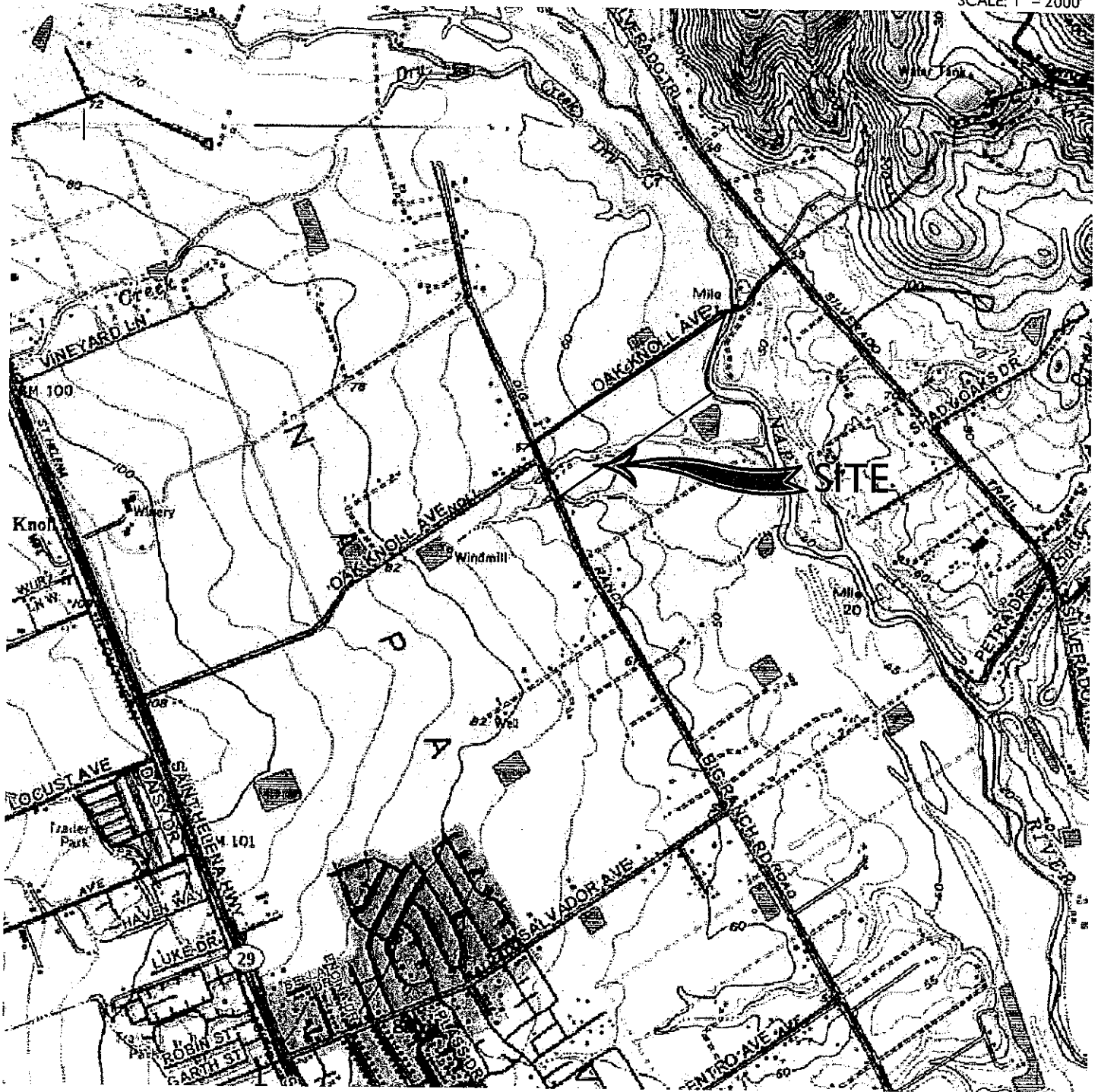
38.78 acre-feet/year TOTAL PROPOSED USE
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SITE TOPOGRAPHY MAP

REPRESENTS A PORTION OF THE USGS 7.5 MINUTE QUADRANGLE "NAPA"
REPRODUCED FROM NATIONAL GEOGRAPHIC TOPO!
OUTDOOR RECREATION MAPPING SOFTWARE



SCALE: 1" = 2000'



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JOB NO. 08-109

JUNE 2008