

ATTACHMENT A

Project Description

The Quail Ridge Vineyard property contains two onstream reservoirs that are used to frost protect and to irrigate approximately 33 acres of developed vineyard on the property. The Upper Reservoir (POD 2) drains into the Lower Reservoir (POD 1) via a cement spillway or via a 6 inch pipe at the bottom of the reservoir. As a result, POD 2 is also a Point of Re-Diversion (PORD 2) into POD 1.

POD 1 was constructed in 1974. It holds 6.1 ac-ft of water has an approximate surface area of 0.75 acres and is 13 feet deep.

POD2/PORD 2 was constructed in 1988. It holds 8.6 ac-ft of water has an approximate surface area of 0.64 acres and is 15 feet deep.

The vineyards were developed between 1974 and 1993 on slopes that are primarily <30% although there is approximately 2 acres of terraced vineyard that has a slope >30%.

Attachment E



To: Ken and Kathe Todd
From: Estelle P. Clifton, RPF #2858
Date: July 9, 2010

**Re: New Water Right Application by Quail Ridge Vineyards –
Calculation Demonstrating a Reasonable Likelihood of Water
Availability**

As per California Water Code Section 1260(k):

Every application for a permit to appropriate water shall set forth sufficient information to demonstrate a reasonable likelihood that unappropriated water is available for the proposed appropriation.

This memo and accompanying calculations provide the required information. The following describes the methodology used to demonstrate a reasonable likelihood that water is physically available for the appropriation.

Project Description

The Application is within the watershed of Salt Hallow Creek tributary to the Russian River in Mendocino County. The Application proposes to divert 40.7 ac-ft during a December 15 to September 15 diversion season.

Methodology

The mean annual runoff for the watershed, tributary to the proposed points of diversion, was computed utilizing the Rational Method ($Q=CIA$), where, C =run-off co-efficient, I =intensity /duration (37.5 in/yr), and A =drainage area (145.5 acres). A run-off co-efficient of 0.4 was used to represent the landscape condition in the watershed.

Mean annual precipitation was obtained from the Western Regional Climate Center web site. Data collected at the Ukiah, California (049122) gauge was utilized (37.23 in/yr) with a period of record from 1893 to 2009. Mean seasonal runoff was weighted using monthly mean precipitation for the period of diversion. The attached map shows the PODs and watershed area used to calculate the watersheds mean annual runoff.

Results

Mean Precipitation for requested Diversion Season (12/15 - 9/15)	26.81 in
Annual Mean Precipitation	37.23 in
Precipitation during requested diversion season as a percentage of total precipitation	72.01%
Mean Annual Runoff in watershed: $Q=CIA$; $c=0.4$, $I=37.5$ in, $A=145.5$ acres	180.56 ac- ft

Water Right Application by Quail Ridge Vineyards and Kenneth and Katherine Todd

Estimate of Water Availability

POD #1&2

Monthly Precipitation Source: <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca9122>

Mean Precipitation (in) from 1893-2009

January	7.85	
February	6.54	
March	4.74	
April	2.33	
May	1.04	
June	0.35	
July	0.04	
August	0.08	
September	0.46	0.23
October	1.90	
November	4.69	
December	7.22	3.61
Annual	37.23	

Mean Precipitation for requested Diversion Season (12/15 - 9/15)	26.81 in
Precipitation during requested diversion season as a percentage of total precipitation	72.01%
Mean Annual Runoff in watershed: $Q=CIA$; $c=0.4$, $I=37.5$ in, $A=145.5$ acres	180.56 ac-ft
Total Estimate Mean Seasonal Runoff for POD 1 & 2: (181.9 ac-ft * 72.01%)	130.02 ac-ft
No Senior Diversions are on record in the watershed	
Total Water Available at POD 1&2	130.02 ac-ft
Requested diversion amount	40.7 ac-ft
Total Seasonal Amount Remaining in Stream After Diversion:	89.32 ac-ft