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Steven E. Lederer
Director

April 3, 2015

From: Steve Lederer, Director, Napa County Department of Public Works
To: Planning, Building & Environmental Services

Subject: Girard Water Use Analysis, Girard Winery Use Permit (#P14-00053-UP)

Planning, Building, and Environmental Services (PBES) requested Public Work's review and analysis regarding water availability and water quality concerns raised during the processing of Girard Winery Use Permit (#P14-00053-UP).

Evidence offered in opposition to the project is primarily contained in:

1) Norma Tofanelli letter, dated January 21, 2015, which includes an attachment entitled "Dunaweal Area Well Records", dated 1987), and
2) Tom Myers Technical Memorandum (TM), dated January 20, 2015

Summarizing these concerns from the Myers TM (bold font added by this author):

1) "The proposed expansion of pumping for the Girard Winery project could possibly have two potentially significant impacts. First, the pumping could **unacceptably lower the groundwater levels** because there is not as much recharge on the area as the county assumes. This memorandum considers the river base flow and suggests that existing recharge estimates may be too high. **Pumping could also draw water from the Napa River.**
2) Second, the **pumping could affect groundwater flow directions and cause boron and arsenic plumes** to expand through a larger portion of the Calistoga area. There are very high concentrations of each contaminant northwest of the project site and along the base of the mountains south of the site. The project pumping, especially if it causes substantial drawdown due to too little recharge, could create a drawdown which pulls contaminants toward the project."

Analysis of Applicant Response

In response to these concerns, the applicant has offered a revised Water Availability Analysis (WAA) dated March 26, 2015. The key points covered in this revised WAA are as follows:

1) **Groundwater Levels:** While disagreeing with the analysis Myers conducted of earlier groundwater monitoring reports, the revised Girard WAA also now includes in this project record (by reference), the 2014 Annual Groundwater Monitoring Report, which clearly states

that, based on the network of monitored groundwater levels in the area, the groundwater levels in the area south of Calistoga are stable, even in the context of the current drought. (The 2014 Annual Report was not available to either party until it was presented to the Board of Supervisors at their March 3, 2015 meeting). The WAA continues by comparing proposed groundwater use on the parcels (8.23 acre-ft/year for both wineries combined) to a calculated recharge number (34.5 acre-ft/year), and found that the proposed use is only some 25% of the recharge rate. The Myers report also calculated a recharge rate, but then compared it to a use of 29 acre-ft/year, their presumed maximum use of the well if it was operated on a full basis. That assumption of 100% well run time is not contained in the project proposal. This substantial evidence provided by the Girard WAA indicates that the Myers report is not factually supported by evidence.

Drawing Water From The Napa River: While the Myers report presents this hypothesis, the Girard WAA (under response to concerns), points out, among other site specific facts, that the project wells are approximately 1500 feet from the Napa River (the normal distance limit beyond which this issue is not a concern), and that the groundwater level in this area is below the level of the riverbed, meaning that the river and the groundwater are likely not hydraulically connected.

2) **Drawing Arsenic and Boron Into the Area:** The revised WAA provides water quality data from the project well, showing that arsenic above Maximum Contaminant Levels (MCLs) has not been found in samples from the project well, and that water quality sampling from 3 nearby wells tested for boron found levels below the State Notification Level (Boron does not have an MCL). The WAA continues (under response to concerns) calculating reasonably expected drawdown and cones of depression expected from project pumping, and finds that the proposed pumping is "highly unlikely" to result in contaminant migration.

Public Works Review

While the Applicant's submittal provides substantial evidence, Public Works (PW) conducted its own review and evaluation of available evidence as well. This review included input and discussions with Vicki Kretsinger, who was the lead licensed professional in producing the various LSCE reports referenced herein.

Public Works comments to the Myers report are as follows:

1) Recharge and Groundwater Levels:
    a. The suggested impact relating to recharge is technically unsupported. Groundwater levels in the Calistoga area are stable based on hydrographs that have been updated in the 2014 Annual Report.
    b. Myers discusses the recharge analyses conducted by LSCE & MBK (2013) and goes on to describe why he believes recharge is overestimated. However, his analysis relies on very generalized application of base flow separation techniques which do not account for climatic variation or other factors that could affect base flow.
    c. There is no basis in the data presented to support his opinion that groundwater extraction is exceeding the rate of recharge to the aquifer system. On the contrary, groundwater levels for representative wells in the area suggest otherwise.

2) Myers states that "drawdown will eventually change the flow gradient for discharge to the Napa River and pumping will affect the river."
    a. There is no technical basis provided to justify this conclusion. Pumping of a well for some unspecified period of time at an uncertain rate from a well constructed in uncertain geologic conditions is not evidence that the gradient will change. He actually says "treating the aquifer as confined is preferable based on the low conductivity clay in the upper part of the log." This does not support his hypothesis relating to eventual change in the flow gradient for discharge to the River, since a confined aquifer would, by definition, be physically separated from surface waters by a confining geologic unit.
    b. From a practical standpoint, the existing conditions surrounding the property argue against the hypothesis of this project causing a flow gradient change. The two wells involved are both existing (constructed in 1971 and 1985). In addition, according to the December 17, 2014 staff report, there are 10 other wineries operating within one mile of the proposed project, along with numerous residences and vineyards, all with their own groundwater wells. Given this existing network of groundwater wells, data indicating a stable water table, and the small increase in pumping associated with the proposed project, it is simply not credible in the eyes of this engineer that this small percentage of additional pumping is likely to change the direction of the flow gradient.

3) Myers describes use of the standard Theis equation to assess potential drawdown.
    a. Drawdown calculations conducted by the Girard WAA, and admittedly quick computations by LSCE using variables cited by Myers, came to an entirely different conclusion relating to drawdown. Drawdown estimates that we arrived at are a couple of orders of magnitude lower than what Myers shows in plots. There does not appear to be factually supported evidence that there would be a significant effect on wells in the vicinity of the project.

To further investigate the condition of the area, PW requested that PBES query their permit database for new wells constructed within 1500 feet of the subject parcel. The database produced records for 7 new wells since 2004. While the reason for new wells is not formally tracked, information provided by Kim Withrow (who has been in the Department this whole time period and is the current supervisor of the section responsible for well permits) indicates that only one of the 7 wells was drilled to replace an existing well, and that that was done because the existing well was located too close to a septic system, not because of water quantity issues. While PW appreciates the 1987 well data supplied by Ms. Tofanelli, we consider the well data from the past 10 years to be more relevant.

PW also requested water quality data from Ms. Withrow on the existing project wells. Her response is as follows:

> "The well serving the Clos Pegase water system was tested for arsenic in 2009 and the result was 4.1 ug/L. The MCL for arsenic in drinking water is 10 ug/L. Clos Pegase isn't required to sample for arsenic on a regular basis because of their permit type. Sterling sampled one of their wells in 2014 and the result for arsenic was 2.1 ug/L. Another of the wells was sampled in 2010 and the level of arsenic was 5.6 ug/L. Sterling had some elevated sample results in one well (I believe in 2009) for arsenic (16 ug/L), zinc (7200 ug/L), mercury (8.3 ug/L) and aluminum (4600 ug/L). Sample results from 2014 indicated arsenic at 2.1 ug/L, aluminum at 230 ug/L and zinc at 4800 ug/L in the same well."

This information is consistent with that provided in the Girard WAA, indicating that naturally occurring arsenic (but not above the MCL level) is already chronic in the area, but there is no evidence to support the hypothesis that there are, or will be, increasing levels from Calistoga. (Please note that the 2009 Sterling sample was most likely a result of laboratory contamination as it is inconsistent with all other sampling data in the area, but it is nonetheless reported here for full disclosure purposes).

Ms. Tofanelli offered anecdotal reports of water problems on neighbor lands, as well as certain parties trucking in water. In the interest of full disclosure this information is repeated here, though we have no additional information to corroborate or investigate this.

Summary and Recommendations

In summary, the substantial evidence in the record indicates that:

1) The groundwater table in the area shows a long term stable trend;
2) Impacts on neighboring wells or the Napa River are not anticipated;
3) The project is unlikely to cause directional flow changes with would draw chemicals from Calistoga into the area.

Public Works does recommend that the Planning Commission include the following conditions of approval if the permit is approved:

1) The permittee shall be required for the life of the project to monitor and maintain records of water volumes pumped from the two wells. This data will be made available to the County upon request.
2) If combined water use from the wells exceeds 10 acre-ft. in a given calendar year, the permittee shall proactively notify the county, providing
    a. water volume used,
    b. the reason for increased use,
    c. the plan the winery has for reducing water use, and
    d. other information which may be affecting water use as reasonably requested by the County.
3) The permittee shall be required to include either or both wells into the County's Groundwater Monitoring program if the county requests that they do so.

Girard Winery Water Availability Analysis

Prepared for:

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March 26, 2015

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Introduction

The proposed Girard Winery is planned to be located at 1077 Dunaweal Lane, Calistoga, CA (APN 020-150-017). The proposal consists of construction of a new winery with a production capacity of 200,000 gallons of wine per year and associated site improvements, tasting room, and hospitality events.

In February 2014, Vintage Wine Estates filed a Use Permit Application and proposed Negative Declaration pursuant to the provisions of the California Environmental Quality Act (CEQA) for the proposed Girard Winery. As part of the application process a Phase I Water Availability Analysis was performed according to Napa County guidelines. The Phase I study included an estimate of the current and proposed water use and a determination of the "allowable water allotment".

In January 2015, comments were submitted to the county by Shute, Mihaly, and Weinberger LLP on behalf of the Tofanelli family. These comments included a hydrologic report prepared by Tom Meyers which claimed that the project could have significant impacts on water supply and water quality conditions. In response to these comments, Napa County directed the applicant to conduct a Phase II Water Availability Analysis. This document describes the analyses conducted to meet the Phase II requirements as well as additional analyses which have been conducted to address the various concerns raised about the project.

Project Description

The proposed Girard Winery to be located at 1077 Dunaweal Lane, Calistoga lies within the Napa Valley floor. The project proposes to utilize an existing water system (ID #28-01007) which is shared with an adjacent property (APN 020-150-012) where the existing Clos Pegase winery is located. The water system is supplied by two wells: the Clos Pegase Well (Well #1) which was drilled in July of 1985 and the Girard Well (Well #2) which was drilled in June of 1971 (Figure 1; Table 1). The water system consists of the two wells, pressure tanks, a water treatment system (sediment filters, water softeners, ultraviolet disinfection), and a 58,000 gallon storage tank. An existing irrigation storage pond supplied by vineyard field sub-drains is used to supply water for vineyard and landscape irrigation and frost protection.

Table 1: Water supply wells.

Well Details	Well #1 Clos Pegase	Well #2 Girard
Date Drilled	Jul-85	Jun-91
Depth (ft)	185	220
Screened Interval (ft)	80 - 185	80 - 220

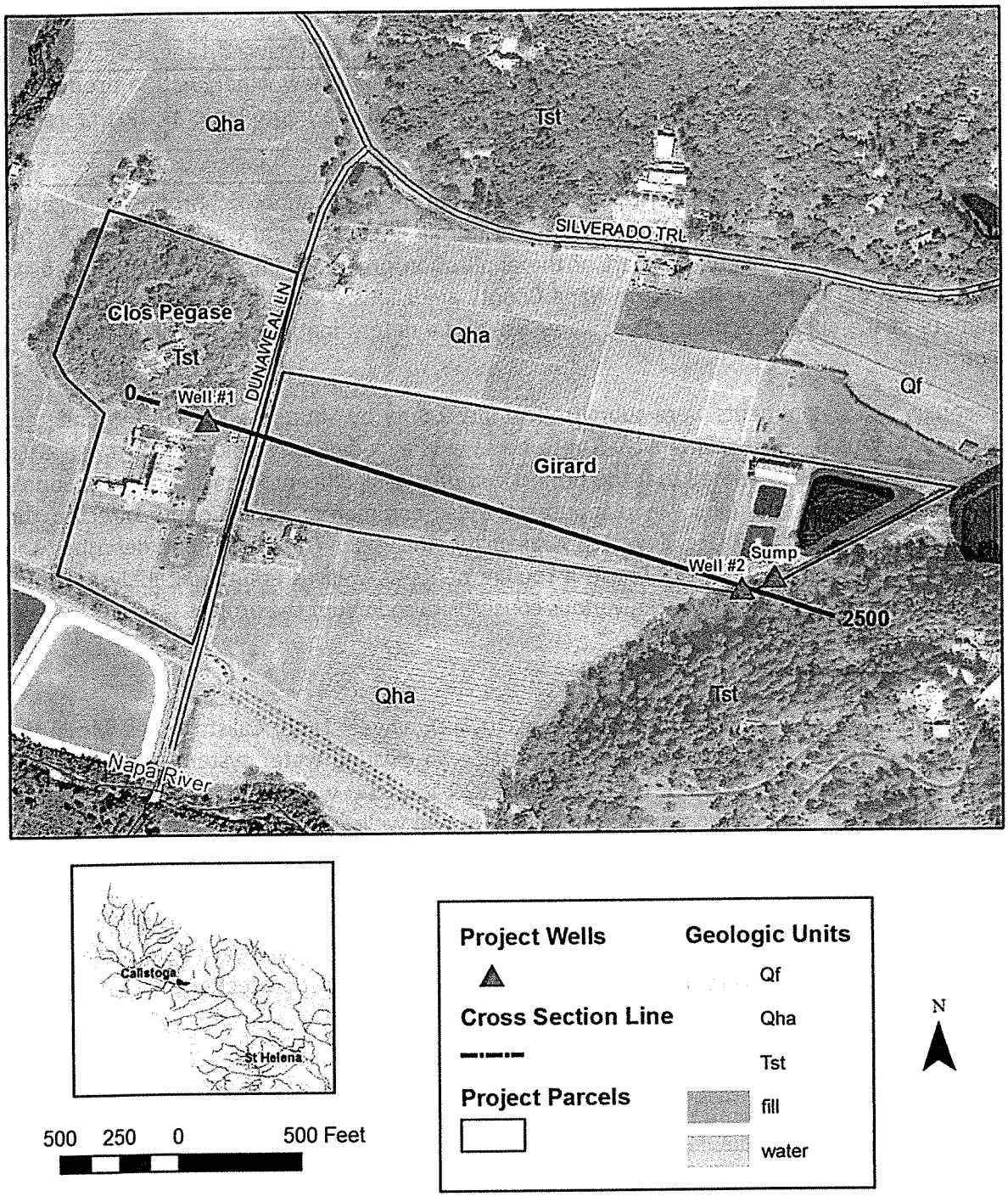


Figure 1: Project parcel map indicating well locations and primary geologic units.

Hydrogeology

The Clos Pegase and Girard parcels are located within the Napa Valley floor about 1500 ft east of the Napa River and about one mile south of Calistoga. The surficial geology is primarily Holocene Alluvium (Qha) with the tuffaceous member of the Sonoma Volcanics (map unit Tst) forming the hills on the northern portion of the Clos Pegase parcel and to the east and southeast of the Girard parcels (Figure 1). A small portion of the northeast corner of the Girard parcel is mapped as Quaternary Alluvial Fan Deposits (Qf). The Clos Pegase well (Well #1) is drilled completely within the tuff and the Girard well (Well #2) penetrates some 90-ft through the alluvium and into the underlying tuff. The Girard well is screened almost entirely within the tuff and the portion of the screened interval within the alluvium is indicated as clay on the driller's log; hence the well is effectively isolated from the alluvium. Given that both wells penetrate the tuff and that the tuff is also exposed in the hills both west and east of the valley at this location, it is reasonable to assume that the tuff underlies all of both parcels. A conceptual geologic cross section through the two wells is presented in Figure 2.

Alluvium

The alluvium within the north Napa Valley consists of lenticular, unconsolidated, poorly sorted deposits of gravel, sand, silt, and clay. Individual lenses are generally not more than 10-ft thick but may be laterally extensive (Faye, 1973). The alluvium is considered one of the principle water-bearing units in the area and well yields can vary substantially from 50 to 3,000 gal/min depending on the number and thickness of gravel and sand lenses penetrated by a particular well. Groundwater is generally unconfined though confined conditions are possible locally. Faye (1973) found that both the thickness and hydraulic conduictivity (K) of the alluvium increases from north to south and from the edges of the valley towards the Napa River. In the vicinity of the project parcels, the alluvium is estimated to be less than 100-ft thick and the K is estimated to be between 30 and 50 ft/day (Faye, 1973). DHI (2006) also estimated the thickness of the alluvium as part of the development of a distributed surface water/groundwater model based on the data from Faye (1973) and interpretation of additional driller's logs. In that study, the alluvial thickness was estimated to be on the order of 70-ft in the vicinity of the project parcels.

Sonoma Volcanics

The Sonoma Volcanics consist of a thick and highly variable series of volcanic rocks including basalt, andesite, and rhyolite lava flows, tuff, tuff breccia, agglomerate, scoria, and their sedimentary derivatives (Kunkel and Upson, 1960). The tuffaceous, scoriaceous, and sedimentary units are the principle water-bearing units whereas the lava flows generally yield little to no water (Kunkel and Upson, 1960; Faye, 1973).

Many wells in the Calistoga area are relatively shallow and tap water within the alluvium. The deeper wells draw water from the underlying Sonoma Volcanics. Water in the Sonoma Volcanics is commonly confined though few wells completed in the unit are artesian. The

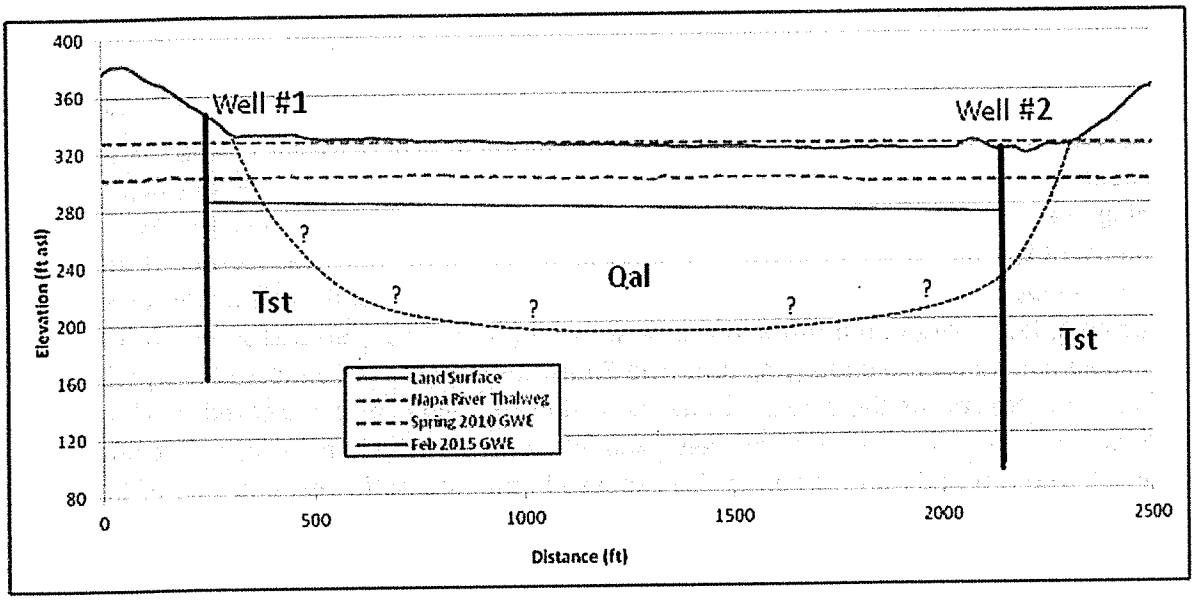


Figure 2: Geologic cross section through the project wells.

artesian wells are generally deep and screened entirely within the Sonoma Volcanics supporting the notion of confined conditions (Kunkel and Upson, 1960). Faye (1973) estimated that the hydraulic conductivity (K) of the permeable units within the Sonoma Volcanics is on the order of 0.01 to 0.1 ft/day. Well yields are generally less than for the alluvium and average 32 gpm based on sample of 140 wells (Faye, 1973).

Groundwater Elevations

Luhdorff and Scalmanini (2011) compiled available long-term groundwater elevation hydrographs for various subareas within Napa County. Groundwater levels within the Napa Valley Floor - Calistoga subarea indicate that groundwater levels have generally been stable since at least 1950 and that no significant long-term trends in groundwater elevation occur. Short-term declines in elevation associated with periods of below average precipitation (such as the 1976-1977 drought) do occur, however elevations recover to near pre-drought conditions within a few years. Depths to groundwater are generally shallow (less than 10-ft in the Spring) and seasonal fluctuations are relatively small and generally less than 10-ft (Luhdorff and Scalmanini, 2011). Data compiled for a recent annual report on the county's groundwater monitoring program confirmed the long-term stability of groundwater elevations in the Calistoga area (Luhdorff and Scalmanini, 2015). Data for the four wells with long-term monitoring data that are closest to the project parcels are reproduced from Luhdorff and Scalmanini (2011) in Figure 3.

Luhdorff and Scalmanini (2013) presented groundwater elevation contours from Spring of 2008 and Spring of 2010 which indicate that the general direction of groundwater flow is roughly parallel to the valley axis in the northern Napa Valley. The underlying well data is insufficient to provide details at finer spatial scales other than to note that groundwater elevations were on

the order of 315 to 325 ft asl in the vicinity of the project parcels. These elevations are within a few feet of land surface, suggesting that groundwater likely occurs at very shallow depths beneath the low-lying portions of the project parcels.

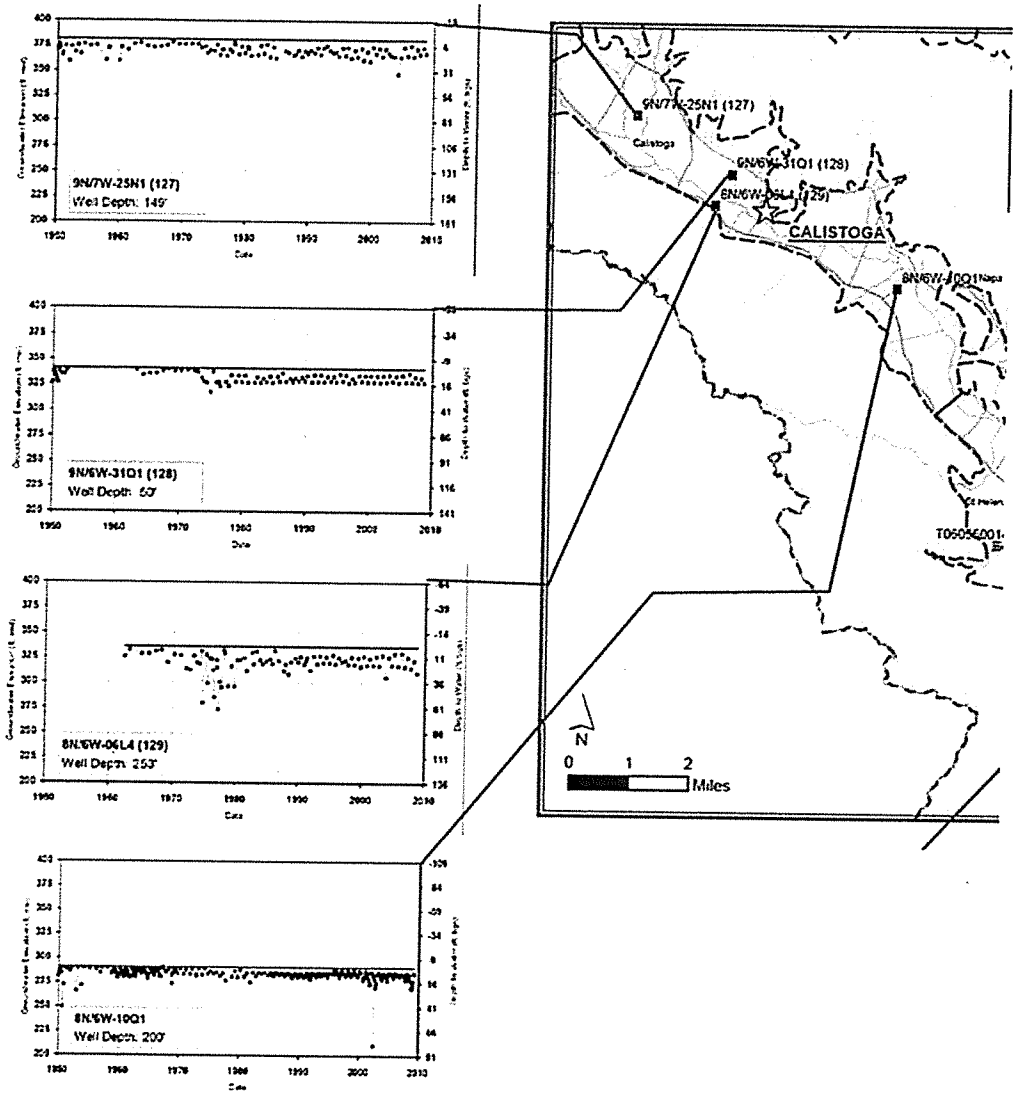


Figure 3: Groundwater elevation data for wells in the Calistoga area reproduced from Luhdorff and Scalmanini (2011); the yellow star indicates the location of the project parcels.

Interpretation of the well hydrographs and elevation contour maps is complicated by the fact that many of the wells likely penetrate both the alluvium and the underlying Sonoma Volcanics. Given the consistently shallow depths to groundwater, it is reasonable to assume that most of the wells are perforated within the alluvium and many are likely also perforated within the underlying tuffaceous rocks.

In prior groundwater investigations of regional hydrogeology, there was no attempt to isolate wells completed entirely within the Sonoma Volcanics in the Calistoga area in order to characterize the confined volcanic aquifer beneath the alluvium. Thus little is known about the potentiometric surface of the Sonoma Volcanics in this area and its relationship to the water table in the overlying alluvium. The two project wells are, however, completed almost entirely within the volcanic rocks. Water level measurements at the project wells in February 2015 indicate static depths to groundwater are on the order of 35 to 50-ft, some 30 to 40-ft below regional groundwater elevations (Figure 2). This observation supports the notion that the project wells are abstracting groundwater from the volcanic aquifer underlying the alluvium and that this groundwater occurs under confined conditions.

Groundwater Quality

Water quality analyses were compiled for various wells in the Calistoga area as part of a 2011 evaluation of groundwater conditions (Luhdorff and Scalmanini, 2011). Boron concentrations ranged from non-detected to 14,000 ug/L, substantially higher than the 1,000 ug/L drinking water standard. Arsenic concentrations ranged from non-detected to 85 ug/L, also substantially higher than the 10 ug/L maximum contaminant level (MCL). Most of the poor quality groundwater was found to occur north of Calistoga.

Water quality analyses were performed on a sample from the Clos Pegase Well (Well #1) in March 2009 and analyzed by Brelje and Race Laboratories. The water was found to meet all primary standard MCLs and secondary levels were exceeded for iron and manganese (Figure 4). Arsenic concentrations measured at 4.1 ug/L were below the MCL. The sample was not analyzed for Boron, however the three closest wells to the project site that were compiled by Luhdorff and Scalmanini (2011) indicate concentrations ranging from 120 to 200 ug/L (well below the MCL).

Water Demand

Existing water uses that rely on the groundwater-supplied water system include Winery Process Use, Winery Domestic Use, and Residential Use associated with the Clos Pegase parcel. Proposed water uses include Winery Process Use and Winery Domestic Use associated with the Girard parcel. The existing vineyards on both the Clos Pegase and Girard parcels rely entirely on water from the irrigation pond located on the Girard parcel. The existing landscape irrigation on the Clos Pegase parcel as well as the proposed landscape irrigation on the Girard parcel will also rely entirely on the irrigation pond. This pond is filled from direct precipitation, shallow groundwater inflows, and shallow subsurface drainage from an existing vineyard sub-drain system. The pond has proved sufficient for meeting all irrigation, landscaping, and frost protection demands consistently over the past 15 years of operations (Jason Duval, Clos Pegase Winery, personal communication).

Existing Conditions

As part of a 2011 Due Diligence Report for the Clos Pegase Winery, the average annual Process Wastewater (PW) from 2009 through 2011 was found to be 512,000 gallons or 1.57 ac-ft/yr (Summit Engineering, 2011). Actual wine production over this period was 107,100 gallons; significantly less than the approved 200,000 gal/yr capacity. Assuming production were to be increased to the approved capacity, the existing Winery Process Use is on the order of 2.93 ac-ft/yr. This is significantly less than the Napa County Phase I Water Availability guideline of 2.15

Chemical Group: 64432 – Primary – Inorganics			
Chemical	Last Results	Units	MCL
Aluminum	<50	µg/L	1000
Antimony	<6.0	µg/L	6
Arsenic	4.1	µg/L	50
Barium	<100	µg/L	1000
Beryllium	<1.0	µg/L	4
Cadmium	<1.0	µg/L	5
Chromium	<1.0	µg/L	50
Fluoride	0.33	mg/L	2
Mercury	<1.0	µg/L	2
Nickel	<10	µg/L	100
Selenium	<5.0	µg/L	50
Thallium	<1.0	µg/L	2

Chemical Group: 64449-A&B – Secondary Standards			
Chemical	Last Results	Units	MCL
Bicarbonate	49	mg/L	
Calcium	16	mg/L	
Carbonate	<1.0	mg/L	
Hydroxide	<1.0	mg/L	
Iron	18000	µg/L	300
Magnesium	4	mg/L	
Manganese	1100	µg/L	50
Sodium	18	mg/L	
Total Alkalinity (as $CaCO_3$)	40	mg/L	
Total Hardness	58	mg/L	
pH	5.9		

Figure 4: Water quality analyses from a sample collected from the Clos Pegase Well (Well #1) in March of 2009.

ac-ft/yr per 100,000 gallons of wine indicating that the existing Clos Pegase operations are effectively conserving water relative to industry standards.

The per capita use assumptions, number of employees, and an estimate of the number of tasting visitors, and event visitors for the Clos Pegase Winery are presented in Tables 2 and 3. The Winery Domestic Use can be estimated as the sum of Employee Use (0.26 ac-ft/yr), Tasting Visitor Use (0.35 ac-ft/yr), and Event Use (0.06 ac-ft/yr) yielding an estimate of the total Winery Domestic Use of 0.67 ac-ft/yr.

Table 2: Calculation of Employee Use for the Clos Pegase Winery (Always Engineering, 2014).

Work Category	# of Employees	# Work Days per Year	Use per Employee (gal/day)	Annual Water Use (ac-ft/yr)
Full-time Harvest Period	30	91	15	0.13
Part-time Harvest Period	0	0	7.5	0.00
Full-time Non-harvest Period	10	273	15	0.13
Part-time Non-harvest Period	0	0	7.5	0.00
TOTAL				**0.26**

Table 3: Calculation of Event and Tasting Room Visitor Use for the Clos Pegase Winery (Always Engineering, 2014).

Visitor Category	# of Vistors	# Days per Year	Use per Visitor (gal/day)	Annual Water Use (ac-ft/yr)
Medium Event	150	24	5	0.06
Tasting Room	105	365	3	0.35
TOTAL				**0.41**

The Clos Pegase parcel has one residence. The Napa County Phase I Water Availability guidelines suggest a base Residential Use value of 0.50 to 0.75 ac-ft/yr plus an additional 0.10 ac-ft/yr for an uncovered pool. The residence has approximately 0.15 acres of landscaping which is primarily grass. Based on the CIMIS ETo data for Oakville, the irrigation demand for this landscaping is approximately 0.36 ac-ft/yr. The total Residential Use can be approximated by summing the base use (0.75 ac-ft/yr), the pool use (0.10 ac-ft/yr), and the landscape use (0.36 ac-ft/yr) yielding an estimate of the total Residential Use of approximately 1.21 ac-ft/yr.

The total Existing Demand is the sum of the Winery Process Use (2.93 ac-ft/yr), Winery Domestic Use (0.67 ac-ft/yr), and Residential Use (1.21 ac-ft/yr) and is estimated to be 4.81 ac-ft/yr (Table 4).

Proposed Conditions

As discussed above for Existing Conditions, the average annual Process Use for the Clos Pegase Winery is on the order of 4.78 gallons per gallon of wine produced. Assuming a similar level of use for the Girard Winery, the proposed 200,000 gallons of wine production per year will require approximately 2.93 ac-ft/yr.

Table 4: Water Use by Use Category for the Clos Pegase Winery.

Use Category	Annual Water Use (ac-ft/yr)
Winery Process Use	2.93
Winery Domestic Use	0.67
Residential Use	1.21
TOTAL	**4.81**

Table 5: Calculation of Employee Use for the Girard Winery (Always Engineering, 2014).

Work Category	# of Employees	# Work Days per Year	Use per Employee (gal/day)	Annual Water Use (ac-ft/yr)
Full-time Harvest Period	1	91	15	0.05
Part-time Harvest Period	7	91	7.5	0.01
Full-time Non-harvest Period	8	273	15	0.10
Part-time Non-harvest Period	3	273	7.5	0.02
TOTAL				**0.18**

Table 6: Calculation of Event and Tasting Room Visitor Use for the Girard Winery (Always Engineering, 2014).

Visitor Category	# of Vistors	# Days per Year	Use per Visitor (gal/day)	Annual Water Use (ac-ft/yr)
Large Event	500	1	5	0.01
Medium Event	200	4	5	0.01
Small Event	75	4	5	0.01
Weekday Tasting Room	75	208	3	0.14
Weekend Tasting Room	100	157	3	0.14
TOTAL				**0.31**

The per capita use assumptions, number of employees, and an estimate of the number of tasting visitors, and event visitors for the Girard Winery are presented in Tables 5 and 6. The Winery Domestic Use can be estimated as the sum of Employee Use (0.18 ac-ft/yr), Tasting Visitor Use (0.28 ac-ft/yr), and Event Use (0.03 ac-ft/yr) yielding an estimate of the total Winery Domestic Use of 0.49 ac-ft/yr.

The total Proposed Demand is the sum of the Winery Process Use (2.93 ac-ft/yr) and Winery Domestic Use (0.49 ac-ft/yr), and is estimated to be 3.42 ac-ft/yr (Table 7).

Table 7: Water Use by Use Category for the Girard Winery.

Use Category	Annual Water Use (ac-ft/yr)
Winery Process Use	2.93
Winery Domestic Use	0.49
TOTAL	**3.42**

Total Proposed Demand

The total Proposed Demand is the sum of the Existing Demand for the Clos Pegase Winery (4.81 ac-ft/yr) and the Proposed Demand for the Girard Winery (3.42 ac-ft/yr), and is estimated to be 8.23 ac-ft/yr (Table 8). If water use is allocated uniformly throughout the year, this would be equivalent to a mean daily demand of 7,347 gal/day. For the purposes of determining the sufficiency of the project wells to meet the demand it is useful to consider the peak daily demand. Peak water demand occurs during the harvest period. Assuming that 50% of the total annual Process Use occurs during the three month harvest period and that the other water use components during this period are equivalent to mean daily demands indicates that peak daily demand is on the order of 12,608 gal/day.

It is important to note that the water use estimates presented here have been refined significantly since the Phase I Water Availability Analysis was conducted. The previous estimates were based largely on default values in order to be conservative (tend towards over-estimating) whereas the estimates presented here, while still conservative, have been developed based on the best available information about the subject parcels and the past and expected future winery operations.

Table 8: Summary of Existing and Proposed Water Demand.

Use Category	Annual Water Use (ac-ft/yr)
Existing Use	4.81
Proposed Use	3.42
TOTAL	**8.23**

Groundwater Recharge

Previous Estimates

The relatively high permeabilities of the alluvium within the Napa Valley Floor permit significant groundwater recharge to occur through both precipitation and seepage from streams (Faye, 1973; Luhdorff and Scalmanini 2013). Much of the stream seepage occurs along the valley margins where tributary streams leave older impermeable rocks and cross over permeable alluvium or tuff.

Luhdorff and Scalmanini (2013) noted that water recharged through the exposures of tuff in the mountains west and east of the valley eventually flows towards the tuff that is concealed by alluvium along the Napa Valley floor. This is consistent with Kunkel and Upson (1960) who found that most of the water in the Sonoma Volcanics in the Calistoga area is derived from infiltration of precipitation and seepage from streams within the outcrop areas bordering the valley.

Recharge processes within the tuffaceous units of the Sonoma Volcanics have been studied fairly extensively in the MST basin northeast of the City of Napa in contrast to the Calistoga area where they have not been studied in detail. Johnson (1977) and Farrar and Metzger (2003) performed a series of seepage experiments on the major creeks in the MST basin. Johnson (1977) concluded that infiltration from precipitation and runoff was greatest where the tuffs were exposed or underlying shallow Quaternary deposits and that the dominant source of recharge was from streambed infiltration where streams come into contact with the tuff directly.

Faye (1973) performed a water balance estimate for the north Napa Valley Groundwater Basin for an average water year (1963) and a dry water year (1931). Recharge was estimated to vary from ~2,606 ac-ft/yr during dry water years to ~17,013 ac-ft/yr during average water years. These volumes are equivalent to ~0.8 to 5.3 inches/yr, and the average year recharge is equivalent to approximately 12% of the precipitation. During average water years, approximately 53% of the recharge was derived from infiltration of precipitation, 45% was from tributary seepage, and 2% was from subsurface inflows.

Another estimate of the water balance for the north Napa Valley Groundwater Basin was performed for the period from 1962 through 1989 (Montgomery Consulting Engineers, 1991). That study estimated that that mean annual recharge was on the order of 26,800 ac-ft/yr which is equivalent to 9.2 inches/yr or ~26% of the mean annual precipitation over the same period.

DHI (2006) developed a distributed surface water/groundwater numerical model and presented water balance results for a series of sub-basins throughout the county. Results for the Napa River - Larkmead Reach sub-basin (which contains the project parcels) indicates that between 2000 and 2003 mean annual recharge was ~26% of mean annual precipitation.

Luhdorff and Scalmanini (2013) applied a Root Zone Water Balance approach utilizing observed streamflow data from the USGS Napa River at Calistoga gauging station which was active from 1976 to 1983. This analysis revealed that mean annual recharge varied substantially from ~2,000 ac-ft/yr in the extremely dry year of 1977 to ~17,200 ac-ft/yr in the wet year of 1983. These volumes are equivalent to approximately ~8.8 inches/yr or ~19% of mean annual precipitation. While this estimate did account for the spatial variations in land cover and soil characteristics, the results represent the average or lumped water balance for the entire watershed area above the gauging location including areas with high and low recharge potential whereas the earlier estimates focus on the valley floor where recharge potential is expected to be high.

Project Aquifer

The four previous estimates of recharge discussed above suggest that mean annual groundwater recharge within the northern Napa Valley is equivalent to approximately 12% to 26% of the mean annual precipitation. For the purposes of estimating recharge to the project aquifer, we selected the Luhdorff and Scalmanini (2013) values since they represent the most recent water balance work in the area and the estimates lie in the middle of the range between the low and high end estimates.

Normalizing the Luhdorff and Scalmanini (2013) recharge estimates by drainage area reveals that the average annual recharge over the 1976 - 1983 period was 8.8 inches and varied substantially from 1.7 inches in the extremely dry year of 1977 to 14.8 inches in the wet year of 1983. Applying these watershed-averaged rates to the project parcel areas suggests that ~6.7 to 57.6 ac-ft/yr of recharge occurs on the project parcels with a mean value of 34.5 ac-ft/yr.

While a parcel-based approach to estimating recharge is useful, it greatly simplifies the spatial complexities of recharge processes. The project wells are completed almost entirely within the tuffaceous unit of the Sonoma Volcanics. As described in previous studies, most recharge to this unit is derived from infiltration of precipitation and seepage from streams within the outcrop areas bordering the valley. Examination of the surficial geology reveals that approximately 4,010 acres of this material is exposed within the watershed area upstream of the project parcels (Figure 5). Several tributary streams including Cyrus Creek (totaling 6.4 miles of stream length) flow over the areas of exposed tuff, and recharge from seepage through the streambed in these areas is expected to be an important component of the total recharge (Figure 5) following the findings of Johnson (1977) and Farrar and Metzger (2005) from the MST basin. Applying the watershed-averaged recharge rates to the area of exposed tuff suggests that total recharge to the exposed tuff is on the order of 575 to 4,943 ac-ft/yr.

The tuff is also present along the valley flow where it is overlain by shallow alluvium. The degree of connectivity between the tuff and the overlying alluvium is poorly understood, however a potentially significant additional source of recharge is seepage between the

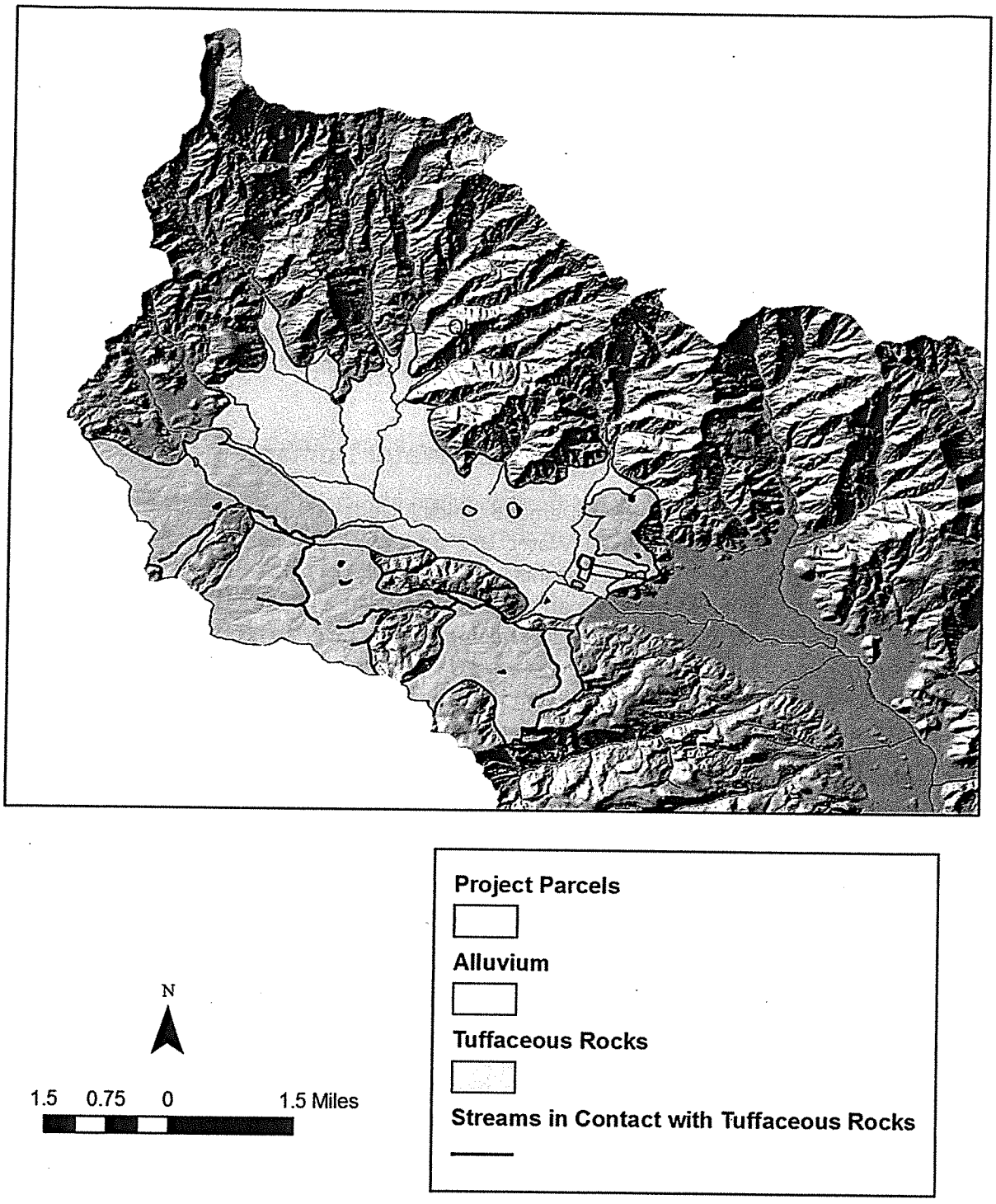


Figure 5: Extent of exposures of tuffaceous rocks and alluvium up-gradient of the project parcels.

saturated alluvium and the underlying tuff. Applying the watershed-averaged recharge rates to the area of exposed alluvium within the watershed area upstream of the project parcels (3,750 acres) suggests that total recharge to the alluvium is on the order of 538 to 4,627 ac-ft/yr (Figure 5); an unknown portion of that recharge likely percolates to the underlying tuff.

While the recharge estimates presented here are realistic, they most likely under-estimate the actual recharge. First, as acknowledged in the report, Luhdorff and Scalmanini (2013) included all gauged flow in their calculation of runoff from the Napa River at Calistoga gauge record whereas a portion of the flow represents baseflow rather than runoff. This would tend to over-predict runoff and thus under-predict recharge. Secondly, the Luhdorff and Scalmanini (2013) estimate is a watershed-wide estimate which includes a diverse area underlain by areas of both high and low recharge potential and those estimates have been applied here to areas underlain entirely by units of high recharge potential where recharge would be expected to be higher than the watershed average rates.

Comparison of Recharge and Proposed Water Demand

As discussed above, the Total Proposed Demand which includes the Existing Water Use on the Clos Pegase parcel and the Proposed Water Use on the Girard parcel is expected to be approximately 8.23 ac-ft/yr. This represents approximately 24% of the 34.5 ac-ft/yr mean annual recharge as calculated using a parcel-based approach and the total combined parcel area of 46.92 acres. The average annual recharge is generally taken to represent the volume up to which groundwater pumping is unlikely to result in reduced water availability over time. As discussed above, recharge can vary widely and in wet years the demand could be as low as 14% of recharge and as high as 123% of recharge during extremely dry years.

For additional perspective, it is useful to note that based on the Phase I Water Availability Analysis guidelines for the Napa Valley, the Allowable Water Allotment for the combined parcel area would be 46.9 ac-ft/yr, and the actual Total Proposed Demand represents only 18% of this Phase I allotment value.

Another useful way to evaluate the Total Proposed Demand is to compare it to the total aquifer recharge up-gradient of the project parcels. This comparison reveals that the Total Proposed Demand represents less than 0.3% of the mean annual recharge to the tuffaceous aquifer up-gradient of the project parcels and less than 0.2% of the mean annual recharge to the tuffaceous and alluvial aquifers up-gradient of the project parcels.

Given that the proposed water demands are significantly less that the mean annual recharge, the proposed pumping is unlikely to result in reduced water availability over time. On shorter time-scales such as during drought conditions when recharge rates are substantially reduced, demands in excess of recharge can result in temporary reductions in groundwater storage. This occurred during the 1976-1977 drought as evidenced by the lower groundwater elevations recorded during this period at wells throughout the Napa Valley. Importantly, groundwater

elevations recovered within a few years indicating that there is overall stability in water availability conditions.

Table 9: Comparison of proposed demand and recharge.

	Volume (ac-ft/yr)	Recharge Surplus (ac-ft/yr)	Demand as % of Recharge
Total Proposed Demand	8.2		
Parcel-based Mean Annual Recharge	34.5	26.3	23.9%
Aquifer-based Mean Annual Recharge	2938.0	2929.8	0.3%

Aquifer Testing

Overview

A pressure transducer (Solonist Troll 700s) was deployed in the Girard project well to automatically record water levels every two minutes between February 12th and 23rd, 2015. Manual water level measurements were taken periodically using an electronic sounder to validate the transducer data. A staff plate was also installed in the sump located southeast of the Girard Well. The sump is open to the shallow aquifer material and staff-plate readings were observed periodically.

A constant rate 24-hr pump test with a pump rate of 5.37 gal/min was performed on the Girard Well beginning on February 18th. Analysis of the resulting time/drawdown data provides a means of estimating aquifer properties, evaluating the extent of lateral drawdown away from the wells, and determining the relative sufficiency of the well for meeting expected water demands. No observation wells located reasonably close to the Girard Well could be identified and given the lack of observation well data, the time/drawdown data is useful for estimating the aquifer Transmisivity (T) but not the Storage Coefficient (S).

Test Results

Groundwater levels at the Girard Well show a general trend of increasing elevations over the data collection period with a total increase of ~10-ft over the 11-day observation period indicating that the aquifer is receiving recharge. The effects of four short-duration pumping events can be seen between 2/13/15 and 2/17/15 (Figure 6). The observations over this period are helpful in that they indicate the aquifer response to typical pumping operations. The drawdown associated with the constant rate pump test can be seen beginning 2/18/15 and the data from 2/19/15 to 2/23/15 show the well recovery data following the test (Figure 6). Water levels in the sump were relatively constant throughout the observation period and did not show a response to pumping at Well #2 (Figure 5).

The water level data for the aquifer test on Well #2 was detrended in order to remove the background trend of increasing water levels and establish a time/drawdown relationship solely

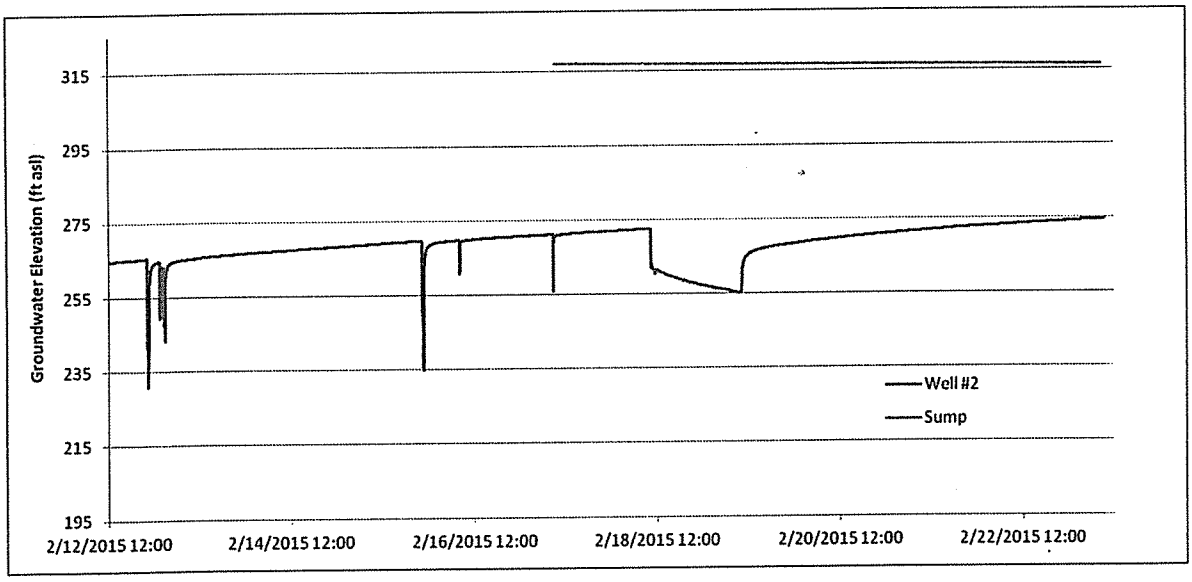


Figure 6: Hydrographs of groundwater elevations at Well #2 and the sump for the 2/12/2015 to 2/23/2015 observation period.

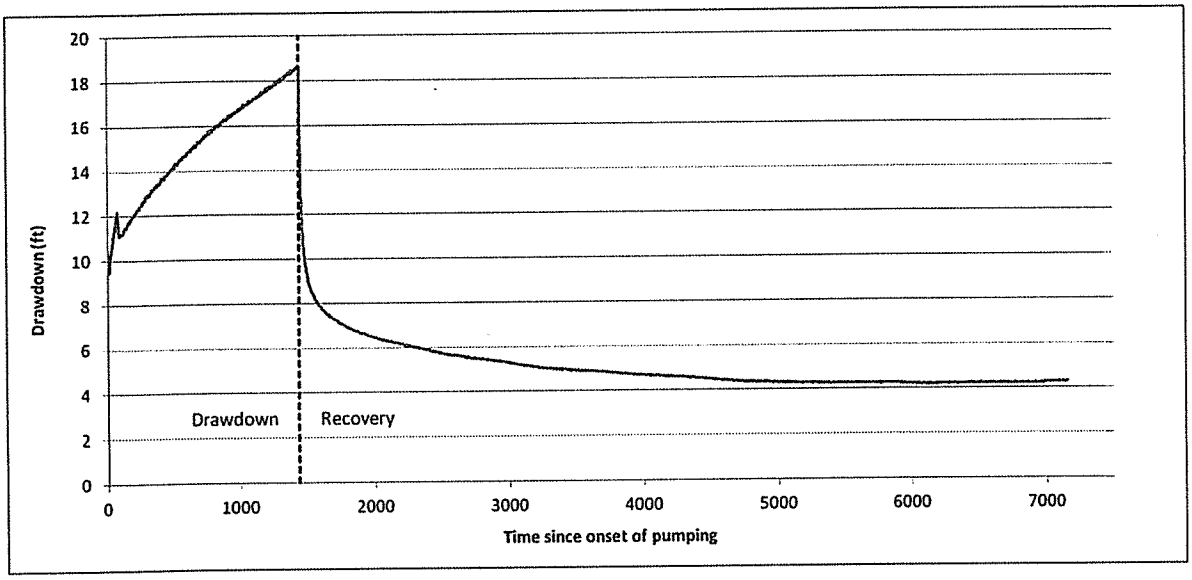


Figure 7: Time/drawdown data for the aquifer test conducted at Well #2.

representative of the drawdown due to pumping (Figure 7). The aquifer test data were analyzed using AQTESOLV and a type curve matching approach was used to analyze the aquifer test data and estimate aquifer properties. Four mathematical solutions were applied, the Theis (1935), Cooper-Jacob (1946), and Papadopulos-Cooper (1967) methods for confined aquifers and the Hantush-Jacob (1955) method for a leaky confined aquifer. No previous estimates of the Storage Coefficient for the Sonoma Volcanics in the Calistoga area are available, however Johnson (1977) estimated that the Storage Coefficient (S) was between 0.0001 and 0.001 for the tuffaceous units of the Sonoma Volcanics in the MST groundwater basin. Each solution was employed to estimate Transmisivity (T) for both the low and high end reported S values.

The T estimates resulting from the aquifer test analyses range from 25.9 to 105.1 ft^2/day with a median value of 73.2 ft^2/day (Table 10). The median estimate of S and T and Equation 1 (Driscoll, 1995) were used to estimate the location and extent of the cone of depression resulting from 24-hours of continuous pumping at Well #2 at a constant pumping rate of 5.37 gal/min:

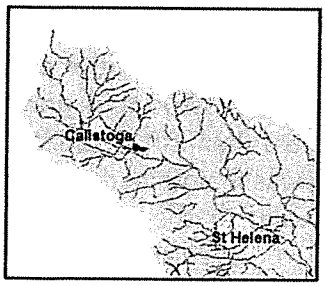
$$S = 2.25Tt / r_0^2 \quad \text{(Equation 1)}$$

where S is the Storage Coefficient, T is Transmisivity (ft^2/day), t is time, and r_0 is the distance (ft). Maximum drawdown at Well #2 was 18.7 ft which diminished quickly with distance from the well to less than 5-ft at a radius of 60-ft, less than 1-ft at a radius of 404-ft, and zero at a radius of 547-ft (Figure 8). Although an aquifer test was not performed on the Clos Pegase well, the well is completed to a similar depth in the same aquifer material so the results from the aquifer test at the Girard well can reasonably be applied to both project wells.

Equation 1 can also be solved to estimate the duration of continuous pumping that would be necessary for the associated cone of depression to reach various points of interest. The location of wells on neighboring properties is unknown. Wells are often located close to the residences they serve so the distance from each project well to the five closest residences was tabulated and the duration of pumping that would result in the cone of depression reaching each residence was calculated (Tables 11 and 12). This exercise reveals that between 1.0 and 3.5 days of continuous pumping would be required for the cone of depression associated with the Clos Pegase well to reach neighboring residences. At the Girard well between 1.9 and 11.6 days of pumping would be required (Table 12). Continuous pumping of 7.2 and 7.7 days from the Clos Pegase and Girard wells respectively would be required for drawdown to intersect the Napa River (Tables 11 and 12).

Table 10: Results of the aquifer test conducted at Well #2.

Solution	Transmisivity ft^2/d (T)	Storage Coefficient (S)	Notes
Theis	64.3	0.001	Drawdown and Recovery
Theis	77.6	0.0001	Drawdown and Recovery
Hantush-Jacob	65.0	0.001	Drawdown and Recovery
Hantush-Jacob	78.5	0.0001	Drawdown and Recovery
Papadopulos-Cooper	25.9	0.001	Drawdown and Recovery
Papadopulos-Cooper	35.9	0.0001	Drawdown and Recovery
Cooper_Jacob	68.8	0.001	Drawdown Only
Cooper_Jacob	82.2	0.0001	Drawdown Only
Cooper_Jacob	88.6	0.001	Recovery Only
Cooper_Jacob	105.1	0.0001	Recovery Only
MEDIAN	**73.2**	**0.00055**	



500 250 0 500 Feet

Project Wells

Project Parcels

Drawdown < 1ft

Drawdown 1 - 5 ft

Drawdown 5 - 10 ft

Drawdown > 10 ft

N

Figure 8: Drawdown resulting from 24 hours of continuous pumping at Well #2 at 5.47 gpm.

Table 11: Estimated duration of pumping required at Well #1 for the cone of depression to reach neighboring residences and the Napa River.

Location	Distance from Well (ft)	Time (days)
APN 020-150-046	541	1.0
APN 020-150-028	772	2.0
APN 020-150-031	957	3.1
APN 020-150-011	998	3.3
APN 020-150-027	1,018	3.5
Napa River	1,470	7.2

Table 12: Estimated duration of pumping required at Well #2 for the cone of depression to reach neighboring residences and the Napa River.

Location	Distance from Well (ft)	Time (days)
APN 020-150-053	747	1.9
APN 020-150-052	912	2.8
APN 020-150-025	1,306	5.7
APN 020-150-046	1,480	7.3
APN 020-150-028	1,867	11.6
Napa River	1,515	7.7

The results of the aquifer test indicate that the magnitude of drawdown associated with pumping the Girard well diminishes quickly with distance away from the well. Pumping durations in excess of one day are not necessary or recommended but for illustrative purposes if one assumes 10 days of continuous pumping at 5.37 gal/min, the associated drawdown would be less than 5-ft at a distance of 186-ft from the well and less than 2-ft at a distance of 740-ft. This hypothetical exercise illustrates that even if pumping was maintained long enough for the cone of depression to reach one or more neighboring wells or the Napa River, the magnitudes of drawdown would be minimal. It is also important to recognize that many wells in the area extract water from the over-lying alluvium in addition to or instead of from the underlying tuffaceous aquifer. The hypothetical drawdown discussed above represents conditions in the tuffaceous aquifer and given the lack of hydraulic connection observed between the Girard Well and the nearby sump it is unlikely that drawdown in the tuffaceous aquifer would have any direct or significant influence on groundwater elevations in the overlying alluvial aquifer.

cone of depressions associated with the proposed pumping relative to the separation between the project wells and the river all suggest that it is highly unlikely that the proposed pumping could influence baseflow conditions in the Napa River.

The time/drawdown plots presented in the Tom Meyers study greatly over-state the expected drawdown. The value of Transmisivity (T) used to produce these plots is significantly higher than the actual T as determined by the aquifer test at the Girard Well. Additionally, the durations shown in the plots are extremely large relative to the durations that are required to meet the peak project demands. As discussed above under Water Supply Sufficiency, pumping durations are never expected to exceed one day.

Elevated concentrations of arsenic and boron have been documented at wells located north of the project parcels and concerns have been raised that the proposed pumping could results in contaminant migration. These elevated concentrations do not appear to extend as far south as the project parcels as evidenced by the water quality analyses available for the Clos Pegase well and reported by Luhdorff and Scalmanini (2011) for nearby wells. If the proposed pumping were to result in a significant long-term lowering of groundwater elevations extending for some distance beyond the project parcels it is possible that this could affect water quality conditions and contaminant migration. Our findings indicate, however, that the proposed pumping is significantly less that the mean annual recharge and that long-term reductions in groundwater elevations are unlikely to occur as a result of the project pumping. Even short-term reductions in elevations associated with pumping do not extend far enough away from the project wells to intersect areas documented as having elevated concentrations of arsenic and boron. Given the limited effects of pumping on groundwater elevations it is highly unlikely that the proposed pumping would affect contaminant migration or water quality.

Conclusions

The proposed Girard Winery and the existing Clos Pegase Winery are expected to have an annual water demand of approximately 8.2 ac-ft/yr. These demand represents only 24% of the parcel-based mean annual groundwater recharge and only ~0.3% of the total recharge to the tuffaceous aquifer up-gradient of the project parcels. Given that mean annual recharge is significantly higher than the proposed demand, it is highly unlikely that the proposed pumping would result in long-term declines in groundwater elevations or depletion of groundwater resources.

The expected magnitudes of drawdown associated with the proposed pumping are reasonably small and the spheres of influence associated with pumping at the required rates and durations needed to meet demands do not extend far enough away from the project wells to intersect neighboring wells or the Napa River. These findings coupled with the fact that the project wells draw water from the tuffaceous rocks of the Sonoma Volcanics rather than from the alluvial aquifer (the primary aquifer providing water to many of the wells in the area and the material responsible for baseflow discharge to the Napa River) indicate that the proposed pumping is highly unlikely to result in interference to neighboring wells or impacts to river baseflows.

Water Supply Sufficiency

The total proposed demand for both parcels is approximately 8.23 ac-ft/yr and the peak daily demand is on the order of 12,608 gal/day. At the pumping rate of 5.37 gal/min used during the aquifer test, it would require that both project wells operate ~20 hrs/day in order to meet the peak daily demand. In order to avoid long-duration pumping and provide time for recovery it would be preferable to pump at a higher rate for a shorter duration. If a pumping rate of 10 gal/min were used, a schedule of 10.5 hours on and 13.5 hours off could be employed for both wells in order to meet the peak daily demand.

Evaluation of the drawdown associated with this pumping schedule reveals that the maximum drawdown at the well would be on the order of 29.4-ft diminishing to less than 5-ft at a distance of 125-ft and less than 2-ft at a distance of 280-ft. Longer recovery periods could be incorporated by buffering the demand using the available storage from the two (one existing and one proposed) 58,000 gallon storage tanks. This could be accomplished by pumping at somewhat higher rates or longer durations to fill the tanks and then relying on these stored water to provide water during recovery periods.

Response to Concerns

Several concerns about the potential impacts of the project were raised in a recent Technical Memorandum prepared by Tom Meyers. The first concern suggests that the proposed pumping could unacceptably lower groundwater levels because actual recharge is less than the assumed value of 12 inches per year used by Napa County in Phase I Water Availability Analyses to determine allotments for the Napa Valley Floor. Our findings confirm that actual recharge is likely lower than 12 inches per year and is probably closer to 8.8 inches per year on a mean annual basis. The proposed water use for the project, however, is equivalent to only ~24% of the mean annual recharge computed using a parcel-based approach and only 0.3% of the total mean annual recharge to the tuffaceous aquifer up-gradient of the project site. Given that the proposed water use is significantly less than recharge it is highly unlikely that the proposed pumping would significantly lower groundwater levels on a long-term basis.

Another concern raised is that the proposed pumping could affect baseflow discharges in the Napa River. A comparison between groundwater elevations in the project wells and the elevations of the thalweg of the Napa River reveals that groundwater elevations in the tuffaceous aquifer at the project wells are some 15 to 20-ft below the riverbed (Figure 2). This separation suggests that the Napa River is not directly connected to the groundwater system within the Sonoma Volcanics. As evidenced by the lack of response in the alluvial aquifer at the sump during the pump test, withdrawals from the tuffaceous aquifer do not directly affect water levels in the overlying alluvial aquifer which would be the only mechanism for potential impacts to the river. Additionally, the project wells are located some 1,470 to 1,515-ft away from the river and the extent of the cone of depression associated with the proposed pumping only extends some 387 to 547-ft away from the wells. The vertical separation between groundwater elevations in the Sonoma Volcanics and riverbed elevations, the lack of response of the alluvial aquifer to pumping the underlying volcanic aquifer, and the limited extent of the

References

Always Engineering, 2014. Girard Winery Phase I Water Availability Study,

Cooper, H.H. and C.E. Jacob, 1946. A Generalized Graphical Method for Evaluating Formation Constants and Summarizing Well Field History. American Geophysical Union Transactions, vol. 27, pp. 526-534.

DHI, 2006. Final Baseline Data Report Technical Appendix - Water Quantity and Water Quality Report, prepared for Napa County.

Driscoll, F.G., 1995. Groundwater and Wells, Sixth Printing, Johnson Screens, St. Paul, Minnesota.

Farrar, C.D., and L.F. Metzger, 2003. Ground-water Resources in the Lower Milliken-Sarco-Tulucay Creeks Area, Southeastern Napa County, California, 2000 - 2002. U.S. Geological Survey Water Resources Investigations Report 03-4229.

Faye, R.R., 1973. Ground-water Hydrology of Northern Napa Valley California, U.S. Geological Survey Water Resources Investigations Report 13-73.

Hantush, M.S. and C.E. Jacob, 1955. Non-steady Radial Flow in an Infinite Leaky Aquifer. American Geophysical Union Transactions, vol. 36, pp. 95-100.

Jason Duval, Clos Pegase Winery Operations Manager, personal communication, February 2015.

Johnson M.J., 1977. Ground-water Hydrology of the Lower Milliken-Sarco-Tulucay Creeks Area, Napa County, California. U.S. Geological Survey Water Resources Investigations Report 77-82.

Kunkel, F. and J.E. Upson, 1960. Geology and Groundwater in Napa and Sonoma Valleys, Napa and Sonoma Counties, California. U.S. Geological Survey Water Supply Paper 1495.

Luhdorff and Scalmanini Consulting Engineers, 2011. Napa County Groundwater Conditions and Groundwater Monitoring Recommendations, Task 4 Report. Prepared for Napa County.

Luhdorff and Scalmanini Consulting Engineers, 2015. Napa County Comprehensive Groundwater Monitoring Program 2014 Annual Report and CASGEM Update. Prepared for Napa County.

Luhdorff and Scalmanini Consulting Engineers and MBK Engineers, 2013. Updated hydrogeologic conceptualization and characterization of conditions. Prepared for Napa County.

Montgomery Consulting Engineers, 1991. Water Resources Study for the Napa County Region, prepared for Napa County.

Papadopulos, I.S. and H.H. Cooper, 1967. Drawdown in a Well of Large Diameter. Water Resources Research, vol. 3, no. 1, pp. 241-244.

Theis, C.V., 1935. The Relation Between the Lowering of the Piezometric Surface and the Rate and Duration of Discharge of a Well Using Groundwater Storage. American Geophysical Union Transactions, vol. 16, pp. 519-524.

Summit Engineering, 2011. Due Diligence Report for the Clos Pegase Winery.

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Project: Girard Winery Use Permit Application
Phase 1 Water Availability – Process Water Use Clarification
APN: 020-150-017

Dear Wyntress,

As requested, this letter is provided to clarify the process water use assumptions and associated groundwater use requirements for the proposed Girard Winery and existing Clos Pegase Winery located on Dunaweal Lane in Calistoga, Napa County.

When the Clos Pegase property was for sale, Summit Engineering was engaged to prepare the *Due Diligence Report for Clos Pegase Winery, 1060 Dunaweal Lane, Calistoga, Ca 94515*, dated November 7, 2011. In that document, it states, "Between 2009-2011, the amount of annual water use averaged 4.6 gallons of water per gallon of wine produced, which is slightly lower than the standard of 6 gallons of water per gallon. Based on this water use rate at a production level of 107,100 gallons of wine per year, the average monthly water use was estimated to be 41,000 gallons per month," and, "Average Process Wastewater generation from 2009-2011 was 512,000 gallons per year (41,000 gallon per month average)."

Although the *Due Diligence* report states a water use rate of 4.6 gallons Process water (PW) per gallon of wine produced, actual calculations using 512,000 gallons of PW and 107,100 gallons of wine produced indicates a generation rate of 4.78 gallons PW per gallon of wine. This value is used to project ultimate water use at 200,000 gallons of wine production for Clos Pegase on page 5 of the Phase 1 Water Availability Analysis dated March 26, 2015, prepared by Always Engineering.

To evaluate the proposed water use from the Girard Winery, water use data from the existing production operations for Girard at a warehouse in the Town of Sonoma were reviewed. For the peak harvest month of October 2013, process water use averaged 4,999 gallons per day with a monthly total of 154,969 gallons. The production for 2013 at Girard's Sonoma operation was 1,584 tons which equates to a production of 237,600 gallons of wine for the vintage of 2013 (150 gal finished wine per ton).

Based on water use data averaged from multiple wineries, it is determined that approximately 30% of the annual process water use occurs during the peak processing period of September and

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October. Approximately 16.5% of the annual water use occurs in the peak month. Therefore, using the Clos Pegase values of 4.78 gal PW/gal wine and a production of 200,000 gallons, the average flow of the peak month at Clos Pegase ultimate production is estimated as follows:

200,000 gallons wine x 4.78 gal pw/gal wine x 16.5%= 157,740 gallons/peak month

The average for this month is determined by dividing by 31 days of processing for an average flow of the peak month of 5,088 gallons PW per day. Because at ultimate production levels, the peak monthly water use for Girard is within 1.8% of the peak monthly water use from Clos Pegase, and the existing Girard water use is actually less for a greater production, it is assumed that process water use for the two site will be the same to err on the side of conservatism. Because of this, the same 4.78 gallons PW per gallon of wine water use rate is also applied to the proposed Girard operations, as stated on Page 2 and 3 of the Girard Winery Phase 1 Water Availability Analysis.

We trust that this letter sufficiently explains the basis of the winery process water use estimates provided in the Phase 1 Water Availability Analysis. Please feel free to contact me if there are additional questions.

Sincerely,

Ben Monroe, P.E., QSD/QSP
PROJECT MANAGER
Always Engineering, Inc.

REGISTERED PROFESSIONAL ENGINEER
BENJAMIN W. MONROE
No. 70012
Exp.
CIVIL
STATE OF CALIFORNIA

cc: Pat Roney (Vintage Wine Estates)

Phase 1 Water Availability Analysis
12530_Girard Winery
February 18, 2014
Revised: March 26, 2015

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Project: Girard Winery
Use Permit Application
Phase 1 Water Availability
APN: 020-150-017 (Girard Winery Use Permit)
APN: 020-150-012 (Clos Pegase Winery)

Dear Mr. McDowell,

This correspondence is provided to clarify and supplement the Phase One Groundwater Water Availability prepared and originally submitted with the Girard Winery Use Permit. As required by the Napa County Department of Public Works, this letter provides the Phase 1 Water Availability Analysis as a supplement to the Girard Winery Use Permit application. The following information is provided to meet this requirement.

SITE PLAN

The Use Permit Site Plan has been provided and is attached. This site plan provides the existing and proposed site conditions for Girard winery. The site consists of existing vineyards, open space, waste water treatment ponds, an agricultural building, and infrastructure. Also provided is a portion of the USGS quad map indicating location of the project parcel and approximate well locations. There is also included two additional site plans; one displaying the existing groundwater supply system components, and one displaying the existing vineyards associated with the two parcels.

PROJECT DESCRIPTION

Girard Winery, located at 1077 Dunaweal Ln, Calistoga, California (APN 020-150-017) is applying for a use permit to construct a new winery on this parcel.

It is proposed to construct a new winery with a production of 200,000 gallons of wine per year. Also includes associated site improvements, tasting room, and hospitality events.

On the project parcel, there is an existing well which currently serves the Clos Pegase Winery, which is located across the street at 1060 Dunaweal Lane, Calistoga (APN: 020-150-012). This analysis will take into account both parcels' water use. There is a second well, located on the Clos Pegase parcel also

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supplies water for the permitted public water system. Groundwater for the project will be supplied by both wells.

GIRARD ALLOWABLE WATER ALLOTMENT

The proposed parcel is 26.53 acres and located in the valley floor

Parcel acreage	=	26.53 acres
Parcel Location Factor	=	1.0 ac-ft/ac-yr (Valley Floor)
Allowable Water Allotment	=	26.53 ac-ft/yr

Based on Step #2 of the Water Availability Study, the allowable water allotment for the site is 26.53 ac-ft/yr.

GIRARD WATER CONSUMPTION

Presented below, and in the attached spreadsheets, are the calculations used to complete the Phase One Study with the assumed Napa County values.

Girard Vineyard Use

14.53 acres x 0.5 ac-ft/ac-yr (irrigation)	=	7.265 ac-ft/yr
14.53 acres x 0.25 ac-ft/ac-yr (frost protection)	=	3.6325 ac-ft/yr
14.53 acres x 0.0 ac-ft/ac-yr (heat protection)	=	0 ac-ft/yr
Total Vineyard Use	=	**10.8975 ac-ft/yr**

The total amount of vineyard water use on the Girard parcel is estimated to be 10.8975 ac-ft/yr using the Napa County Public Works values. It should be noted that this value includes irrigation and frost protection. No heat protection occurs at this site. It should also be noted that all vineyard irrigation is supplied by the irrigation reservoir on the Girard parcel. This pond is filled solely with rainwater, vineyard subdrain water, and treated winery process wastewater. This pond is the sole source of irrigation for all vineyards and landscape on the Girard and Clos Pegase parcels. Vineyard irrigation demand has been included in this analysis to show that the use is below the County threshold, should well water be required in an extremely dry year, which has not been needed to date.

Girard Winery Process Use

Process water demand is estimated using the factors in the Napa County Phase One form.

200,000 gallons wine/yr x 2.15 ac-ft/100,000 gallons wine = 4.3 ac-ft/yr

Additionally, water use data for the existing Clos Pegase and Girard process operations was reviewed for the wastewater feasibility study preparation and also during Due Diligence of the property acquisition. In that analysis, it was estimated that approximately 4.78 gallons of water were used per

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CLOS PEGASE ALLOWABLE WATER ALLOTMENT

The existing Clos Pegase Winery parcel (APN 020-150-012) is 20.39 acres and located in the valley floor

Parcel acreage	=	20.39 acres
Parcel Location Factor	=	1.0 ac-ft/ac-yr (Valley Floor)
Allowable Water Allotment	=	20.39 ac-ft/yr

Based on Step #2 of the Water Availability Study, the allowable water allotment for Clos Pegase Winery is 20.39 ac-ft/yr. however, potable water for the site is provided by a well on the Girard Winery parcel and will be reviewed later in this document under the combined analysis. In addition, all of the landscape and vineyard irrigation on the Clos Pegase parcel is provide by the irrigation reservoir on the Girard parcel. That reservoir is filled solely with vineyard subdrain water, rain water, and treated process wastewater and therefore should not present a demand on groundwater.

CLOS PEGASE WATER CONSUMPTION

Presented below are the calculations used to complete the Phase One Study with the assumed Napa County values.

Clos Pegase Vineyard Use

4.0 acres x 0.5 ac-ft/ac-yr (irrigation)	=	2.0 ac-ft/yr
4.0 acres x 0.25 ac-ft/ac-yr (frost protection)	=	1.0 ac-ft/yr
4.0 acres x 0 ac-ft/ac-yr (heat protection)	=	0 ac-ft/yr
Total Vineyard Use	=	**3.0 ac-ft/yr**

The total amount of vineyard water use on the Clos Pegase parcel is estimated to be 3.0 ac-ft/yr using the Napa County Public Works values. As noted above, this value includes irrigation and frost protection. No heat protection occurs at this site. Also noted above is that all vineyard irrigation is supplied by the irrigation reservoir on the Girard parcel. This pond is filled solely with rainwater, vineyard subdrain water, and treated winery process wastewater. This pond is the sole source of irrigation for all vineyards and landscape on the Girard and Clos Pegase parcels. Because no groundwater is used for vineyard irrigation, it is not addressed any further in this groundwater analysis.

Clos Pegase Winery Process Use

Process water demand is estimated using the factors in the Napa County Phase One form.

200,000 gallons wine/yr x 2.15 ac-ft/100,000 gallons wine = 4.30 ac-ft/yr

Additionally, water use data for the existing Clos Pegase and Girard process operations was reviewed for the wastewater feasibility study preparation and also during Due Diligence of the property

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gallon of wine produced. Projecting to ultimate production levels, the water use is estimated as follows:

200,000 gallons wine produced x 4.78 gallons water/gal wine = 956,000 gallons

956,000 gallons x 1 ac-ft/325,851 gallons = 2.93 ac-ft/yr.

Therefore, it is estimated that approximately 2.93 ac-ft/yr will be required for processing of wine.

Girard Winery Domestic Use

In the attached spreadsheets, domestic water use for the site has been estimated. This estimate has been prepared using peak and average employee, tasting visitor, and event use numbers for the site. Detailed calculations are shown in the spreadsheets with a summary below:

Employee Use	=	0.184 ac-ft/yr
Tasting Visitor Use	=	0.287 ac-ft/yr
Event Use	=	0.025 ac-ft/yr
Total Domestic Use	=	0.496 ac-ft/yr

A total of 0.496 ac-f/yr is estimated for domestic uses. This value assumes that employees will be onsite 7 days a week and 52 weeks a year. It also assumes maximum tasting room weekday and weekend visitation and therefore is likely conservative in the value generated.

Girard Winery Landscape Use

Landscape irrigation for the Girard project will be provided entirely by water from the irrigation pond, which does not receive groundwater supplies. Therefore, landscape use is not accounted for in this groundwater analysis.

Total Girard Winery Use

Process Use	=	2.93 ac-ft/yr
Domestic Use	=	0.496 ac-ft/yr
Total Winery Use	=	**3.43 ac-ft/yr**

The total Girard Winery water use is estimated to be 3.43 ac-ft/yr.

Total Girard Water Use

The **total estimated water demand** from the project is the sum of all the winery uses and is estimated as **3.43 ac-ft/yr.** This is less than the parcel threshold of 26.53 ac-ft per year and represents approximately 13% of the threshold for additional analysis.

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acquisition. In that analysis, it was estimated that approximately 4.78 gallons of water were used per gallon of wine produced. Projecting to ultimate production levels, the water use is estimated as follows:

200,000 gallons wine produced x 4.78 gallons water/gal wine = 956,000 gallons

956,000 gallons x 1 ac-ft/325,851 gallons = 2.93 ac-ft/yr.

Therefore, it is estimated that approximately 2.93 ac-ft/yr will be required for processing of wine.

Winery Domestic Use

In the attached spreadsheets, domestic water use for the site has been estimated. This estimate has been prepared using peak and average employee, tasting visitor, and event use numbers for the site. Detailed calculations are shown in the spreadsheets with a summary below:

Employee Use	=	0.251 ac-ft/yr
Tasting Visitor Use	=	0.347 ac-ft/yr
Event Use	=	0.0552 ac-ft/yr
Total Domestic Use	=	0.6537 ac-ft/yr

A total of 0.6537 ac-f/yr is estimated for domestic uses. This value assumes that employees will be onsite 7 days a week and 52 weeks a year. It also assumes maximum tasting room weekday and weekend visitation and therefore is likely conservative in the value generated.

Clos Pegase Winery Landscape Use

Landscape irrigation for the existing Clos Pegase landscape is provided entirely by water from the irrigation pond, which does not receive groundwater supplies. Therefore, landscape use is not accounted for in this groundwater analysis.

Clos Pegase Residential Use

The Close Pegase Parcel has an existing residence onsite. A residence water use is estimated as follows:

Primary Residence x 0.75 ac-ft/yr = 0.75 ac-ft/yr

In addition to the residence domestic uses, there is a pool which is assigned 0.1 ac-ft/yr for evaporation and approximately 0.15 acres of landscaping. Based on the California Irrigation Management and Information System (CIMIS), reference evapotranspirtation rate (ETo) data for the Oakville field station projects approximately 0.36 ac-ft/yr for landscape demand. The total residential demand is estimated by summing these values for a total demand of 1.21 ac-ft/yr.

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Total Clos Pegase Parcel Use

Process Use	=	2.93 ac-ft/yr
Domestic Use	=	0.6537 ac-ft/yr
Residential Use	=	1.21 ac-ft/yr.
Total Winery Use	=	**4.79 ac-ft/yr**

The total winery water use is estimated to be 4.79 ac-ft/yr.

Total Clos Pegase Water Use

The total estimated water demand from the project is the sum of the winery use (3.58 ac-ft/yr), and residence use (1.21 ac-ft/yr) and is estimated to be 4.79 ac-ft/yr. This value is approximately 23% of the parcel's threshold.

COMBINED ALLOWABLE WATER ALLOTMENT

The combined acreage of the parcel is 46.92 acres and located in the valley floor. Combined allowable threshold is calculated as follows:

Parcel acreage	=	46.92 acres
Parcel Location Factor	=	1.0 ac-ft/ac-yr (Valley Floor)
Allowable Water Allotment	=	46.92 ac-ft/yr

Based on Step #2 of the Water Availability Study, the allowable water allotment for the combined parcels is 46.92 ac-ft/yr.

COMBINED WATER CONSUMPTION/DEMAND

Presented below is a summary of the groundwater demands estimated in previous sections of this report and used to complete the Phase One Study.

Girard Winery Total Demand	=	3.43 ac-ft/yr
Clos Pegase Winery Total Demand	=	4.79 ac-ft/yr.
Total Combined Water Demand	=	8.22 ac-ft/yr.

A summary of these demands is presented in a comparison table in the summary and conclusions below.

EXISTING WATER SUPPLY SYSTEM

The existing potable water system consists of the onsite wells and treatment which also serves Clos Pegase Winery, under the same ownership across Duvaweal Ln. There is a storage tank on the Clos

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Pegase parcel. A new tank will be provided for Girard Winery. All vineyard and landscape irrigation is provided with the onsite reservoir which is supplied by rain, vineyard subdrain water, and treated process wastewater only.

CURRENT GROUNDWATER CONDITIONS

The report titled, *Napa County Groundwater Conditions and Groundwater Monitoring Recommendations,* dated February 2011 by Luhdorf & Scalmanini Consulting Engineers was obtained and reviewed in light of current groundwater conditions, specifically in the project vicinity. Appendix A of the report provides groundwater hydrographs showing historical groundwater depth for the wells on record. Copies of the groundwater depth graphs for the Calistoga area has been attached to this report. With the exception of the late 1970s (historical drought) and few well readings circa 2004, groundwater elevations in the Calistoga area are typically between 5 and 20 feet below existing grade. The existing well for the site had static water levels at approximately 25 feet deep in June of 1991. This is deeper than the wells on record, but should be assumed to be consistent with the groundwater table in the area. Therefore, sufficient supply appears to be available. There is no record of a depleted groundwater table in the project vicinity.

Additionally, on March 3, 2015, Luhdorff & Scalmanini Consulting Engineers issued the *Napa County Comprehensive Groundwater Monitoring Program 2014 Annual Report and CASGEM Update.* On page 35, section 5.1.1 of this report, it presents Groundwater Level Trends and Flow Directions for the Calistoga and St. Helena Subareas. In light of data review from 1970 to present, the professional opinion of L&S is that "Groundwater levels have been generally stable over time in the Calistoga Subarea...Minor seasonal declines of about 10 feet occur in the fall....However, in every year since 1970, including 2014, groundwater levels returned to within 10 feet of the ground surface." Coupled with the historical trouble-free operation of the onsite water supply system, this statement suggests that the project should not have problem providing water for the project without impacting groundwater levels outside the project area.

A Phase 2 Water Availability Analysis was also performed on Well #2 by O'Conner Environmental which was also submitted in support of the Use Permit application. The findings of that report also indicate that there is more than sufficient groundwater available to supply the project.

SUMMARY AND CONCLUSIONS

As presented above, the overall water use for the proposed Girard Winery and existing Clos Pegase Winery is expected to be 8.22 ac-ft/yr combined, which presents approximately 31% of the Girard parcel allotment, 40% of the Clos Peagse parcel allotement, and 17.5% of the allotment for both parcels combined. Therefore, the Phase 1 study should be sufficient to satisfy the requirements of the Public Works Department.

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PARCEL	ALLOTMENT (AC-FT/YR)	DEMAND (AC-FT/YR) (without irrigation)	IS DEMAND GREATER THAN ALLOTMENT?
GIRARD WINERY APN: 020-150-017	26.53	3.43	NO
CLOS PEGASE WINERY APN: 020-150-012	20.39	4.79	NO
COMBINED APN: 020-150-017 & 020-150-012	46.92	8.22	NO

It should be reiterated that all of the vineyard and landscape irrigation needs will be met by reusing treated process waste effluent from the wastewater pond system as well as the collection of vineyard subdrain water and rain water in the irrigation reservoir.

In summary, this project should not pose a burden to groundwater supplies and should be approved for the following reasons:

- The Girard Winery project does not exceed the groundwater threshold for the parcel it is proposed on.
- The combined Girard Winery and Close Pegase Winery projects do not exceed the groundwater threshold for the Girard parcel, nor the Clos Pegase Parcel and are substantially below the combined threshold of both parcels.

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If there are questions regarding that presented, please feel free to contact me.

Sincerely,

Ben Monroe, P.E.
Always Engineering, Inc.

cc: Heather McCollister

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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:

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)
020-150-017	26.53	1.0	1.0 AC-FT/AC-YR

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 af/yr	Residential	0 af/yr
Farm Labor Dwelling	0 af/yr	Farm Labor Dwelling	0 af/yr
Winery	0 af/yr	Winery	3.43 af/yr
Commercial	0 af/yr	Commercial	0 f/yr
Vineyard*	0 af/yr	Vineyard*	0 af/yr
Other Agriculture	0 af/yr	Other Agriculture	0 af/yr
Landscaping	0 af/yr	Landscaping	0 af/yr
Other Usage (List Separately):		Other Usage (List Separately):	
_____	_____ af/yr	_____	0 af/yr
_____	_____ af/yr	_____	0 af/yr
_____	_____ af/yr	_____	0 af/yr
TOTAL:	0 af/yr	TOTAL:	3.43 af/yr TOTAL:
	0 gallons**	TOTAL:	1,117,669 gallons**

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 if other water sources such as city water or reservoirs, the timing of the development, etc. Use additional sheets if necessary.

SEE ATTACHED REPORT

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: _____ Date: 3/26/15 Phone: 707-542-8795 X 17

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

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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.

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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)
020-150-012	20.39	1.0	20.39 AC-FT/YR

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	1.21 af/yr	Residential	1.21 af/yr
Farm Labor Dwelling	0 af/yr	Farm Labor Dwelling	0 af/yr
Winery	3.58 af/yr	Winery	3.58 af/yr
Commercial	0 af/yr	Commercial	0 f/yr
Vineyard*	0 af/yr	Vineyard*	0 af/yr
Other Agriculture	0 af/yr	Other Agriculture	0 af/yr
Landscaping	0 af/yr	Landscaping	0 af/yr
Other Usage (List Separately):		Other Usage (List Separately):	
_____	_____ af/yr	_____	_____ af/yr
_____	_____ af/yr	_____	_____ af/yr
_____	_____ af/yr	_____	_____ af/yr
TOTAL:	4.79 af/yr	TOTAL:	4.79 af/yr TOTAL:
	1,560,826 gallons**	TOTAL:	1,560,826 gallons**

Is the proposed use less than the existing usage? [ ] Yes [ ] No [X] 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 REPORT.

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: _____ Date: 3/26/15 Phone: 707-542-8795 X 17

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

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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)
020-150-017 & 020-150-012	46.92	1.0	46.92 AC-FT/YR.

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	1.21 af/yr	Residential	1.21 af/yr
Farm Labor Dwelling	0 af/yr	Farm Labor Dwelling	0 af/yr
Winery	3.58 af/yr	Winery	7.01 af/yr
Commercial	0 af/yr	Commercial	0 f/yr
Vineyard*	0 af/yr	Vineyard*	0 af/yr
Other Agriculture	0 af/yr	Other Agriculture	0 af/yr
Landscaping	0 af/yr	Landscaping	0 af/yr
Other Usage (List Separately):		Other Usage (List Separately):	
_____	_____ af/yr	_____	_____ af/yr
_____	_____ af/yr	_____	_____ af/yr
_____	_____ af/yr	_____	_____ af/yr
TOTAL:	4.79 af/yr	TOTAL:	8.22 af/yr TOTAL:
	1,560,826 gallons"	TOTAL:	2,678,495 gallons"

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 if other water sources such as city water or reservoirs, the timing of the development, etc. Use additional sheets if necessary.

SEE ATTACHED REPORT

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: _____ Date: 3/26/15 Phone: 707-542-8795 X 17

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

PHASE ONE WATER AVAILABILITY
GIRARD WINERY USE PERMIT
Date: 11/24/2014
Revised: 03/26/2015

GROUNDWATER ALLOTMENT

GIRARD WINERY (APN 020-150-017)		
PARCEL SIZE	26.53 ACRES	
PARCEL LOCATION FACTOR	1 AC-FT/AC-YR	(VALLEY FLOOR)
GROUNDWATER ALLOWABLE WATER ALLOTMENT	**26.53 AC-FT/YR**	

CLOS PEGASE WINERY (APN 020-150-012)		
PARCEL SIZE	20.39 ACRES	
PARCEL LOCATION FACTOR	1 AC-FT/AC-YR	(VALLEY FLOOR)
GROUNDWATER ALLOWABLE WATER ALLOTMENT	**20.39 AC-FT/YR**	

GROUNDWATER DEMAND

GIRARD WINERY (APN 020-150-017)	
GROUNDWATER USE	DEMAND (AC-FT/YR.)
WINERY PROCESS USE	2.9300
DOMESTIC USE	0.4961
RESIDENCE	0.0000
TOTAL CALCULATED DEMAND	3.4261

CLOS PEGASE WINERY (APN 020-150-012)	
GROUNDWATER USE	DEMAND (AC-FT/YR.)
WINERY PROCESS USE	2.9300
DOMESTIC USE	0.6537
RESIDENCE (DOMESTIC, LANDSCAPE, & POOL)	1.2100
TOTAL CALCULATED DEMAND	4.7937

1. Currently, all vineyard irrigation is provided using the irrigation pond. The existing irrigation pond is filled with rainwater, vineyard subdrain collection water, and treated process wastewater. No well has been used to irrigate the existing vineyards and landscape at the site.

PHASE ONE WATER AVAILABILITY - DEMAND/ALLOTMENT SUMMARY (WITHOUT VINEYARD IRRIGATION)

PARCEL	ALLOTMENT (AC-FT/YR)	DEMAND ON GIRARD PARCEL (AC-FT/YR)	DEMAND ON CLOS PEGASE PARCEL (AC-FT/YR)
GIRARD WINERY (APN: 020-150-017)	26.53	3.4261	3.4261
CLOS PEGASE WINERY (020-150-012)	20.39	4.7937	4.7937
COMBINED (APN: 020-150-018 & 020-150-012)	46.92	8.2198	8.2198

PHASE ONE WATER AVAILABILITY
GIRARD WINERY USE PERMIT
Date: 11/24/2014
Revised: 03/26/2015

GIRARD DOMESTIC USE

EVENTS

EVENT SIZE	# OF EVENT VISITORS	FLOW PER VISITOR	DAYS PER YEAR OCURRED	WATER USE PER YEAR (GAL/YEAR)	(AC-FT/YR)
LARGE	500	5	1	2,500	0.0077
MEDIUM	200	5	4	4,000	0.0123
SMALL	75	5	4	1,500	0.0046
			SUTOTAL	8,000	0.0246

TASTING VISITORS

DAY	# OF EVENT VISITORS	FLOW PER VISITOR	DAYS PER WEEK	WEEKS PER YEAR	WATER USE PER YEAR (GAL/YEAR)	(AC-FT/YR)
WEEKDAY	75	3	4	52	46,800	0.1436
WEEKEND	100	3	3	52	46,800	0.1436
				SUTOTAL	93,600	0.2872

EMPLOYEES

TIME PERIOD	# OF EMPLOYEES	FLOW PER EMPLOYEE	DAYS PER WEEK	WEEKS PER YEAR	WATER USE PER YEAR (GAL/YEAR)	(AC-FT/YR)
HARVEST FULL-TIME)	12	15	7	13	16,380	0.0503
HARVEST (PART-TIME)	7	7.5	7	13	4,778	0.0147
NON-HARVEST (FULL-TIME)	8	15	7	39	32,760	0.1005
NON-HARVEST (PART-TIME)	3	7.5	7	39	6,143	0.0189
				SUTOTAL	60,060	0.1843

GIRARD DOMESTIC TOTAL	**161,660**	**0.4961**

PHASE ONE WATER AVAILABILITY
GIRARD WINERY USE PERMIT
Date: 11/24/2014
Revised: 03/26/2015

CLOS PEGASE DOMEESTIC USE

EVENTS

EVENT SIZE	# OF EVENT VISITORS	FLOW PER VISITOR	DAYS PER YEAR OCURRED	WATER USE PER YEAR (GAL/YEAR)	(AC-FT/YR)
AVERAGE	150	5	24	18,000	0.0552
			SUTOTAL	18,000	0.0552

TASTING VISITORS

DAY	# OF EVENT VISITORS	FLOW PER VISITOR	WEEKS PER YEAR	WATER USE PER YEAR (GAL/YEAR)	(AC-FT/YR)
PEAK WEEK	725	3	52	113,100	0.3471
			SUTOTAL	113,100	0.3471

EMPLOYEES

TIME PERIOD	# OF EMPLOYEES	FLOW PER EMPLOYEE	DAYS PER WEEK	WEEKS PER YEAR	WATER USE PER YEAR (GAL/YEAR)	(AC-FT/YR)
HARVEST FULL-TIME)	30	15	7	13	40,950	0.1257
HARVEST (PART-TIME)	0	7.5	7	13	0	0.0000
NON-HARVEST (FULL-TIME)	10	15	7	39	40,950	0.1257
NON-HARVEST (PART-TIME)	0	7.5	7	39	0	0.0000
				SUTOTAL	81,900	0.2513

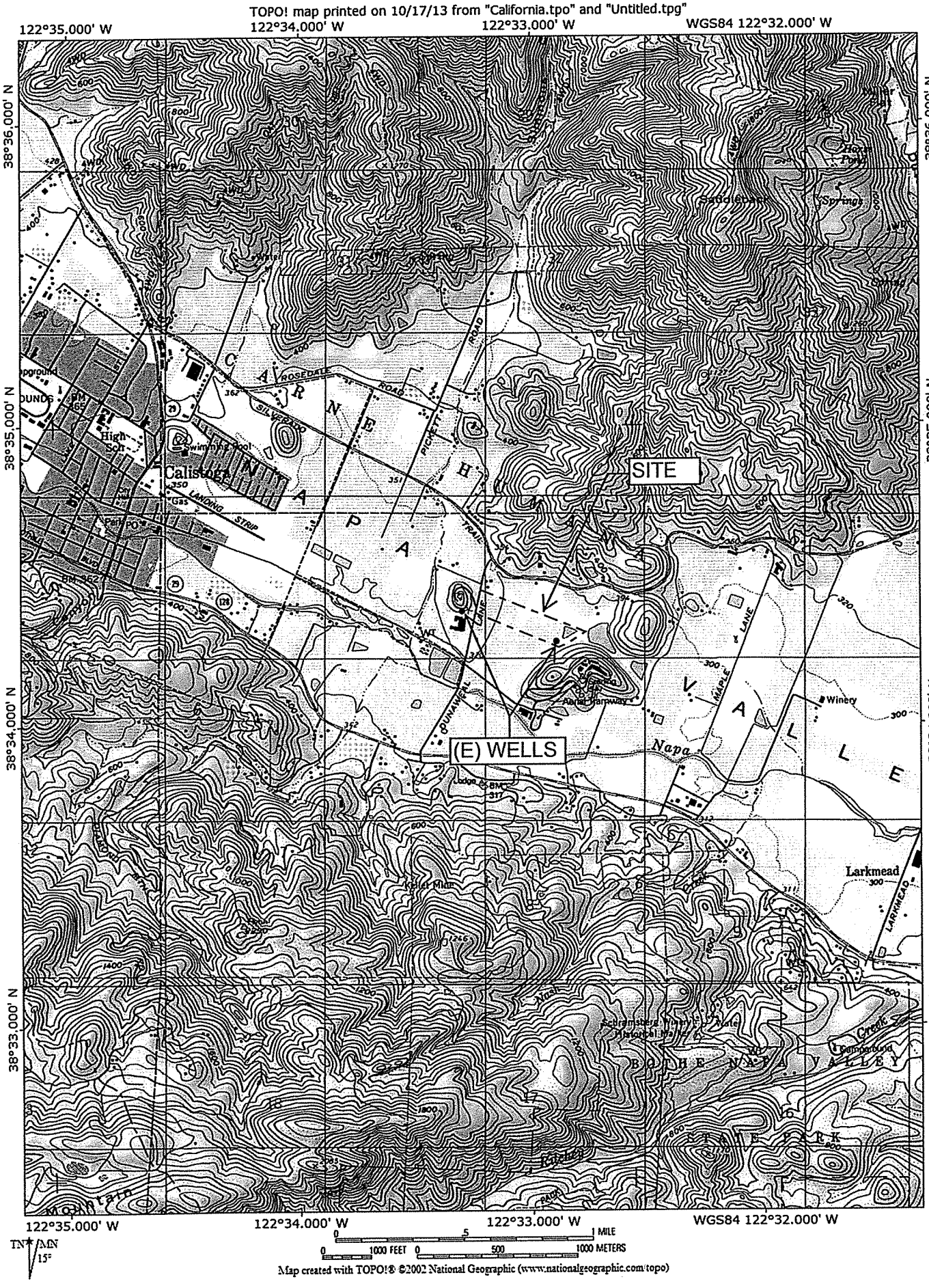
CLOS PEGASE DOMESTIC TOTAL 213,000 0.6537

PHASE ONE WATER AVAILABILITY
GIRARD WINERY USE PERMIT
Date: 11/24/2014
Revised: 03/26/2015

WINERY PROCESSING
GROUNDWATER USE

GIRARD WINERY			
PRODUCTION	=	200,000	GALLONS WINE PER YEAR
PHASE 1 WAA WATER USE RATE	=	2.15	AC-FT/YR PER 100,000 GALLONS WINE PRODUCED
PHASE 1 WAA PROCESS USE	=	4.3	AC-FT/YEAR
PROJECTED PROCESS USE	=	**2.93**	**AC-FT/YR.** (BASED ON WATER USE AT EXISTING GIRARD OPERATION) (NUMBER CONSISTENT WITH WASTEWATER FEASIBLITY STUDY)

CLOS PEGASE WINERY			
PRODUCTION	=	200,000	GALLONS WINE PER YEAR
PHASE 1 WAA WATER USE RATE	=	2.15	AC-FT/YR PER 100,000 GALLONS WINE PRODUCED
PHASE 1 WAA PROCESS USE	=	4.3	AC-FT/YEAR
PROJECTED PROCESS USE	=	**2.93**	**AC-FT/YR.** (BASED ON WATER USE AT EXISTING CLOS PEGASE OPERATION) (NUMBER CONSISTENT WITH WASTEWATER FEASIBLITY STUDY)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122°34.000' W
122°33.000' W
WGS84 122°32.000' W
38°36.000' N
38°35.000' N
38°34.000' N
38°33.000' N
SITE
(E) WELLS
Calistoga
High Sch
Swimming Pool
Fair PO
Gas
Aerial Tramway
Winery
Larkmead
Napa
Ridge
Mountain
MILE
1000 FEET
500
1000 METERS
TN
MN
15°
Map created with TOPO!® ©2002 National Geographic (www.nationalgeographic.com/topo)

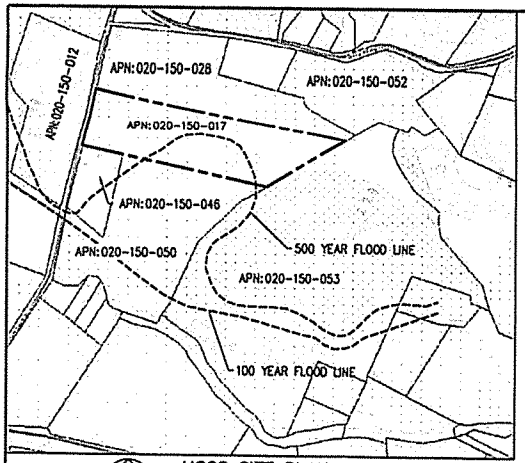
GIRARD WINERY

1077 Dunaweal Ln.

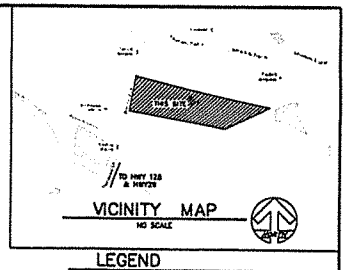
Calistoga, California 94515

APN 022-150-017

USE PERMIT APPLICATION



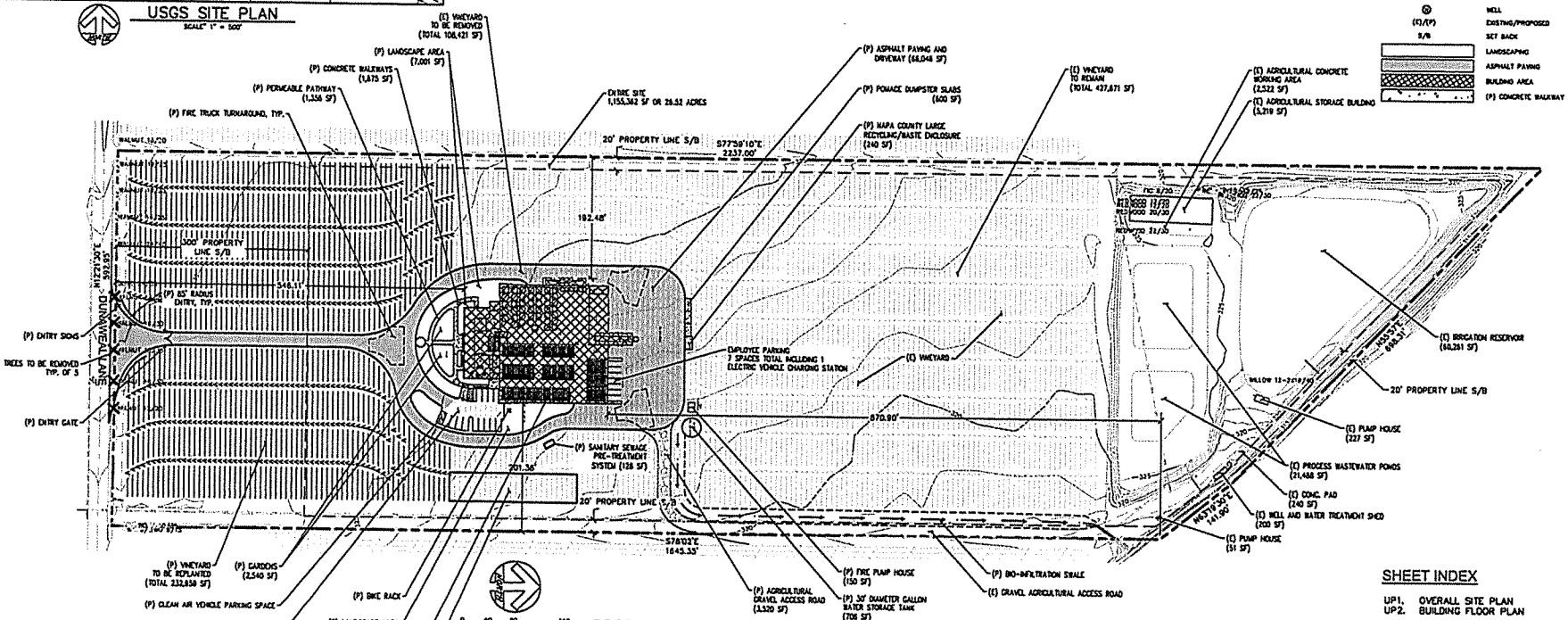
USGS SITE PLAN
SCALE: 1" = 500'



VICINITY MAP
NO SCALE

LEGEND

- APPROXIMATE PROPERTY LINE
- FENCE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL DRIVEWAY
- DRAINAGE COURSE FLOWLINE
- WINDROW
- OVERHEAD UTILITIES
- SETBACK
- 100 YEAR FLOOD PLAIN
- 500 YEAR FLOOD PLAIN
- 5 FOOT INDEX 1' INTERVAL CONTOURS
- WELL
- (E)/(P) EXISTING/PROPOSED
- S/B SET BACK
- LANDSCAPING
- ASPHALT PAVING
- BUILDING AREA
- (P) CONCRETE WALKWAY



PROPOSED OVERALL SITE PLAN
SCALED 1" = 80'

OWNER/APPLICANT
VINTAGE WINE ESTATES
205 CONCOURSE BLVD.
SANTA ROSA, CA 95403
CONTACT: PAT ROney
PH. (877) 288-9463

ARCHITECT
DEL STARRETT ARCHITECT
181 CONCOURSE BLVD., SUITE A
SANTA ROSA, CA 95403
CONTACT: DEL STARRETT
PH. (707) 528-8643

LANDSCAPE ARCHITECT
PARKER SMITH LANDSCAPE ARCHITECT
1845 PIMER RD. #23
SANTA ROSA, CA 95403
PH. (707) 477-7502

ARCHITECT
ALWAYS ENGINEERING INC.
131 STONY CIRCLE, SUITE 1000
SANTA ROSA, CA 95401
CONTACT: BEN MONROE
PH. (707) 542-8795

Grading Quantities:
Site Grading is based upon subgrade to existing grade. No account has been taken for stripping, expansion or contraction. Volumes should be verified and determined independently by the Contractor.

	CUT:	ENGINEERED FILL:	NET:
TOTAL EARTHWORK:	2,172 CY	4,034 CY	1,863 CY (FILL)

TOTAL DISTURBED AREA = 3.59 ACRES

Note: Excess spoils will be disposed of in a county approved site or spread in onsite vineyards. Temporary grading spoils will be stockpiled onsite in the unplanted vineyard area until ready for use.

SHEET INDEX

REGISTERED PROFESSIONAL ENGINEER BENJAMIN MONROE No. 084428 STATE OF CALIFORNIA CIVIL

NO.	REVISION	DESCRIPTION	BY	DATE

Always Engineering, Inc.
Civil Engineering & Topographic Surveying
131 Stony Circle, Suite 1000
Santa Rosa, CA 95401
Ph. (707) 542-8795
www.alwaysengr.com JasonH@Alwaysengr.com

Prepared for: GIRARD WINERY
1077 DUNAWEAL LN., CALISTOGA, CA

Prepared on: February 13, 2014

USE PERMIT
OVERALL SITE PLAN
1077 DUNAWEAL LN., CALISTOGA, CA
APN:020-150-017

JOB# 13530

SHEET UP1 OF UP2

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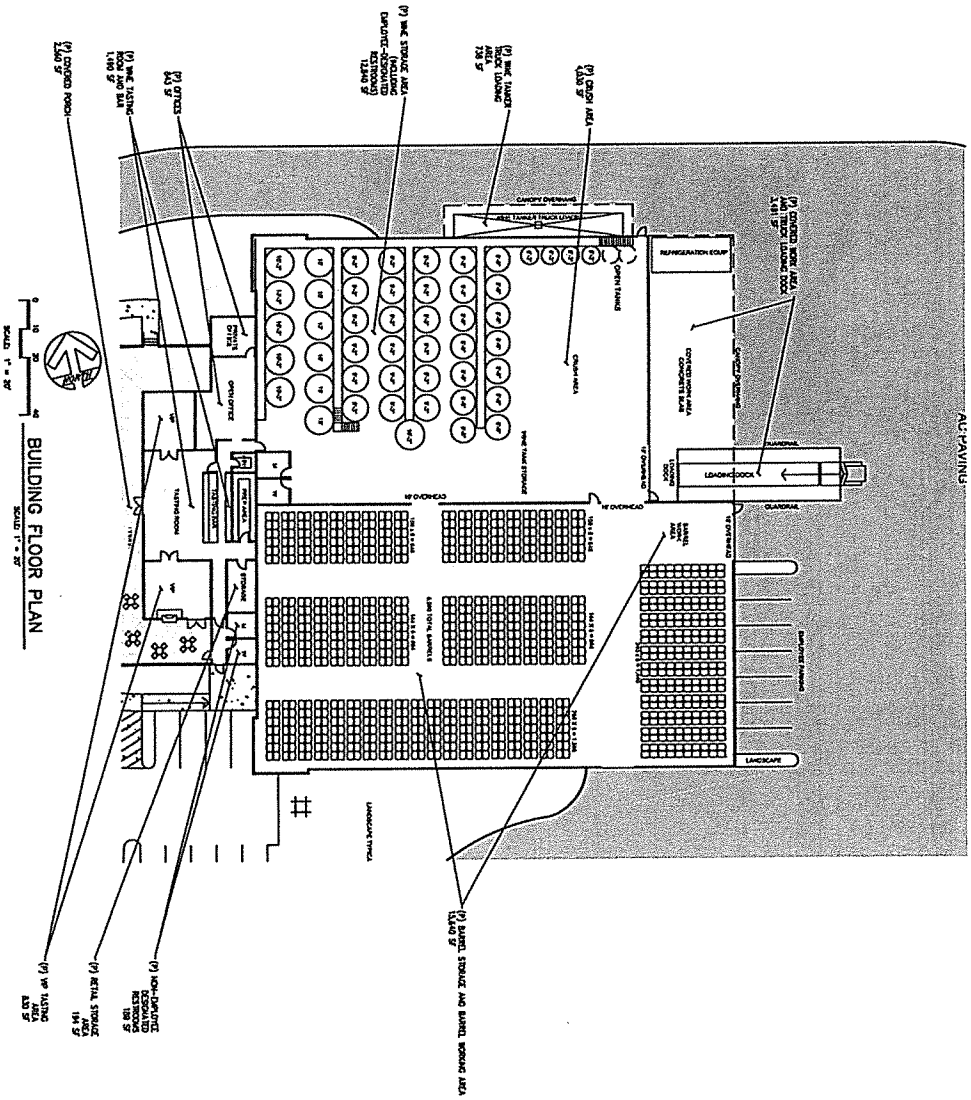
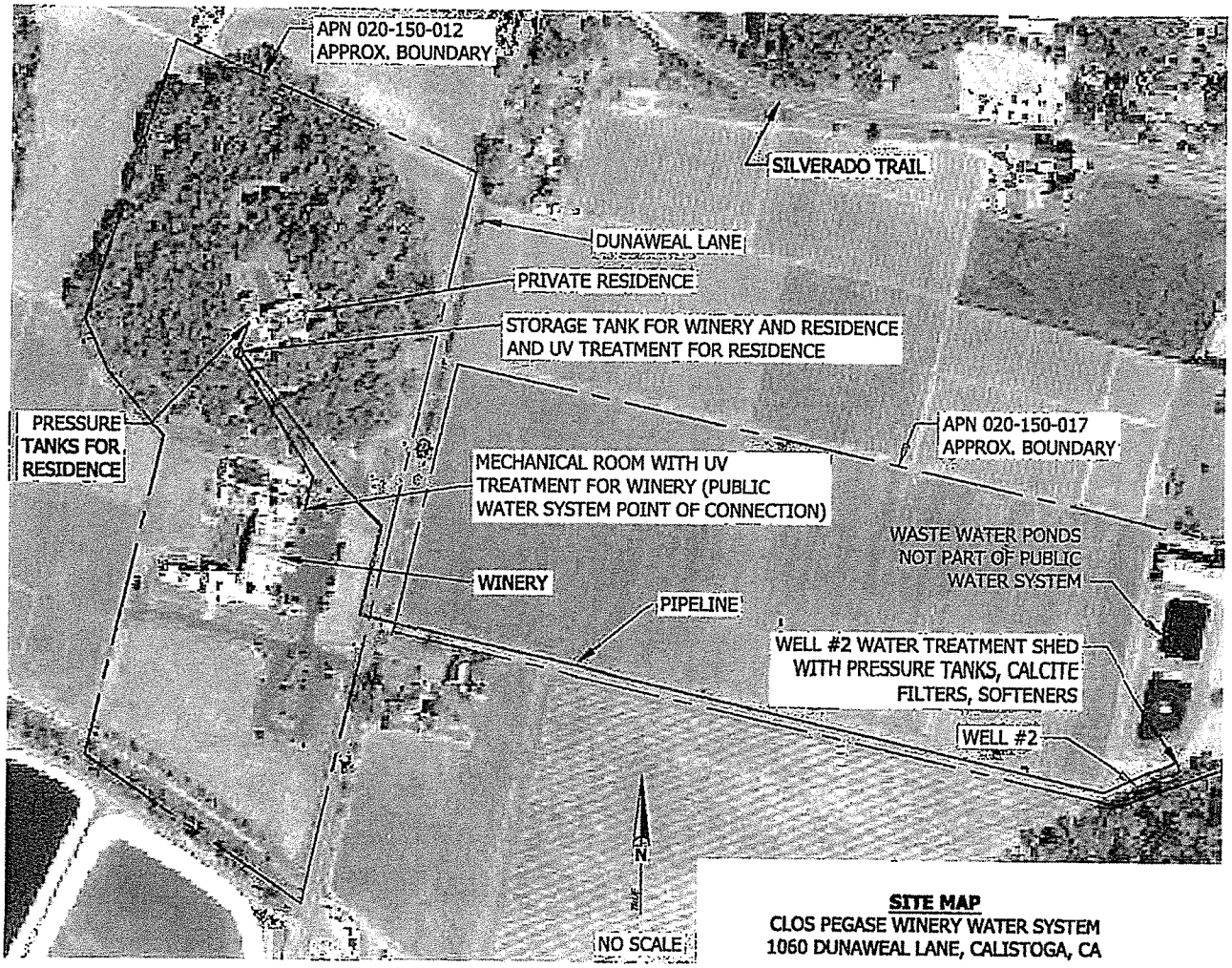
 When printed: Feb 13, 2014 – 1:32:16PM File=UP-140122.dwg



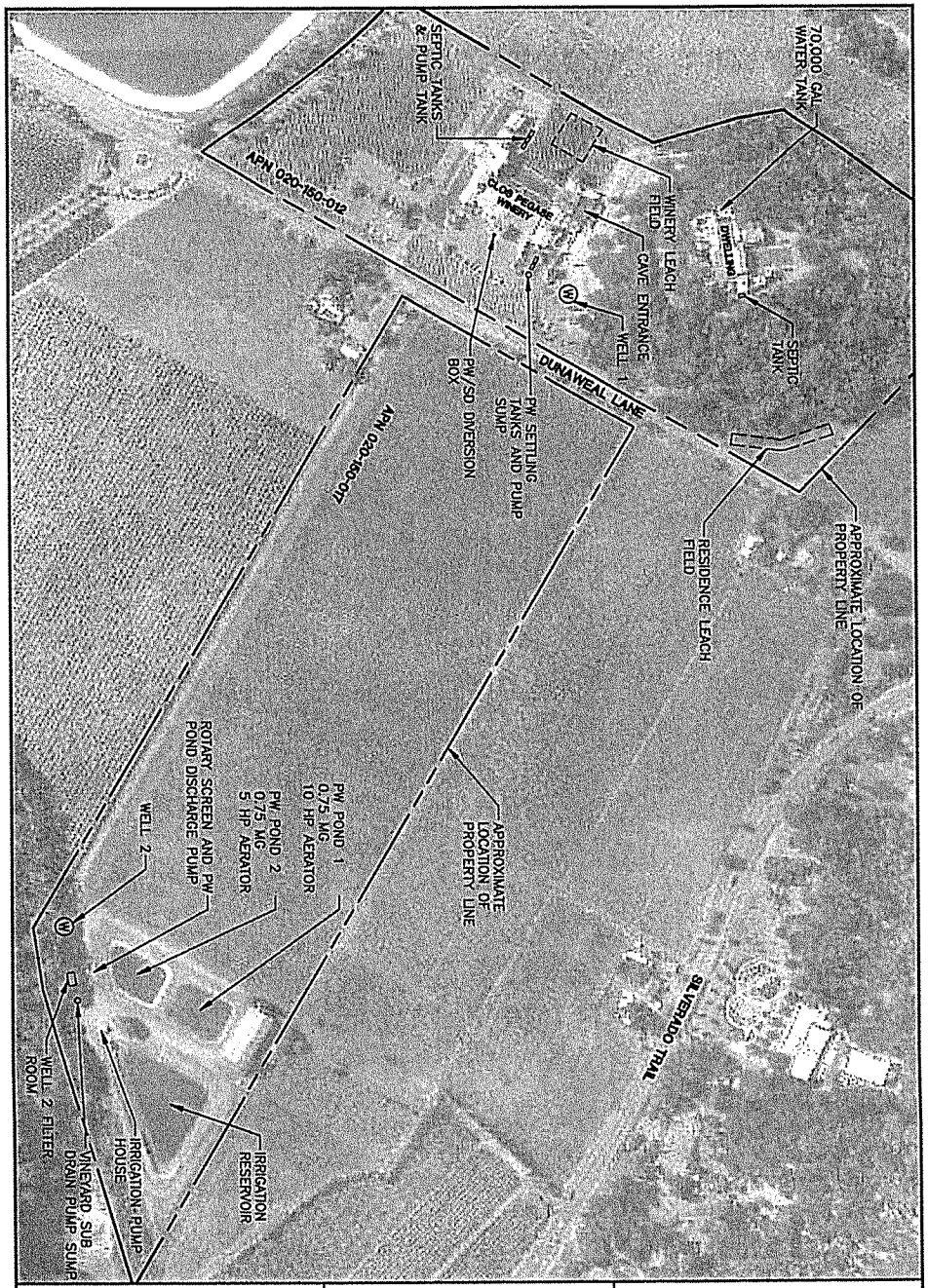
SHEET UP2 OF UP2	USE PERMIT BUILDING FLOOR PLAN 1077 DUNAWEAL LN., CALISTOGA, CA APN:020-150-017	Prepared for: GIRARD WINERY 1077 DUNAWEAL LN., CALISTOGA, CA Prepared on: February 13, 2014	Always Engineering, Inc. Civil Engineering & Topographic Surveying 131 Stony Circle, Suite 1000 (707) 542-8795 Santa Rosa, CA 95401 Fax (707) 542-8798 www.alwayseng.com JasonH@alwayseng.com	REVISION / DESCRIPTION / BY / DATE	



SITE MAP
CLOS PEGASE WINERY WATER SYSTEM
1060 DUNAWEAL LANE, CALISTOGA, CA

PLOTTED ON: 11/7/2011 2:59 PM

P:\PROJECT\2011\2011136 CLOS PEGASE WINERY-- DUE DILIGENCE\CAD\WWWATER\OVERALL SITE PLAN.DWG



CLOS PEGASE WINERY **1060 DUNAWEAL LANE** **CALISTOGA, CA 94515** **APN: 020-150-012, 017**	**OVERALL SITE PLAN** PROJECT NO 2011136 DATE 11-07-2011 BY KQ CHK AS SHT NO 1 OF 1	SUMMIT ENGINEERING INC. 463 AVIATION BLVD. STE 200 SANTA ROSA, CA 95403 www.summit-er.com • 707.527.0775

FEE 120
RECEIPT NO. 28489
BY PB

A.P.# 20-150-17
RECORD # 3328

NAPA COUNTY
DEPT. OF ENVIRONMENTAL MANAGEMENT
APPLICATION & PERMIT TO CONSTRUCT A WATER WELL

NAME Clos Pegase Winery (Owner) ADDRESS 1060 Dunaweal (Job Location)

NAME Pulliam Well Drilling (Well Driller) PHONE # 224 9396 ADDRESS

TYPE OF WORK
New Class I PERMIT ____ Test Hole Date Called In 4/30/91 /5/7/91
New Class II PERMIT X U.S.G.S. Map Received
Well Reconstruction ____ Well Deepening ____ Horizontal Well ____
Well Destruction ____ High Hazard ____ Low Hazard ____ Hand Dug ____

PROPOSED USE
DOMESTIC ____ IRRIGATION ____ INDUSTRIAL X (MW) MUNICIPAL ____
TEST WELL ____ HOT WATER ____ (D.O.G. Clearance ____) OTHER ____

Sewage Disposal System (existing or proposed) Public ____ Individual ____ Private X
Distance from well to any part of nearest sewage disposal system Septic System Location Determined By: Well Driver - Ponte 150 LF feet.
Plot plan of well location received Yes County road setback 210 ft. from centerline.

WORKER'S COMPENSATION COVERAGE: (Check one of the following)
____ A certificate of current Worker's Compensation Insurance coverage is presently on file with this office.
I A certificate of current Worker's Compensation Insurance is being filed with this application.
____ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Worker's Compensation laws in California.

****

TERMS OF PERMIT

) Call at least 24 hours in advance to schedule an inspection.
) Prior to receiving a Final Clearance on the well, a copy of the Department of Water Resources "Water Well Drillers Report" (DWR-188) must be returned to our Department.
ld Wells to be Destroyed:
ther Remarks:

Bret Pulliam
Signature of Applicant

Date

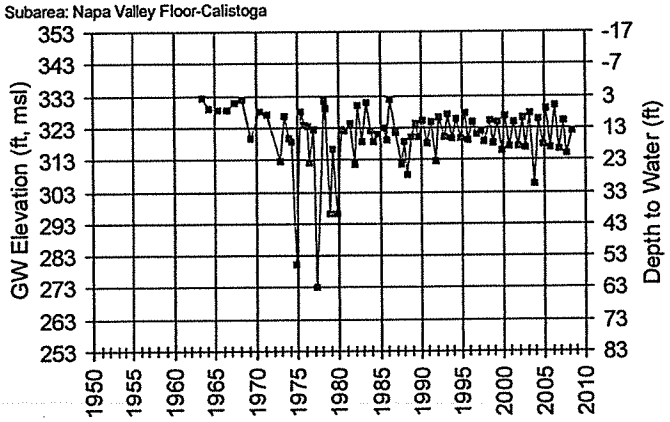
****

FOR OFFICE USE ONLY

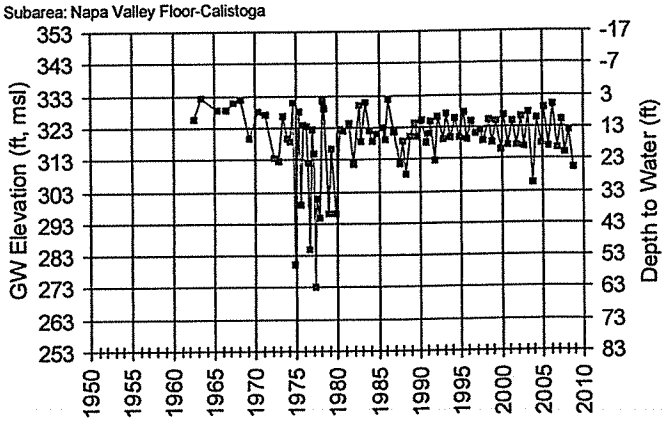
	Date	By	Remarks
City Clearance			
Pub. Works Clearance			
Pre-Inspection			
Class II Approval	5/2/91		See attached Cat. Exemption from Planning
Permit Issued	5/7/91		"
Const. Insp.	5/10/91		Completed 12" hole, 5" casing. Seal to 54.3' OK annular seal
Well Log Rec.			
Final Insp.			

White-Office Yellow-Owner Pink-Contractor
EHM Form Letter#6 / 12-14-88

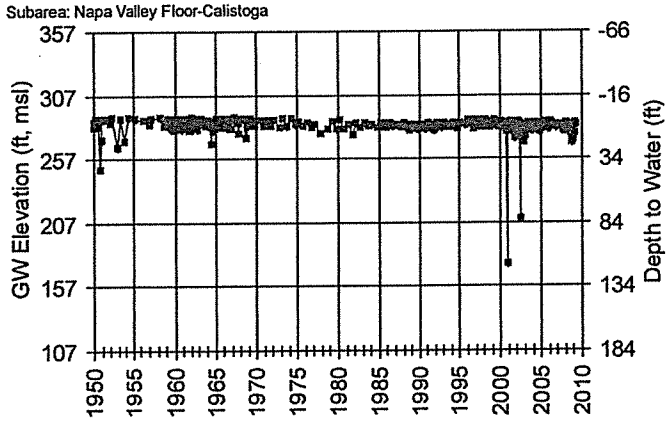
WellID: 08N06W06L004M RPE: 336 ft, msl
SWN: 008N006W06L004M Source: DWR
Subarea: Napa Valley Floor-Calistoga



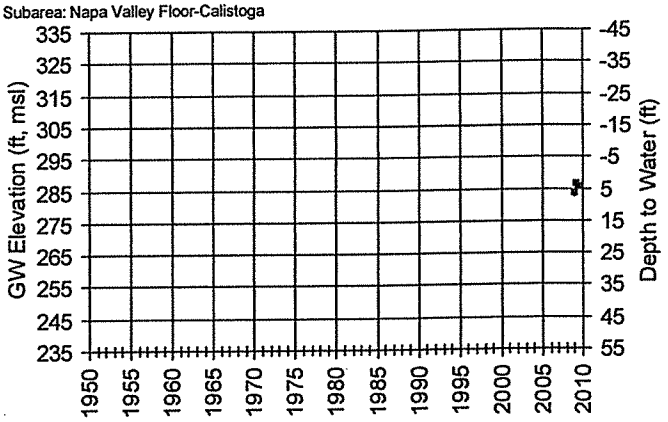
WellID: NapaCounty-129 RPE: 336 ft, msl
SWN: 008N006W06L004M Source: NapaCounty
Subarea: Napa Valley Floor-Calistoga



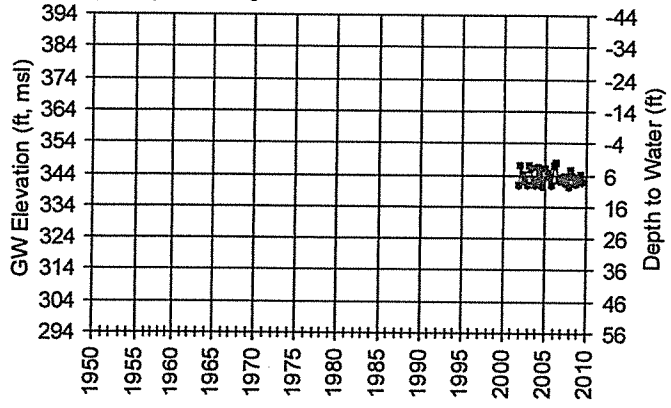
WellID: 08N06W10Q001M RPE: 290.6 ft, msl
SWN: 008N006W10Q001M Source: DWR
Subarea: Napa Valley Floor-Calistoga



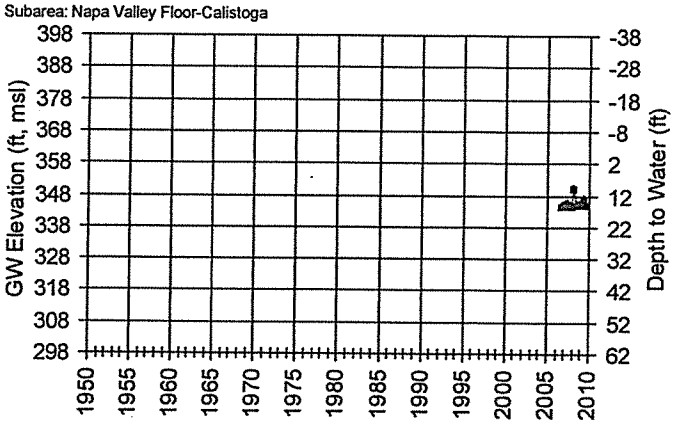
WellID: T0605500272MW-2 RPE: 289.79 ft, msl
SWN: Unknown Source: Geotracker
Subarea: Napa Valley Floor-Calistoga



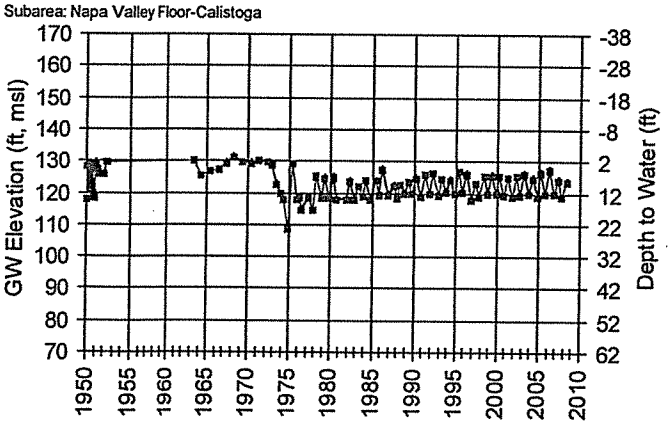
WellID: T0605500136MW-10 RPE: 349.54 ft, msl
SWN: Unknown Source: Geotracker
Subarea: Napa Valley Floor-Calistoga



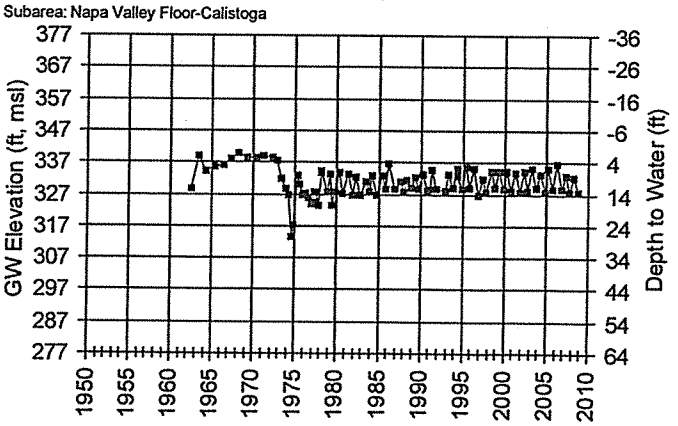
WellID: T0605500250MW-6 RPE: 360.46 ft, msl
SWN: Unknown Source: Geotracker
Subarea: Napa Valley Floor-Calistoga



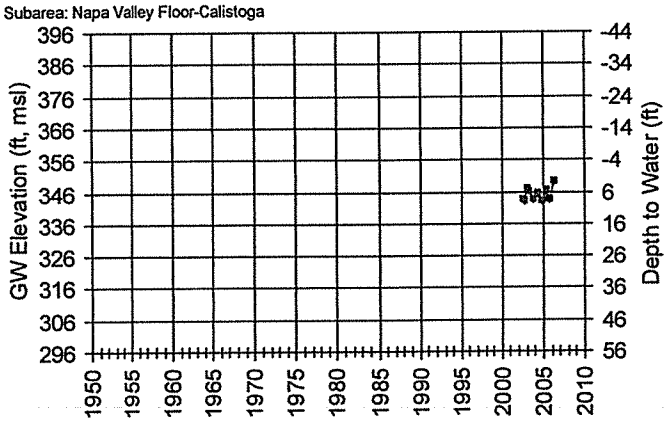
WellID: 09N06W31Q001M RPE: 132.2 ft, msl
SWN: 009N006W31Q001M Source: DWR
Subarea: Napa Valley Floor-Calistoga



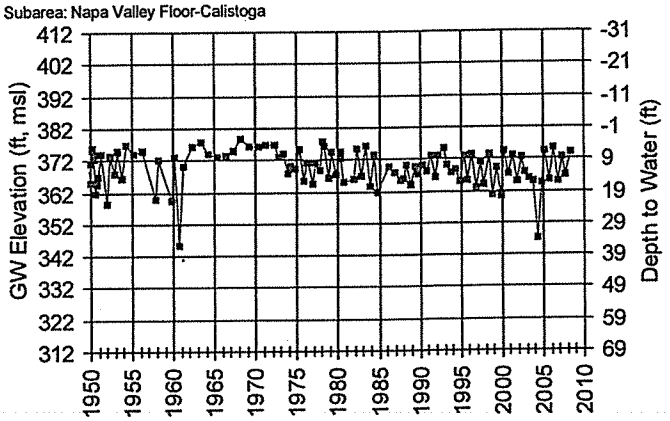
WellID: NapaCounty-128 RPE: 341 ft, msl
SWN: 009N006W31Q001M Source: NapaCounty
Subarea: Napa Valley Floor-Calistoga



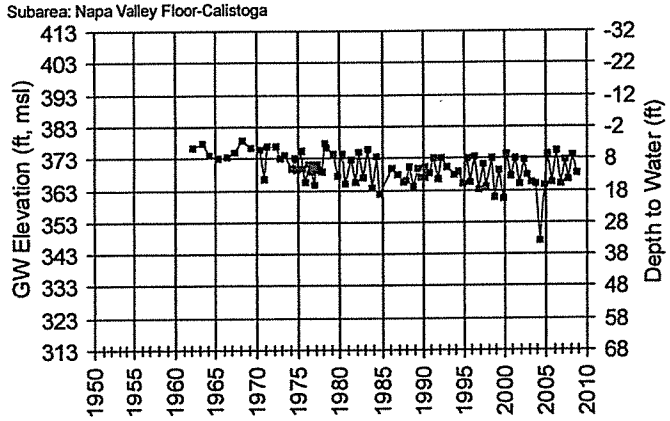
WellID: T0605500029MW-3 RPE: 351.6 ft, msl
SWN: Unknown Source: Geotracker
Subarea: Napa Valley Floor-Calistoga



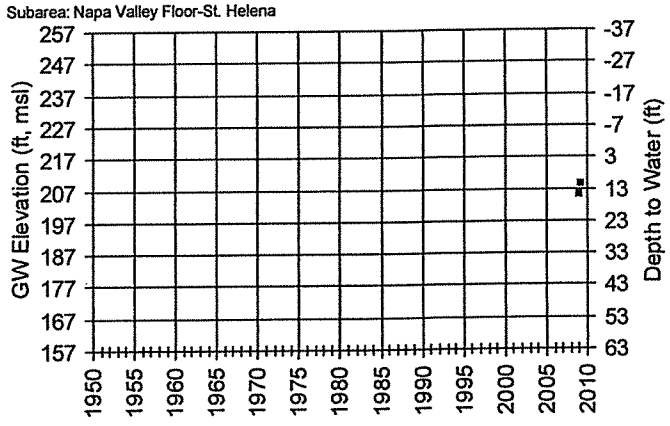
WellID: 09N07W25N001M RPE: 381 ft, msl
SWN: 009N007W25N001M Source: DWR
Subarea: Napa Valley Floor-Calistoga



WellID: NapaCounty-127 RPE: 381 ft, msl
SWN: 009N007W25N001M Source: NapaCounty
Subarea: Napa Valley Floor-Calistoga



WellID: SL0605506371MW-4 RPE: 219.87 ft, msl
SWN: Unknown Source: Geotracker
Subarea: Napa Valley Floor-St. Helena



13530.0 Girard Winery
Winery Use Permit
Water System Feasibility
February 21, 2014
Revised: March 26, 2015

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Stacey Harrington
Napa County Planning, Building, and Environmental Services
Department of Environmental Management
1195 3rd St. Room 101
Napa, Ca

Project: Girard Winery – New Winery and Tasting Room Use Permit
Water System Feasibility
1077 Dunaweal Lane
Calistoga, CA 94515
APN: 020-150-017

Stacey,

This letter is provided in support of the Girard Winery Use Permit application to construct a new onsite winery and tasting room. Specifically, this letter shall provide preliminary information with respect to the Technical, Managerial and Financial Capacity of the winery to operate the proposed system.

PROJECT AND SITE BACKGROUND

Vintage Wine Estates owns and operates the existing "Clos Pegase" water system (ID # 28-01007) located at 1060 Dunaweal Ln in Calistoga, Ca (APN: 020-150-017). The system is currently regulated as a Transient Non-Community water system. Attached please find the cover page of the most recent water system permit application dated February 3, 2014.

Vintage Wine Estates is applying for a Use Permit to construct a new winery and tasting room onsite; the Girard Winery. With the Use Permit, it is proposed to also serve water to the proposed Girard Winery using the same system. A new supply main, storage tank, booster pump, and distribution system will be required.

The existing water system permit will need to be updated to include additional piping and service connections for the Girard Winery, as well as any additional documents which must be updated as a result.

WATER SYSTEM NAME

The water system shall be known as:

The Clos Pegase and Girard Wineries Water System

REPORT PREPARATION

Always Engineering, Inc.
Civil Engineering & Topographic Surveying
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Santa Rosa, CA 95401 Fax (707) 542-8798
www.alwayseng.com JasonH@alwayseng.com

This report was prepared for Girard Winery by Ben Monroe, P.E. of Always Engineering, Inc. Questions or comments regarding the content of this report should be directed to:

Ben Monroe
Always Engineering, Inc.
131 Stony Circle, Suite 1000
Santa Rosa, Ca 95401
Office: (707) 542-8795 x17
Cell: (707) 318-7099
BenM@alwayseng.com

TECHNICAL CAPACITY

A. System Description

The existing water system for Clos Pegase Winery consists of the following features; one active onsite well on the Girard parcel (Well #2), and one active well on the Cls Pegase parcel (Well #1), pressure tanks, sediment filter, softeners, 58,000 gallon storage tank, pressure tanks, ultraviolet disinfection, and potable use. Well #2 is located on 1077 Dunaweal Lane, Calistoga (APN: 020-150-012). Well #1 is located on 1060 Dunaweal Lane, Calistoga (APN 020-150-017). Both wells supply the currently permitted water system.

A water system schematic is attached.

B. Source Adequacy Assessment and Evaluation

The Clos Pegase and Girard Wineries Water System is sized for ultimate build-out of the parcel and therefore the supply and demand, and infrastructure is expected to be sufficient for at least the next 10 to 20 years. In order to determine the adequacy of the water system, the volume of supply from each source and demand from each use is estimated and evaluated on the following pages:

a. Supply Capacity Assessment

The proposed source for the Water System is as follows:

- Source 1: Well #2
- Source 2: Well #1

Well #2 produces approximately 23 gpm per the well logs, but the current pump supplies 18 gpm. Well #1 produces approximately 5 gpm. A copy of the well log are on file with the County and can be provided upon request. There is one additional onsite well which is not used. No surface water is used in the system and therefore the Surface Water Treatment Rule does not apply.

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Therefore, the current available supply for the domestic uses onsite is approximately 23 gpm. Evaluating just Well #2, an 18 gpm supply is sufficient to supply 1,080 gallons an hour which is sufficient to supply 8,640 gallons over 8 hours or 25,920 gallons operating for 24 hours a day. This is capable of producing 9,460,800 gallons when operating for 24 hours a day, for 365 days a year.

b. *Demand Assessment*

Onsite water use demand from the system is from the following uses:

Clos Pegase and Girard Wineries

- Winery Processing
- Winery Employees
- Wine Tasting
- Wine Events

All vineyard irrigation is provided by the onsite reservoir pond. Wells No.1 and No. 2 are dedicated to potable uses only.

Demand from each winery is presented below:

Clos Pegase

Winery Process Amended Permit Application

Annual Use	=	920,000 gal/year
Peak Harvest Day	=	5,759 gpd

Winery and Residence Domestic Use

Annual Use (assumes peak day 365 days/year)	=	651,702 gal/year
Peak Day	=	1,785 gpd

Therefore the total water demand for the Clos Pegase is calculated:

Peak Daily Demand

Winery PW + Winery Domestic + Residence	=	7,544 gpd

Annual Demand

Winery PW + Winery Domestic + Residence	=	1,517,702 gal

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Girard Winery

Winery Process

Annual Use	=	920,000 gal/year
Peak Harvest Day	=	5,759 gpd

Winery Domestic

Peak Day	=	1,675 gpd
Annual Use	=	611,375 gal/year

Therefore the total water demand for the Girard Winery is calculated:

Peak Daily Demand		
Winery PW + Winery Domestic	=	7,434 gpd
Annual Demand		
Winery PW + Winery Domestic	=	2,183,077 gal

Landscape Irrigation

Landscape Irrigation is provided by irrigation reservoir which is supplied by treated process wastewater, rainwater, and vineyard sub drain water, and therefore does not impact the public water system demands.

TOTAL WATER DEMAND

For the purposes of simplifying this analysis, all peak water uses are assumed to occur on the same day. This is not the case, as peak winery use only occurs during the months of harvest (Sept – Oct) and typically does not overlap with events. Given the above water demands, the peak water use for the Clos Pegase and Girard Wineries is estimated as follows:

Peak Daily Water Demand

Peak flows are estimated as follows:

Peak Daily Demand for Clos Pegase + Peak Daily Demand for Girard =

7,544 gpd	+	7,434 gpd	=	14,978 gpd

As demonstrated above, the Well No. 2 can produce 25,920 gpd alone and is more than sufficient to supply water to meet the peak onsite daily uses. The well will only have to operate for 832 minutes (13.8 hours) to provide this volume of water for the peak day. A storage tank

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of sufficient volume will be provided for the proposed Girard Winery. A booster pump system will meet the peak hourly use from this tank.

Annual Water Demand

Annual demand for the Clos Pegase and Girard Wineries is the summation of all onsite annual average use and is calculated as follows:

Winery PW + Winery Domestic +Residential	=	
1,840,000 gal + 1,263,077 gal + 325,851 gal	=	3,428,928 gal

The well only needs to operate for a period of approximately 125 days (3,020 hours) in order to supply water for the entire year.

This analysis assumes winery peak domestic uses occur 365 days a year, which will not be the case.

c. Water Quality Assessment

Previous testing indicates that the water is of good quality. Sediment filters, pH adjustment, water softening, and Ultraviolet disinfection are the only treatment components provided. The existing Wells have been sampled and only requires treatment to remove hardness. If required, a current sample will be collected and submitted for testing.

A review of all parcels within 500' of the property line has been done to identify any potential hazardous spills. A map is provided to demonstrate this. There are no spills within 500' on any adjacent parcels

d. Consolidation Feasibility

It is proposed to connect to the Clos Pegase Winery to supply Girard Winery, as described in this report.

MANAGERIAL CAPACITY

A. Ownership

The parcel and water system is owned by a Vintage Wine Estates, with Pat Roney being the corporate officer. A copy of the Deed of Trust for the parcel can be submitted to the County to document this. Vintage Wine Estates also owns and operates the existing public water system

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for Clos Pegase Winery, Cosentino Winery, Viansa Winery, and Ray's Station Winery among others.

B. Organization

The Clos Pegase and Girard Wineries Water System will be operated by Eric Pilotti, the Clos Pegase Water System Manager. Mr. Pilotti reports directly to the Clos Pegase General Manager, Samantha Rudd. Ms. Rudd reports directly to Mr. Roney. Mr. Pilotti has experience operating the water system at the Clos Pegase water system for 28 years. In the event that Mr. Pilotti is not available during a water system emergency, Glen Hugo the Girard winemaker shall be responsible for water system operation. Vintage Wine Estates will contract out for all legal, engineering, and maintenance of the water system.

C. Water Rights

The Owner's water rights to the groundwater sources have been demonstrated by a copy of the Deed of Trust for the Parcel on file at the County. The parcel is not located within a groundwater basin that has been classified as being in overdraft, or subject to groundwater adjudication procedures.

D. Emergency/Disaster Response Plan

A complete Emergency/Disaster Response Plan has been submitted to the Napa County office of Environmental Management (NCEM) for the Clos Pegase Winery Water System. An updated plan will be generated when the Girard Winery Water System is designed

FINANCIAL CAPACITY

A. Budget Projection

Vintage Wine Estates, Clos Pegase, and Girard Wineries are not currently encumbered by any judgments, liens, or other financial liability that would prevent operation of the Clos Pegase and Girard Wineries Water System. The majority of the system components are already installed with the exception of the new storage tank, booster pump, and distribution to Girard. Purchase and installation of these components for the system is projected to cost approximately $50,000. Replacement of the entire treatment system is also expected to cost approximately $15,000. Approximately $6,000 per year and $30,000 for the first five years will be required for operation of the Clos Pegase and Girard Wineries Water System. The costs of system maintenance and replacement will be covered by wholesale and retail wine sales.

We trust that this letter and attachments is sufficient to allow processing of the Girard Winery Use Permit for a new winery and tasting room. Please feel free to contact us with any additional questions, comments, or requirements.

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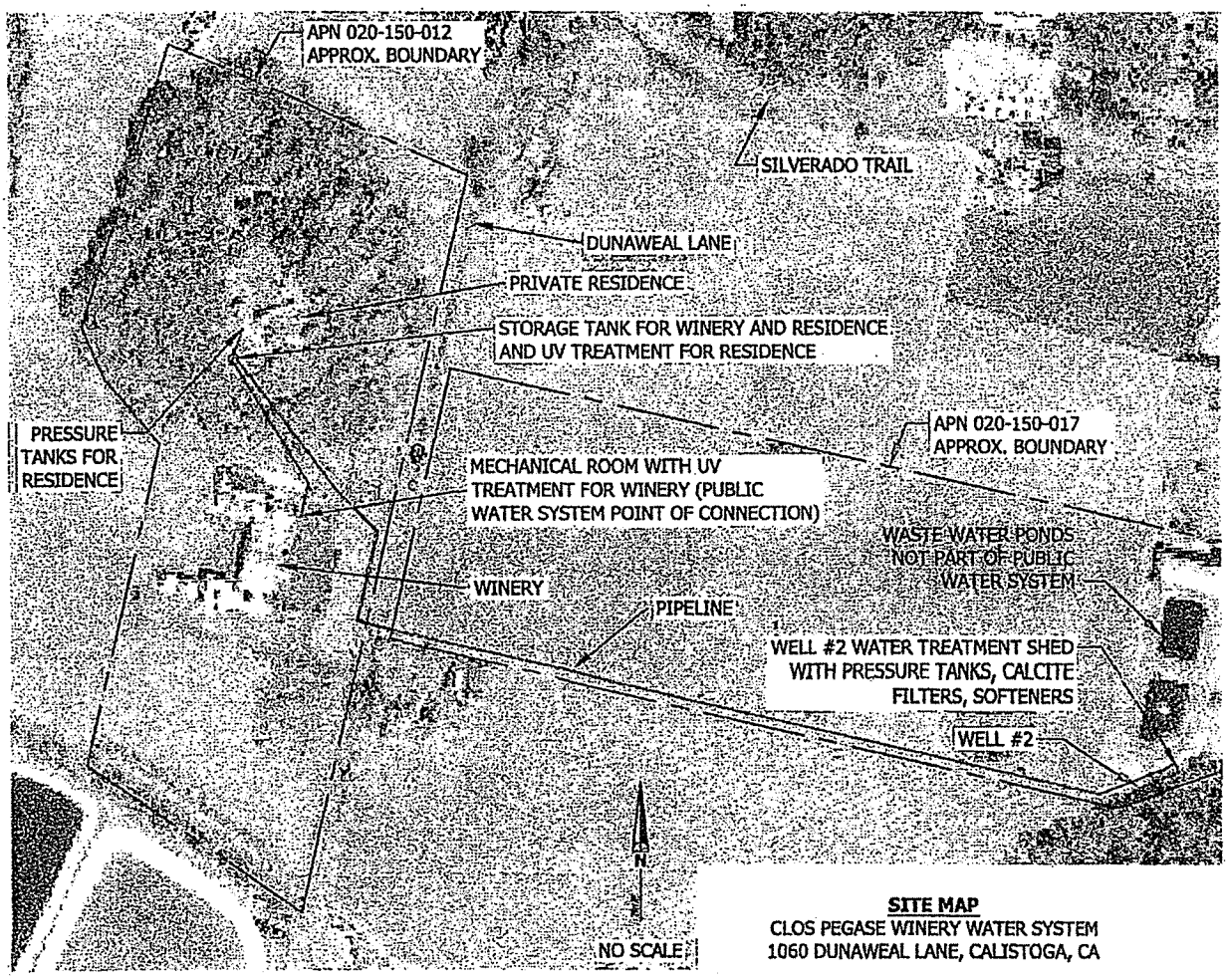
Sincerely,

Ben Monroe, P.E., QSD/QSP
ALWAYS ENGINEERING, INC.
Project Manager

Enclosures

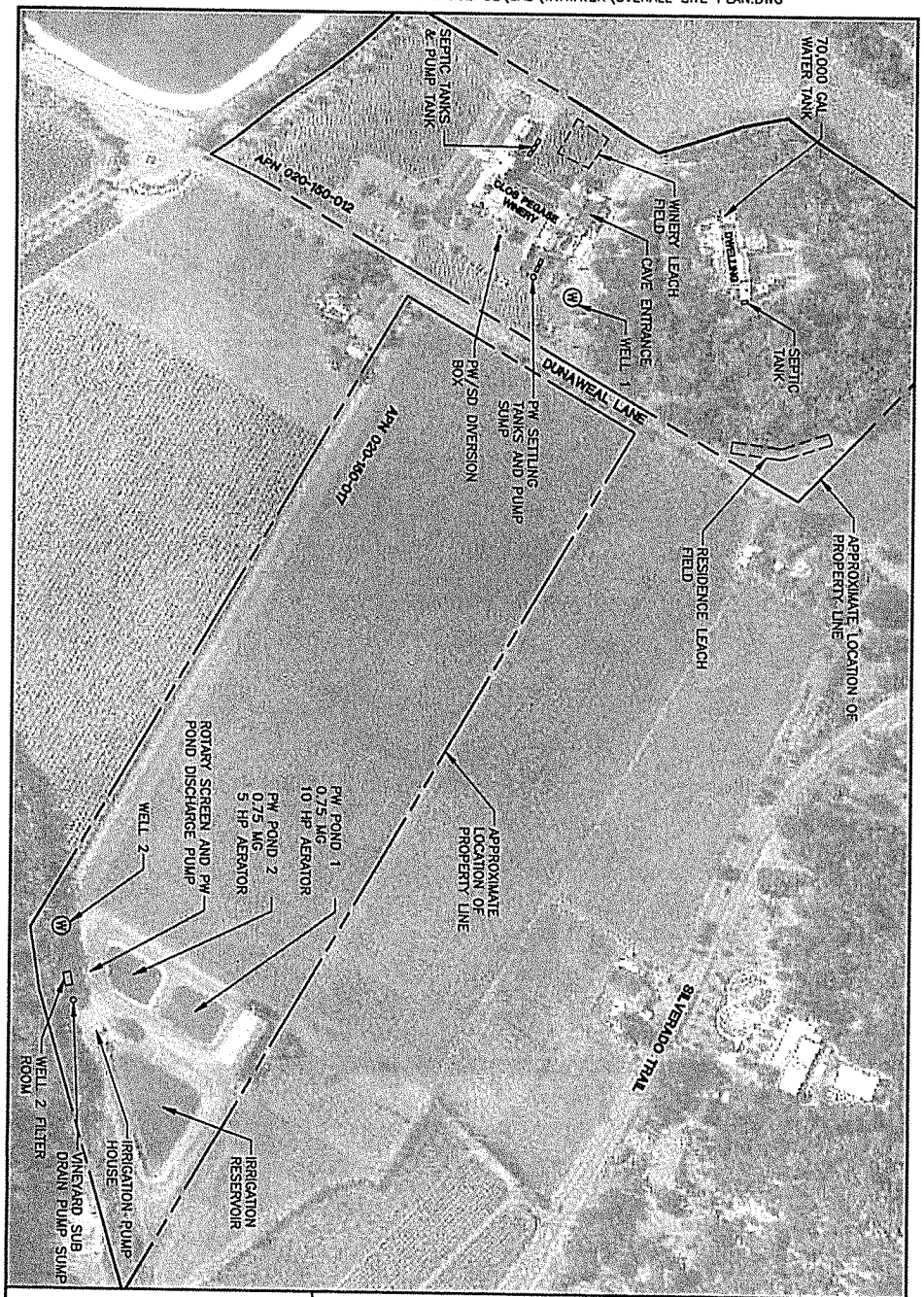
cc: Heather McCollister
Pat Roney (Vintage Wine Estates)



SITE MAP
CLOS PEGASE WINERY WATER SYSTEM
1060 DUNAWEAL LANE, CALISTOGA, CA

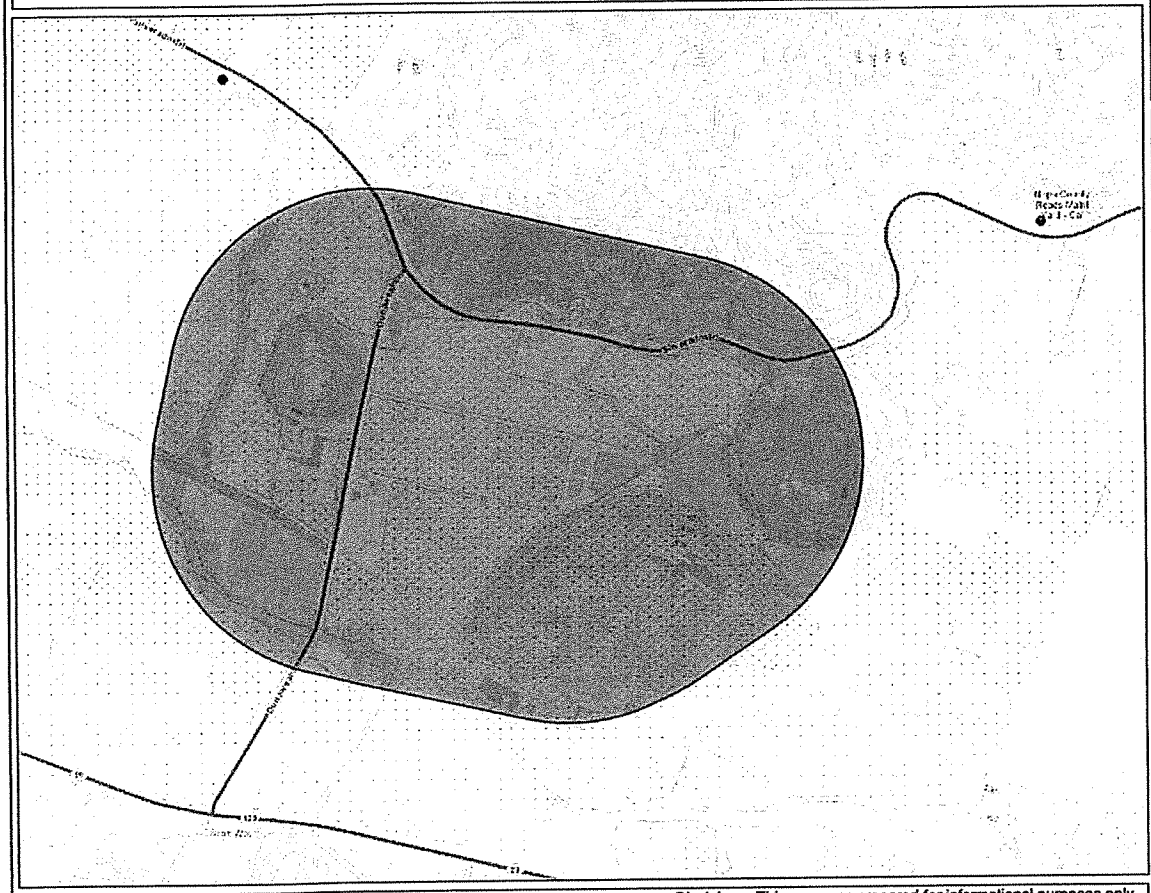
PLOTTED ON: 11///2011 2:39 PM

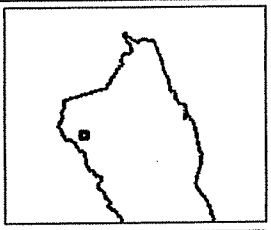
P:\PROJECT\2011\2011136 CLOS PEGASE WINERY- DUE DILIGENCE\CAD\WWWATER\OVERALL SITE PLAN.DWG



CLOS PEGASE WINERY **1060 DUNAWEAL LANE** **CALISTOGA, CA 94515** **APN: 020-150-012, 017**	**OVERALL SITE PLAN** PROJECT NO. 2011136 DATE 11-07-2011 BY KO CHK AS SHT NO 1 OF 1	SUMMIT ENGINEERING INC. 463 AVIATION BLVD. STE 200 SANTA ROSA, CA 95403 www.summit-er.com • 707.527.0775

County of Napa GIS





Legend

- HazMat Spills (LOP)
- HazMat Spills (Non-LOP)
- Corner Records
- County Boundary

2,572.3 0 1,286.15 2,572.3 Feet

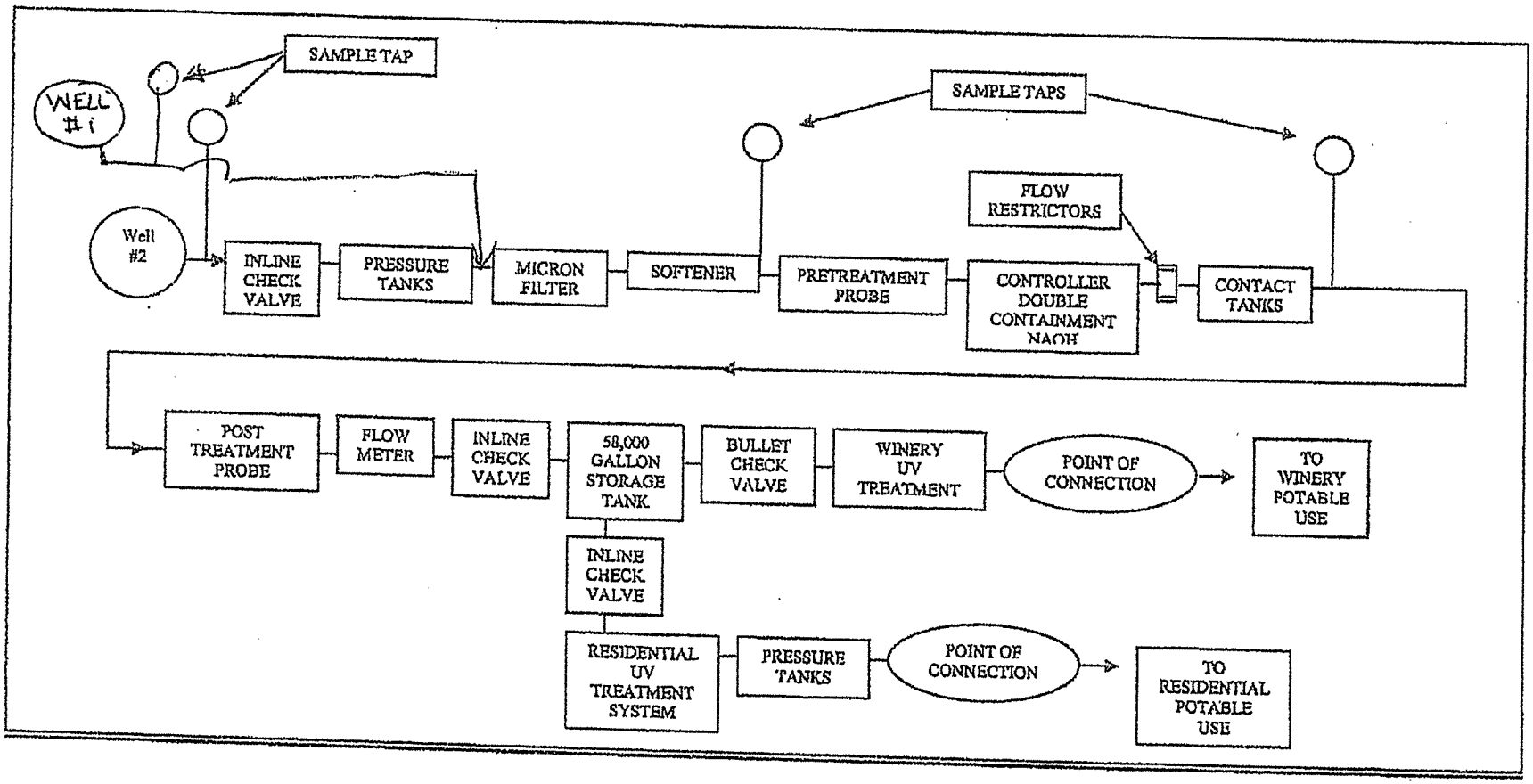
Disclaimer: This map was prepared for informational purposes only.
No liability is assumed for the accuracy of the data delineated hereon.

This map was printed on 11/6/2013

Notes

CLOS PEGASE WINERY WATER SYSTEM

SYSTEM SCHEMATIC



Planning, Building & Environmental Services

1195 Third Street, Suite 210
Napa, CA 94559
www.countyofnapa.org

Hillary Gitelman
Director

A Tradition of Stewardship
A Commitment to Service

March 22, 2013

CLOS PEGASE WINERY
JASON DUVAL
1060 DUNAWEAL LANE
CALISTOGA, CA 94515

Dear Water Purveyor,

Subject: Clos Pegase Water System Amendment (WS/484/PMT)

On March 7, 2013 an application was submitted for an amendment to the Clos Pegase Winery Water System located at 1060 Dunaweal Lane, Calistoga, CA 94515. At this time the application has been ***approved***. The permit to operate has been attached, please read the permit in its entirety and note that this permit amendment is an addendum to the previously issued permit and all conditions noted therein.

Please feel free to contact me if you have questions or comments regarding this notice at (707)251-1072.

Regards,

Jahniah McGill
Registered Environmental Health Specialist

STATE OF *CALIFORNIA*

DOMESTIC WATER SUPPLY PERMIT

Issued To

Clos Pegase Winery

28-01007

By

The Environmental Health Division of Planning, Building, and Environmental Services

PERMIT NO.: *484*

EFFECTIVE DATE: *3/21/2013*

WHEREAS:

1. ***Jason Duval*** on behalf of ***Clos Pegase Winery Water System*** submitted an application to the Division of Environmental Health on *3/7/ 2013* for an amendment to the Domestic Water Supply Permit issued to the ***Clos Pegase Winery Water System.***

2. The purpose of the amendment, as stated in the application, is to allow the ***Clos Pegase Winery Water System*** to make the following modifications to the public water system:

   *a) **Add sodium hydroxide injection for pH adjustment***
   *b) **Remove the Calcite filters***
   *c) **And a kinetic softener***

3. The ***Clos Pegase Winery Water System*** has submitted all of the supporting information required to evaluate the application.

4. The Division of Environmental Health has evaluated the application and the supporting material and has determined that the proposed modifications comply with all applicable State drinking water requirements.

THEREFORE:

1. The Napa County Department of Environmental Management hereby approves the application submitted by the ***Clos Pegase Winery Water System*** for a permit amendment. The Domestic Water Supply Permit issued to the ***Clos Pegase Winery Water System*** is hereby amended as follows:

   a) Sodium Hydroxide injection is approved for pH adjustment.

2. This permit amendment is subject to the following conditions:

   a) The only sources approved for potable water supply is as follows:

Source	PS Code	Status	Capacity	Comments
001	2801007-001	Disconnected	unknown	Well 1
003	2801007-003	Active	23 gpm	Well 2

Two-40 gallon Sanitron Ultra Violet water purifiers, both with 40 gpm flow restrictors, and an additional 40 gpm ultraviolet unit with a 20 gpm flow restrictor are approved as *precautionary* treatment for this water system. Replacement bulbs must be stored onsite at all times and an employee must be trained to replace the bulbs.

One sodium hydroxide injection unit using the filter cases for contact time to assist with pH adjustment

One Kinetico Softener is approved for the removal of iron and manganese.

A 58,000-gallon tank which is lined with a COOLPRO Polypropylene PP78 sanitary liner is approved for water storage.

b) Bacteriological and chemical tests shall be performed in compliance with the requirements of the California Drinking Water Standards, and the water system shall comply with all reporting requirements. See attached chemical testing schedules

Quarterly bacteriological reports from an approved lab must be submitted to this office no later than the 10th day following the end of the sampling period. The bacteriological samples shall be collected from the location specified on the Bacteriological Sample Siting Plan. The source chemical monitoring sampling must be completed as shown on the attached chemical testing schedule

c) The application states that the backwashing filter is plumbed to a sump which disposes to the processed wastewater ponds. This connection must be via an air gap to provide adequate backflow prevention.

d) The system is required to contact their local Pollution Prevention team and update the Hazardous Materials Business Plan (HMBP).

e) A pH sample must be submitted prior to treatment and post treatment to ensure that the pH levels are no longer corrosive in the distribution system.

f) No changes, additions, or modifications shall be made to the sources or treatment unless an amended water permit has first been obtained from the Department.

g) The **Clos Pegase Winery Water System** is operated and maintained in compliance with the California Safe Drinking Water Act.

h) This permit may be revoked or suspended for failure to comply with the California State Health and Safety Code, California Code of Regulations and Title 13 of the Napa County Code Relating to Wells and Water Supply Systems.

This permit supersedes all previous domestic water supply permits issued for this public water system and shall remain in effect unless and until it is amended, revised, reissued, or declared to be null and void by the Division of Environmental Health. This permit is non-transferable. Should the ***Clos Pegase Winery Water System*** undergo a change of ownership, the new owner must apply for and receive a new domestic water supply permit.

Any change in the source of water for the water system, any modification of the method of treatment as described in the Permit Report, or any addition of distribution system storage reservoirs shall not be made unless an application for such change is submitted to the Division of Environmental Health.

FOR THE Division of Environmental Health

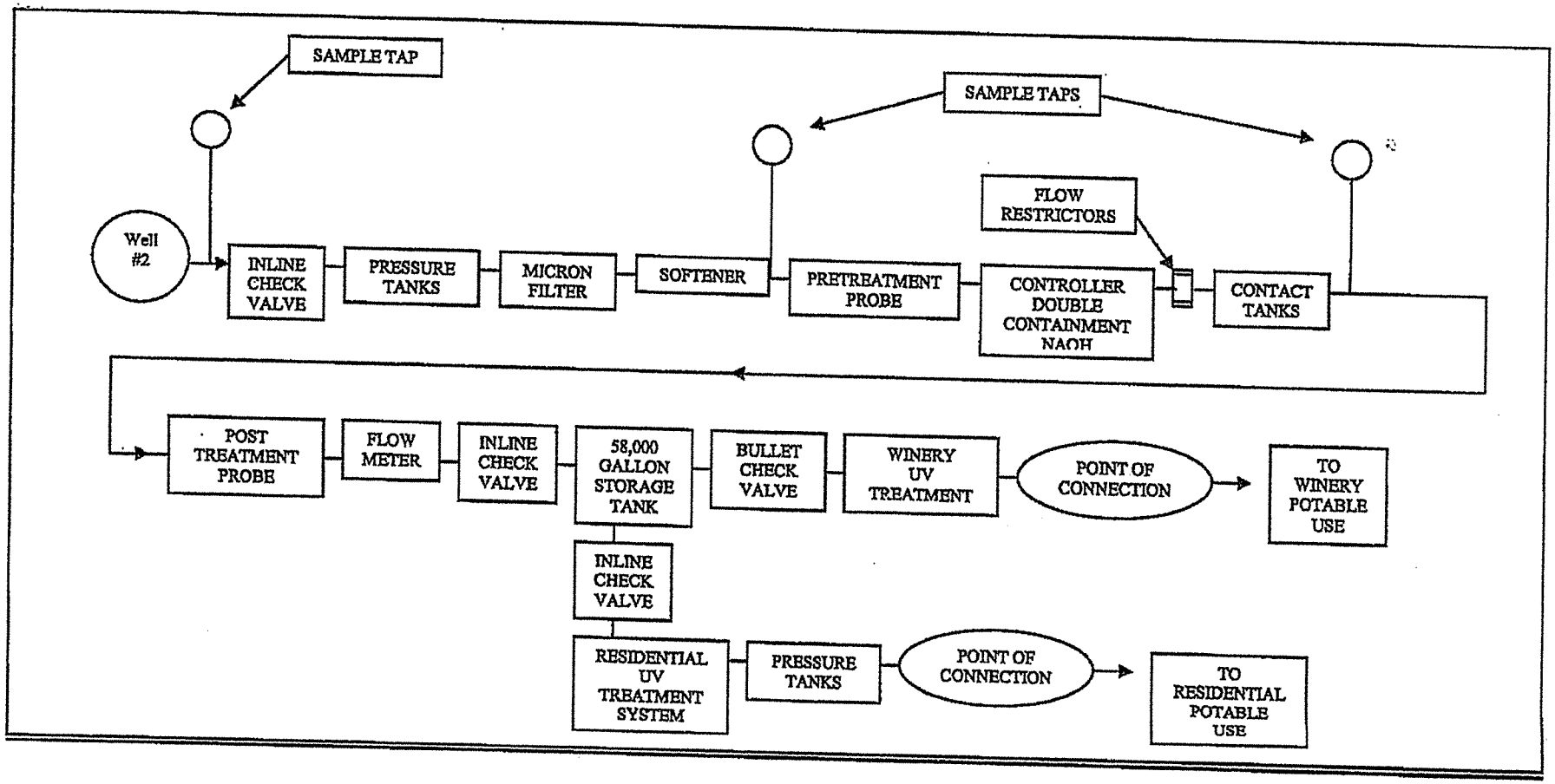
3/21/2013

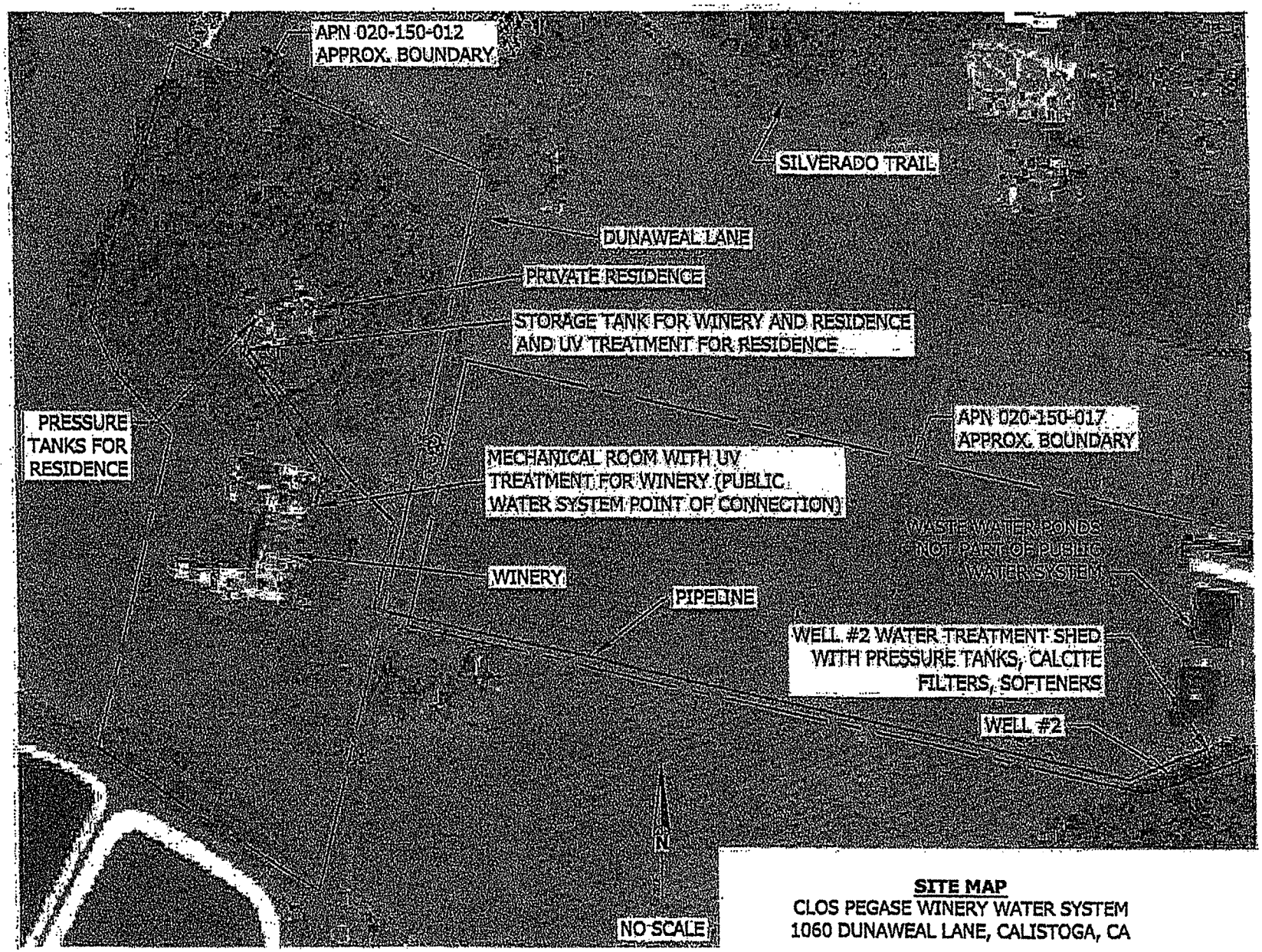
Date

Jahniah McGill, R.E.H.S.

CLOS PEGASE WINERY WATER SYSTEM

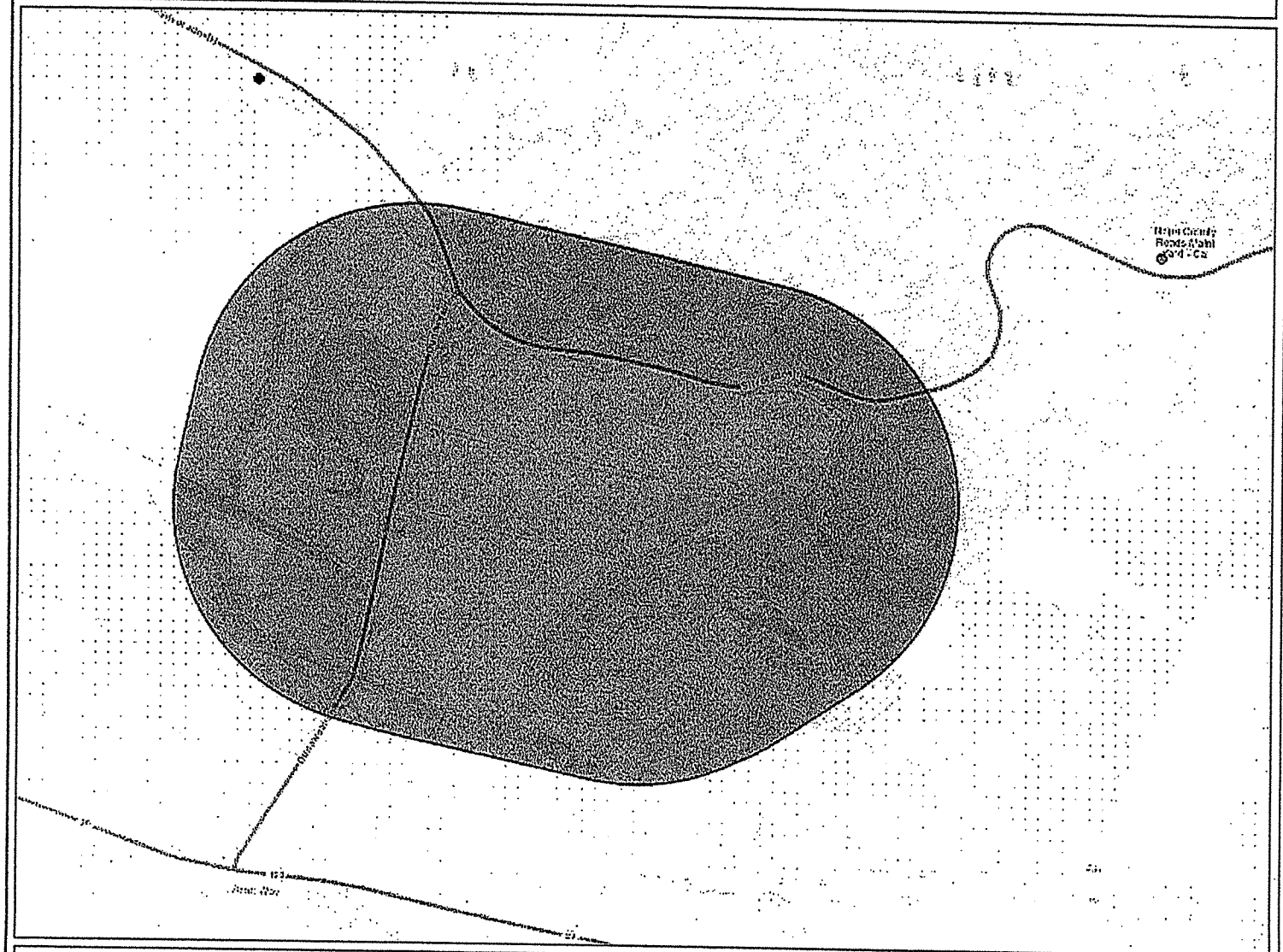
SYSTEM SCHEMATIC

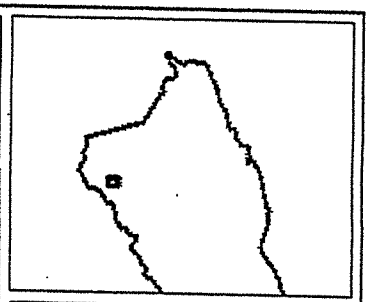




SITE MAP
CLOS PEGASE WINERY WATER SYSTEM
1060 DUNAWEAL LANE, CALISTOGA, CA

County of Napa GIS





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2,572.3 0 1,286.15 2,572.3 Feet

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No liability is assumed for the accuracy of the data delineated hereon.

This map was printed on 11/6/2013

Notes

DECLARATION

(Nontransient-Noncommunity)

I, PATRICK ROWE, declare that I understand the definition of a public
(name of owner or legally authorized representative)
water system, as defined in the California Health and Safety Code (CH&SC), Division 104, Part 12, Chapter 4 (California Safe Drinking Water Act), Article 1, Section 116275(h), to mean that a **public** water system is "a system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year."

Furthermore, I understand the definition of a nontransient-noncommunity water system, as defined in Section 116275(k), to mean "a public water system that is not a community water system and that regularly serves at least 25 of the same persons over 6 months per year."

Furthermore, I declare that I understand that Section 116275(e) defines human consumption as "the use of water for drinking, bathing or showering, hand washing, or oral hygiene."

Furthermore, I declare that I understand that Section 116725 of the CH&SC states that "Any person who knowingly makes any false statement or representation in any application, record, report, or other document submitted, maintained, or used for purposes or compliance with this chapter (California Safe Drinking Water Act (AB 2995)), may be liable for a civil penalty not to exceed five thousand ($5,000) for each separate violation or, for continuing violations, for each day that violation continues." In addition, Section 116730 of the CH&SC states that violators may be prosecuted in criminal court and upon conviction, be punished by a fine of not more than $25,000 for each day of violation, or by imprisonment in the county jail not to exceed one year, or by both the fine and imprisonment.

In recognition of the above, declaring that I understand the definition of a public water system and the penalty for giving false information, I declare that my facility, Clos Pegase and Girard Wineries Water System, does not meet the definition of a nontransient noncommunity water system because ***it does not serve more than 24 people more than 6 months out of the year.***

5/2/14
Date

Signature