“J”

Preliminary Water System Technical Report

Hendry Winery Use Permit Major Modification Application No. P15-00173
Planning Commission Hearing, December 18, 2024

CMP Civil Engineering & Land Surveying Inc.
1607 Capell Valley Road
Napa, CA 94558
(707) 266-2559
Cameron@CMPengineering.com
CMPengineering.com

Preliminary Water System Technical Report pertaining to Section 116527 of the Health and Safety Code

for the

Hendry Winery

3104 Redwood Road

Napa, CA 94558

APN: 035-120-031

Prepared By:

CMP Civil Engineering & Land Surveying
1607 Capell Valley Road
Napa, CA 94558
(707) 266-2559

Date: 9/26/2022
Rev 1: 10/30/2024

Project # 00067

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Proposed Water System General Descriptions

The proposed water system, officially called the Hendry Winery Water System, will supply potable water solely to the existing Hendry Winery. The water source for the winery will be a newly installed off-site well and the water storage facilities will be the existing combined 25,000 gallon water tanks serving the winery.

Type of Water System and Reason it is Required

The type of public water system proposed is a Transient Non-Community water system. The proposed public water system is required because the proposed winery visitation is expected to be above 25 people per day for more than 60 days per year.

Required Technical Sections per 116527 of the Health and Safety Code

1. List of Public Water Systems within 3 miles of Project along public right of ways.
   1.1. City of Napa

2. Feasibility of connecting to above listed public water systems
   2.1. Connecting to the agency listed in 1.1 is not feasible because the said agency has denied our request for connection. Please see the denial of service letter located in Attachment “A”.
3. Actions taken to secure water from a public water system
   3.1. Applicant contacted the agency listed in 1.1 and requested a water service connection at applicant’s expense. Said agency formally denied the request which is documented in Attachment “A”.
4. Source(s) of domestic water for new public water system
   4.1. Well #1 is a proposed new well located on the parcel directly west of the subject winery property with an estimated yield of 9 gallons per minute. The proposed well will be located adjacent to the existing well currently serving the winery. Please see the well location map included in Attachment “B”.
5. Construction and operation costs of water system
   5.1. The water system is expected to cost $80,000. It is expected that the system will have a usable lifespan of 30 years. It is expected to cost $1000 annually to operate, maintain and properly sample and test the water. It is expected that the system will cost roughly $134,000 to replace 30 years from now. To have this money available 30 years from now, $4467 must be set aside in a 0% annual interest rate account for the next 30 years. Thus it will cost an estimated $5467 per year to own, operate, maintain and eventually replace the subject water system. The Hendry Vineyard Winery has more than adequate funds to meet the financial demands of this water system.
6. Cost comparison, connecting to existing public system vs. create new

6.1. A cost comparison is not applicable because the requests for connection to the agency(s) listed in section 1 have all been denied.

7. Actions taken to secure managerial and operational oversite
   7.1. Request for managerial and operational oversite was included in the request for service to the agency(s) listed in section 1. All such requests were denied by said agency(s). Please see the denial of service letter(s) located in Attachment "A" for further details.
8. Twenty year water use analysis
   8.1. It is expected that this system will use a maximum of 6.42 acre-feet of water per year for the next 20 years which equates to a maximum of 128.4 acre-feet of water required over the entire 20 years. To verify the proposed water system can provide this, it must be compared to two different scenarios; the available flow of the well listed in 4.1 and the groundwater recharge rate for the property(s) the well serves.
   8.2. First, the source well listed in 4.1 is estimated to yield 9 gallons per minute which equates to 14.52 acre-feet per year, which then equates to a 20-year total available water of 290.4 acre-feet. Comparing this to the above required 20-year total of 128.4 acre-feet it can be seen that the well itself can provide more than enough water.
   8.3. Secondly, the groundwater recharge rate for the subject property is 20.99 acre-feet per year; please see the water availability calculations located in Attachment "C" for further details. The above recharge rate equates to a 20-year total available water of 419.8 acre-feet. Comparing this to the above required 20-year total of 128.4 acre-feet it can be seen that the groundwater recharge rate will provide more than enough water.
   8.4. The conclusion of this section is that the water supply to the proposed system is more than adequate for the proposed use.
9. Local Agency Formation Commission (LAFCO) documentation
   9.1. LAFCO denied the request for water service. Please see LAFCO correspondence included in Attachment "D".

Overall Conclusions

The only viable option for the Hendry Winery is to develop its own Transient Non-Community Water System.

Attachment “A”

Denial of Service Documentation

Cameron Pridmore

From: Stockon-Smith, Dana <dstockon@cityofnapa.org>
Sent: Wednesday, April 19, 2017 9:22 AM
To: cameron cmpengineering.com
Cc: Hether, Michael
Subject: RE: 00067 Hendry Winery
Attachments: 3104 Redwood Road.pdf; 3104 Redwood Rd Easement.pdf

Cameron,

After we spoke yesterday we reviewed your email, prompting our Senior Engineer to request I research the possible restrictions on the connection.

As we discussed the service was installed as part of a "Outside Water Service Agreement". It is very clear in that agreement that the service is strictly for residential use, as required by City Council Policy Resolution No.7. The policy resolution was not attached to our copy of the agreement, but should be able to be located online if you need to read the specific language. Policy Resolution No. 7 was a general policy resolution relating to all outside water service agreements.

In addition, I researched the easement agreement for the pipeline and road access on the parcel. Sometimes these agreements contain rights to connect to city water. This agreement did not.

I have attached both documents for your records.

So to summarize, if the County of Napa sends the permit to us for review, and it includes using City Water for commercial uses, we will not authorize the issuance of the permit until an alternative water supply has been specified.

If you have any further questions or need more information, please don't hesitate to contact me.

Thanks,

Dana Stockon
Engineering Aide, Water Division

Public Works - Water Division Office
City of Napa
1340 Clay Street
Napa, CA 94559
Phone (707) 257-9496
Email dstockon@cityofnapa.org
Website www.cityofnapa.org/water
Social www.facebook.com/CityOfNapa · @CityOfNapa

Visit our website for up-to-date details on the drought and ideas on how you can save water.

From: Hether, Michael
Sent: Tuesday, April 18, 2017 3:11 PM

To: Stockon-Smith, Dana
Subject: FW: 00067 Hendry Winery

See email below…thanks Dana.

MJ

From: Woods, Keith
Sent: Tuesday, April 18, 2017 7:32 AM
To: Hether, Michael
Cc: Cameron Pridmore
Subject: RE: 00067 Hendry Winery

Cameron,
You will need to talk with the water department. I've forwarded this to Michael Hether who should be able to help.

Michael,
Can you answer Cameron's question below?

Thanks,
Keith

Keith Woods
Engineering Assistant
City of Napa Public Works Department
1600 First Street, Napa, CA 94559
Phone (707) 257-9334
Email kwoods@cityofnapa.org

From: Cameron Pridmore [mailto:cameron@cmpengineering.com]
Sent: Monday, April 17, 2017 8:39 PM
To: Woods, Keith
Subject: 00067 Hendry Winery

Hi Keith,

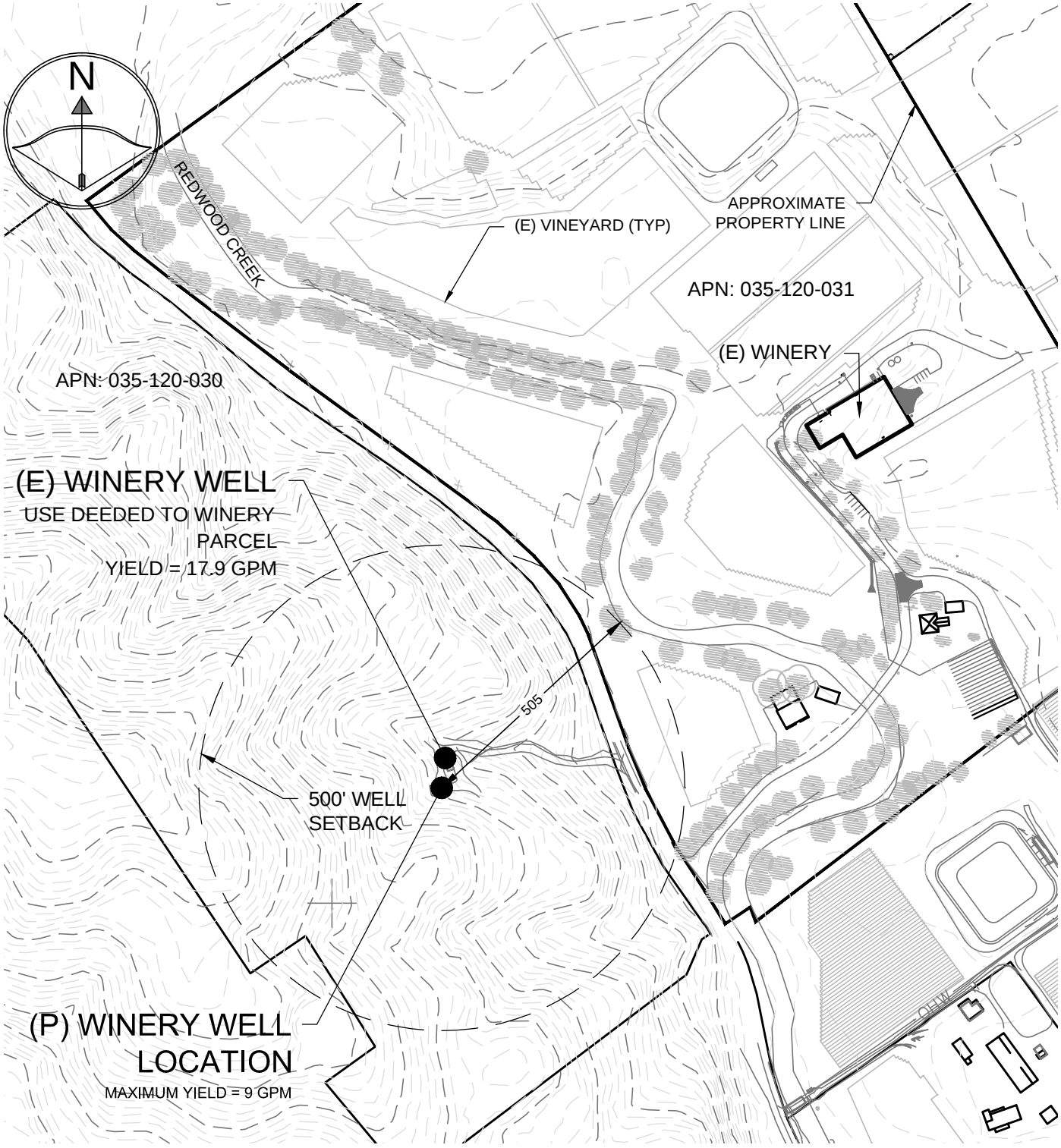
I have a question for you regarding a Winery hooking up to City water. I have an existing winery project located at 3104 Redwood Road in Napa. The parcel the winery is on is currently served by a 2" service connection to city water (Meter # 404-5205-A). Currently only the house on the property is hooked up to this 2" connection but the property owners would like to hook up the winery to it as well. They would only be using the water for a potable water source for visitors and employees, the water used in wine production is on a separate system and would continue to be served by their well. Thus the expected max flow required would be around 10 gpm. Given the large 2" connection I don't see any issues with the flow rate, I just wanted to make sure the City is okay with this before I tell them they can do it. I'm not sure if you are the one to talk to about this, if not could you point me in the right direction. Thanks.

Regards,

Cameron Pridmore PE, PLS, QSD
CMP Civil Engineering & Land Surveying
P-(707) 266-2559
C-(707) 815-0988

Attachment “B”

Well Location Map



WELL LOCATION MAP

SHEET: 1 OF 1

PROJECT INFO:

HENDRY WINERY
3104 REDWOOD ROAD
NAPA, CA 94558
APN: 035-120-031

PREPARED BY:

CMP CIVIL ENGINEERING &
LAND SURVEYING, INC.
1607 CAPELL VALLEY ROAD
NAPA, CA 94558
(707) 266-2559

P #: 00067

DATE: 9/19/2019
REV: 6/6/2024

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ENGINEERING & SURVEYING

Attachment “C”

Water Availability Analysis
and Supporting Calculations

CMP Civil Engineering & Land Surveying Inc.
1607 Capell Valley Road
Napa, CA 94558
(707) 266-2559
Cameron@CMPEngineering.com
CMPEngineering.com

Water Availability Analysis Report

for the

Hendry Winery

3104 Redwood Road

Napa, CA 94558

APN: 035-120-031

Prepared By:

CMP Civil Engineering & Land Surveying Inc.
1607 Capell Valley Road
Napa, CA 94558
(707) 266-2559

Date: 6/21/2017
Rev1: 11/20/2017
Rev2: 9/19/2019
Rev3: 9/20/2022
Rev 4: 12/20/2022
Rev 5: 10/12/2023
Rev 6: 6/24/2024

Project # 00067

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Contact Information	
Property Owner:	George Hendry
Owner Address:	3104 Redwood Road Napa, CA 94558
Owner Phone:	(707) 266-2130

Site Map:

Please refer to the Use Permit Site Plan for the Hendry Winery and the Well Location Map for the Hendry Winery which is attached to this report. The Well Location Map shows the existing water source (existing well) and the proposed well location for the winery and their proximity to other water sources.

Narrative:

This project involves an existing winery located on one parcel totaling 59.00 acres located at 3104 Redwood Road in Napa County. The winery owners are proposing to maintain their existing annual wine production at 59,000 gallons. There is one residence located on the subject property but it is served water by the Napa City Water District. There are two existing 5,000 gallon tanks and one 15,000 gallon water tank that provide both potable and fire protection water storage for the winery. All three of the tanks are filled by an existing off-site well located on the parcel directly west of the subject winery parcel. Said well connection is legal and only serves the winery property; see attached well use agreement. The land the well is located on is vacant with no known uses. The said well has a capacity of 17.9 gallons per minute, which is equivalent to 28.87 acre-feet per year. It is the intention of the winery owners to drill a new well located adjacent to the existing off-site well, as shown on the Well Location Map. This proposed well will serve all of the winery water needs and the existing off-site well will no longer be used, but will remain maintained for potential future use. The proposed well will have a Clack Corporation FLO-ET 9 GPM V7A106D (or equivalent) flow control device installed at the well head, which is designed to limit the well yield to a maximum of 9 gallons per minute, or 14.52 acre-feet per year.

Tier 1: Water Use Criteria

Water Use:

The calculated annual water use provided by the off-site well for the winery parcel under the most recently approved Use Permit is 6.24 acre-feet per year. Of this, 5.25 acre-feet is for vineyard irrigation and the remaining 0.99 acre-feet is utilized by the winery. Of the 0.99 acre-feet per year used by the winery, 0.91 is from process water, and the other 0.08 acre-feet per year is from domestic water. The existing calculated annual water use for the winery parcel is 6.28 acre-feet. Of this, 5.25 acre-feet is used to irrigate vineyards and the remaining 1.03 acre-feet is utilized by the winery. Of the 1.03 acre-feet per year used by the winery, 0.91 is from process water, and the other 0.12 acre-feet per year is from domestic water.

Proposed Water Use:

The proposed changes in visitation are expected to increase the annual water use to 6.42 acre-feet. Of this 6.42 acre-feet per year, 5.25 will still be used to irrigate existing vineyards while 1.16 will be utilized by the winery. Of this 1.16 acre-feet, 0.91 will continue to be used for process water while the domestic water increases to 0.26 acre-feet per year. Refer to Appendix A for detailed calculations on existing and proposed water use.

Estimated Recharge:
The well property is located outside of the areas in which the Napa County Water Availability Analysis Guidance Document provides pre-defined groundwater recharge rates. As such, a groundwater recharge analysis was conducted in order to establish the annual groundwater recharge rate attributable to the well parcel. This analysis quantifies the amount of average annual rainfall infiltrating to the underlying aquifer based on the most recent, stable 10-year precipitation data provided by the Oregon State University PRISM Climate Group, estimated losses to runoff, and estimated losses to evapotranspiration. The calculations supporting this analysis are included in this report. The calculated groundwater recharge rate for the well property is 0.60 acre-feet of water per acre of land. Given that the parcel is 35.26 acres, the maximum allowable water use for the well parcel is 20.99 acre-feet per year. Refer to Appendix B for detailed recharge calculations.

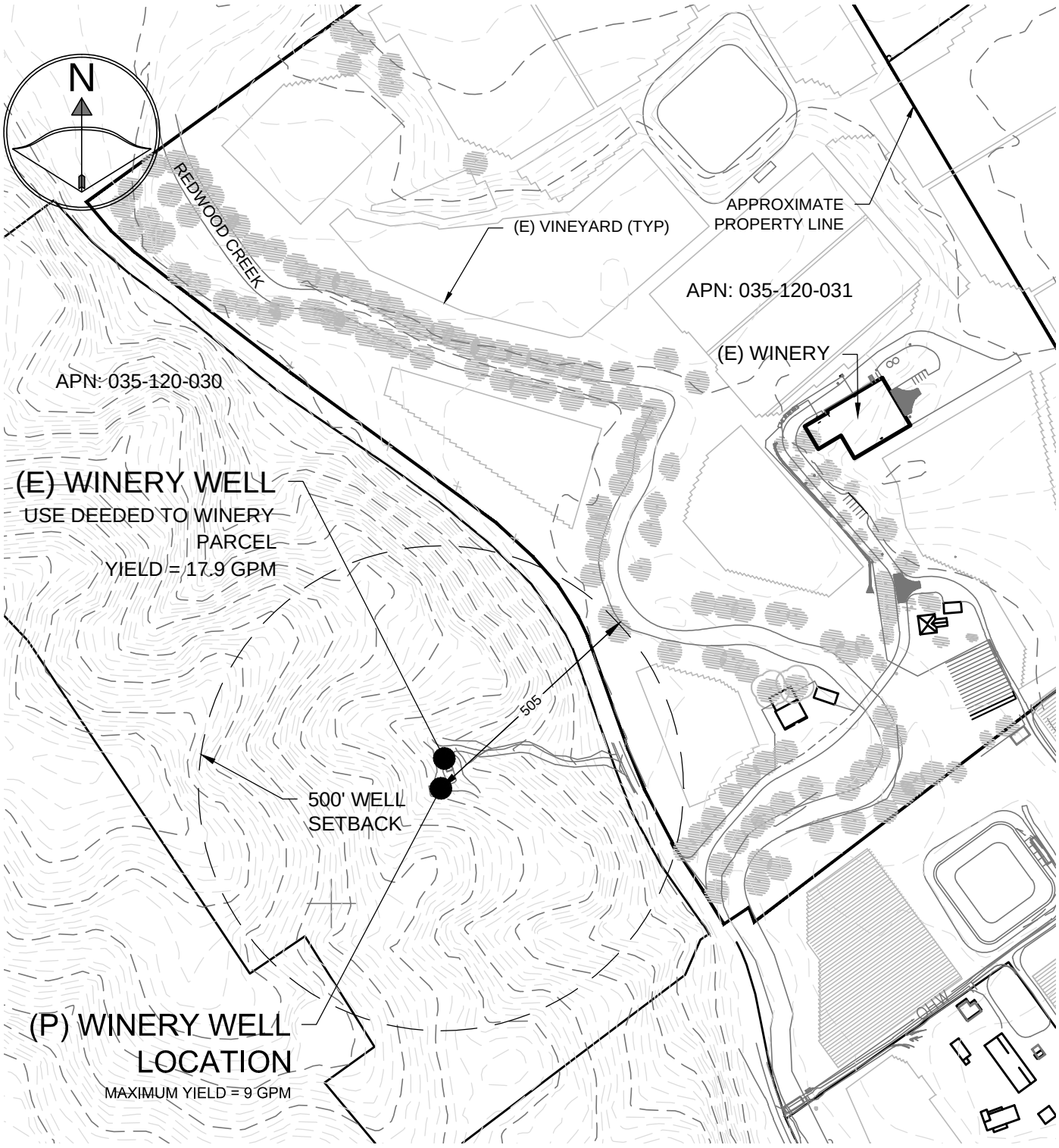
Tier 2: Well and Spring Interference
Neighboring Wells and Springs:
There are no known off-site wells located within 500 feet of the proposed well location and there are no known springs located within 1,500 feet of the proposed well location. As such, the project passes the Tier 2 criteria with no further analysis required.

Tier 3: Groundwater/Surface Water Interaction
Surface Water Interaction:
The latest Interim County Well Permit Standards generally require a Tier 3 analysis for proposed wells located within 1,500 feet of a County-designated significant stream inside the Napa River Watershed. The Water Availability Analysis Guidance Document provides distance standards that are expected to preclude any significant adverse effects on surface waters based on well pumping rates, aquifer hydraulic conductivity, and well construction characteristics. These distance standards are presented in Tables 3, 4 & 5 within the Water Availability Analysis Guidance Document.

In order to limit the radius of potential interaction and to preclude any significant adverse effects on surface waters, the proposed well will be constructed with a minimum 50 foot deep annular seal, well perforations will begin at a depth greater than 100 feet, and the well will be equipped with a Clack Corporation FLO-ET 9 GPM V7A106D (or equivalent) flow control device, which will limit the flow rate of the well to 9 gallons per minute. As proposed, the new well will meet the criteria of Table 3 of the Water Availability Analysis Guidance Document, and the acceptable distance from surface water is 500 feet.

The nearest County-designated significant stream to the proposed well is Redwood Creek, which is located to the northeast of the proposed well. At its nearest point, Redwood Creek is approximately 505 feet from the proposed well and therefore the proposed well will not have any significant adverse effect on Redwood Creek. The proposed well passes the Tier 3 screening criteria.

Summary and Conclusions:
Comparing the proposed total groundwater use of 6.42 acre-feet per year to the calculated parcel groundwater recharge rate of 20.99 acre-feet per year, it is clear that the well parcel has adequate groundwater available to serve the proposed use, and therefore passes the Tier 1 screening criteria. Since there are no known off-site springs within 1,500 feet and no known off-site wells within 500 feet of the proposed well, the project passes the Tier 2 screening criteria. Lastly, the proposed well meets the distance and construction assumptions in Table 3 of the WAA Guidance Document, and therefore passes the Tier 3 screening criteria.



WELL LOCATION MAP

SHEET: 1 OF 1

PROJECT INFO:

HENDRY WINERY
3104 REDWOOD ROAD
NAPA, CA 94558
APN: 035-120-031

PREPARED BY:

CMP CIVIL ENGINEERING &
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(707) 266-2559

P #: 00067

DATE: 9/19/2019
REV: 6/6/2024

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Appendix A

Water Use Calculations

CMP Civil Engineering & Land Surveying Inc.
1607 Capell Valley Road
Napa, CA 94558
(707) 266-2559
Cameron@CMPEngineering.com
CMPEngineering.com

Water Availability Calculations
for the
Hendry Winery Well Property

Located at:
APN: 035-120-030, Redwood Road
Napa, CA 94558

Date: 11/10/2015
Rev 1: 6/21/2017
Rev 2: 11/10/2017
Rev 3: 9/19/2019
Rev 4: 9/20/2022
Rev 5: 10/12/2023
Rev 6: 6/24/2024

Project # 00067

Legend
Requires Input
Automatically Calculates
Important Value Automatically Calculates
Important Value Requires Input

Hit ctrl+alt+shift+F9 when finished to recalc all formulas

WATER AVAILABILITY ANALYSIS CALCULATIONS

WATER USE CALCULATIONS FOR EXISTING USE

RESIDENTIAL	#	FACTOR	AF/YR
PRIMARY RESIDENCES (Well) =	0	0.6	0.00
SECONDARY RESIDENCES (Well) =	0	0.25	0.00
FARM LBR DWELLING (# OF PPL) =	0	0.08	0.00
		SUB TOTAL=	0.00

NON- RESIDENTIAL CALCULATIONS

AGRICULTURAL	# ACRE	FACTOR	AF/YR
VINEYARD IRRIGATION ONLY =	26.26	0.2	5.25
VINEYARD HEAT PROTECTION =	0	0.25	0.00
VINEYARD FROST PROTECTION =	0	0.25	0.00
IRRIGATED PASTURE =	0	4	0.00
ORCHARDS =	0	4	0.00
LIVESTOCK (SHEEP/COWS) =	0	0.01	0.00
		SUB TOTAL=	5.25
WINERY	**# GAL**	**FACTOR**	**AF/YR**
PROCESS WATER =	295000	SEE WW CALCS	0.91
DOMESTIC AND LANDSCAPING =	38078	SEE WW CALCS	0.12
		SUB TOTAL=	1.03
INDUSTRIAL	**# EMPL**	**FACTOR**	**AF/YR**
FOOD PROCESSING =	0	31	0.00
PRINTING/ PUBLISHING =	0	0.6	0.00
		SUB TOTAL=	0.00
COMMERCIAL	**# EMPL**	**FACTOR**	**AF/YR**
OFFICE SPACE =	0	0.01	0.00
WAREHOUSE =	0	0.05	0.00
		SUB TOTAL=	0.00

EXISTING USE TOTALS

RESIDENTIAL =	0.00	AF/YR
AGRICULTURAL =	5.25	AF/YR
WINERY =	1.03	AF/YR
INDUSTRIAL =	0.00	AF/YR
COMMERCIAL =	0.00	AF/YR
OTHER USAGE (LIST BELOW)		
		AF/YR
		AF/YR
		AF/YR
		AF/YR
		AF/YR
TOTAL EXISTING WATER USE =	**2045835**	**G/YR**
TOTAL EXISTING WATER USE =	**6.28**	**AF/YR**

WATER AVAILABILTY CALCULATIONS FOR EXISTING USE			
WELL NUMBER	Q - GPM	AF/YR	
1	17.9	28.87	
2			
3			
4			
5			
TOTAL =	17.9	28.87	
SPRING NUMBER	Q - GPM	AF/YR	
1			
2			
3			
4			
5			
TOTAL =	0	0.000	
TANK #	GAL	AF	
1	15000	0.05	
2	5000	0.02	
3	5000	0.02	
4			
5			
TOTAL =	25000	0.08	
RESERVOIR #	GAL	AF	
1			
2			
3			
4			
5			
TOTAL =	0	0	
GROUND WATER RECHARGE	AF/YR/ACRE	PARCEL AC	AF/YR
CALC'D HILLSIDE ANNUAL RECHARGE RATE =	0.60	35.26	20.99
TOTAL AVAILABLE WATER =	**6839147**	**G/YR**	
TOTAL AVAILABLE WATER =	**20.99**	**AF/YR**	
TOTAL EXISTING WATER USE =	**6.28**	**AF/YR**	
REMAINING AVAILABLE WATER =	**14.71**	**AF/YR**	

WATER USE CALCULATIONS FOR PREVIOUSLY APPROVED USE			
RESIDENTIAL	**#**	**FACTOR**	**AF/YR**
PRIMARY RESIDENCES (Well) =	0	0.6	0.00
SECONDARY RESIDENCES (Well) =	0	0.25	0.00
FARM LBR DWELLING (# OF PPL) =	0	0.08	0.00
		SUB TOTAL=	0.00
NON- RESIDENTIAL CALCULATIONS			
AGRICULTURAL	**# ACRE**	**FACTOR**	**AF/YR**
VINEYARD IRRIGATION ONLY =	26.26	0.2	5.25
VINEYARD HEAT PROTECTION =	0	0.25	0.00
VINEYARD FROST PROTECTION =	0	0.25	0.00
IRRIGATED PASTURE =	0	4	0.00
ORCHARDS =	0	4	0.00
LIVESTOCK (SHEEP/COWS) =	0	0.01	0.00
		SUB TOTAL=	5.25
WINERY	**# GAL**	**FACTOR**	**AF/YR**
PROCESS WATER =	295000	SEE WW CALC	0.91
DOMESTIC AND LANDSCAPING =	25685	SEE WW CALC	0.08
		SUB TOTAL=	0.99
INDUSTRIAL	**# EMPL**	**FACTOR**	**AF/YR**
FOOD PROCESSING =	0	31	0.00
PRINTING/ PUBLISHING =	0	0.6	0.00
		SUB TOTAL=	0.00
COMMERCIAL	**# EMPL**	**FACTOR**	**AF/YR**
OFFICE SPACE =	0	0.01	0.00
WAREHOUSE =	0	0.05	0.00
		SUB TOTAL=	0.00

PREVIOUSLY APPROVED USE TOTALS		
RESIDENTIAL =	0.00	AF/YR
AGRICULTURAL =	5.25	AF/YR
WINERY =	0.99	AF/YR
INDUSTRIAL =	0.00	AF/YR
COMMERCIAL =	0.00	AF/YR
OTHER USAGE (LIST BELOW)		
		AF/YR
		AF/YR
		AF/YR
		AF/YR
		AF/YR
TOTAL PREVIOUSLY APPROVED WATER USE =	**2032319**	**G/YR**
TOTAL PREVIOUSLY APPROVED WATER USE =	**6.24**	**AF/YR**

WATER AVAILABILTY CALCULATIONS FOR PREVIOUSLY APPROVED USE			
WELL NUMBER	Q - GPM	AF/YR	
1	17.9	28.87	
2			
3			
4			
5			
TOTAL =	17.9	28.87	
SPRING NUMBER	Q - GPM	AF/YR	
1			
2			
3			
4			
5			
TOTAL =	0	0.000	
TANK #	GAL	AF	
1	15000	0.05	
2	5000	0.02	
3	5000	0.02	
4			
5			
TOTAL =	25000	0.08	
RESERVOIR #	GAL	AF	
1			
2			
3			
4			
5			
TOTAL =	0	0	
GROUND WATER RECHARGE	AF/YR/ACRE	PARCEL AC	AF/YR
CALC'D HILLSIDE ANNUAL RECHARGE RATE =	0.60	35.26	20.99
TOTAL AVAILABLE WATER =	**6839147**	**G/YR**	
TOTAL AVAILABLE WATER =	**20.99**	**AF/YR**	
TOTAL PREVIOUSLY APPROVED WATER USE =	**6.24**	**AF/YR**	
REMAINING AVAILABLE WATER =	**14.75**	**AF/YR**	

WATER USE CALCULATIONS FOR PROPOSED USE			
RESIDENTIAL	**#**	**FACTOR**	**AF/YR**
PRIMARY RESIDENCES (Well) =	0	0.6	0.00
SECONDARY RESIDENCES (Well) =	0	0.25	0.00
FARM LBR DWELLING (# OF PPL) =	0	0.08	0.00
		SUB TOTAL=	0.00
NON- RESIDENTIAL CALCULATIONS			
AGRICULTURAL	**# ACRE**	**FACTOR**	**AF/YR**
VINEYARD IRRIGATION ONLY =	26.26	0.2	5.25
VINEYARD HEAT PROTECTION =	0	0.25	0.00
VINEYARD FROST PROTECTION =	0	0.25	0.00
IRRIGATED PASTURE =	0	4	0.00
ORCHARDS =	0	4	0.00
LIVESTOCK (SHEEP/COWS) =	0	0.01	0.00
		SUB TOTAL=	5.25
WINERY	**# GAL**	**FACTOR**	**AF/YR**
PROCESS WATER =	295000	SEE WW CALC	0.91
DOMESTIC AND LANDSCAPING =	84050	SEE WW CALC	0.26
		SUB TOTAL=	1.16
INDUSTRIAL	**# EMPL**	**FACTOR**	**AF/YR**
FOOD PROCESSING =	0	31	0.00
PRINTING/ PUBLISHING =	0	0.6	0.00
		SUB TOTAL=	0.00
COMMERCIAL	**# EMPL**	**FACTOR**	**AF/YR**
OFFICE SPACE =	0	0.01	0.00
WAREHOUSE =	0	0.05	0.00
		SUB TOTAL=	0.00

PROPOSED USE TOTALS		
RESIDENTIAL =	0.00	AF/YR
AGRICULTURAL =	5.25	AF/YR
WINERY =	1.16	AF/YR
INDUSTRIAL =	0.00	AF/YR
COMMERCIAL =	0.00	AF/YR
OTHER USAGE (LIST BELOW)		
		AF/YR
		AF/YR
		AF/YR
		AF/YR
		AF/YR
TOTAL PROPOSED WATER USE =	**2090303**	**G/YR**
TOTAL PROPOSED WATER USE =	**6.42**	**AF/YR**

WATER AVAILABILTY CALCULATIONS FOR PROPOSED USE			
WELL NUMBER	Q - GPM	AF/YR	
1	0	0.00	
2 (PROPOSED WELL)	9	14.52	
3			
4			
5			
TOTAL=	9	14.52	
SPRING NUMBER	Q - GPM	AF/YR	
1			
2			
3			
4			
5			
TOTAL=	0	0.00	
TANK #	GAL	AF	
1	15000	0.05	
2	5000	0.02	
3	5000	0.02	
4			
5			
TOTAL=	25000	0.08	
RESERVOIR #	GAL	AF	
1			
2			
3			
4			
5			
TOTAL=	0	0.00	
GROUND WATER RECHARGE	AF/YR/ACRE	PARCEL AC	AF/YR
CALC'D HILLSIDE ANNUAL RECHARGE RATE =	0.60	35.26	20.99
TOTAL WATER AVAILABLE =	**6839147**	**G/YR**	
TOTAL WATER AVAILABLE =	**20.99**	**AF/YR**	
TOTAL PROPOSED WATER USE =	**6.42**	**AF/YR**	
REMAINING AVAILABLE WATER =	**14.57**	**AF/YR**	

Appendix B

Groundwater Recharge Calculations

CMP Civil Engineering & Land Surveying Inc.
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Ground Water Recharge Analysis

for the

Hendry Winery Well Property

Located at:
APN: 035-120-030, Redwood Road
Napa, CA 94558

Date: 9/19/2019
Rev 1: 9/20/2022
Rev 2: 10/12/2023
Rev 3: 6/24/2024

Project # 00067

Legend
Requires Input
Automatically Calculates
Important Value Automatically Calculates
Important Value Requires Input

Hit ctrl+alt+shift+F9 when finished.

GROUND WATER RECHARGE CALCULATIONS

PARCEL VARIABLES			
Parcel size =	35.26	ac	
Average annual rainfall (P) =	26.45	in (from latest stable PRISM 10-yr Data)	
Total parcel average rainfall volume =	77.72	ac-ft/yr	
EVAPOTRANSPIRATION (E)			
Crop Type	Area (ac)	E (ac-ft)	
Vineyard =			
Orchard =			
Hay =			
Other Crops =			
Totals =	0.00	0.00	
Native plants area =	35.26	ac	
Native plants estimated coefficient =	0.35	coefficient	
Plant density =	90%	percent	
Native Plant Growth Cycle Factor =	0.70	factor	
Grass reference ETo =	45.34	in (from Zone 8 ITRC value typ yr)	
Native plant ETc =	11.11	in	
Total annual native plant E =	29.38	ac-ft	
Total annual E for parcel =	**29.38**	**ac- ft**	
RUNOFF (R)			
Average runoff relief coefficient =	24%	%	
Average runoff soil coefficient =	7%	%	
Average runoff vegetation coefficient =	5%	%	
Average runoff surface coefficient =	8%	%	
Total Runoff Coefficient =	44%	%	
Average annual rainfall =	77.72	ac-ft	
Runoff producing rainfall =	80%	%	
Total Annual Runoff (R) =	**27.36**	**ac-ft**	
ANNUAL GROUND WATER RECHARGE STORAGE (S) = P-(R+E)			
Total Annaul Precipitation (P) =	77.72	ac-ft	
Total Annual Runoff (R) =	27.36	ac-ft	
Total Annual Evapotranpiration (E) =	29.38	ac-ft	
Total Annual Ground Recharge (S) =	**20.99**	ac-ft	
Annual Recharge Rate Per Acre =	**0.60**	**ac-ft / yr / ac**	

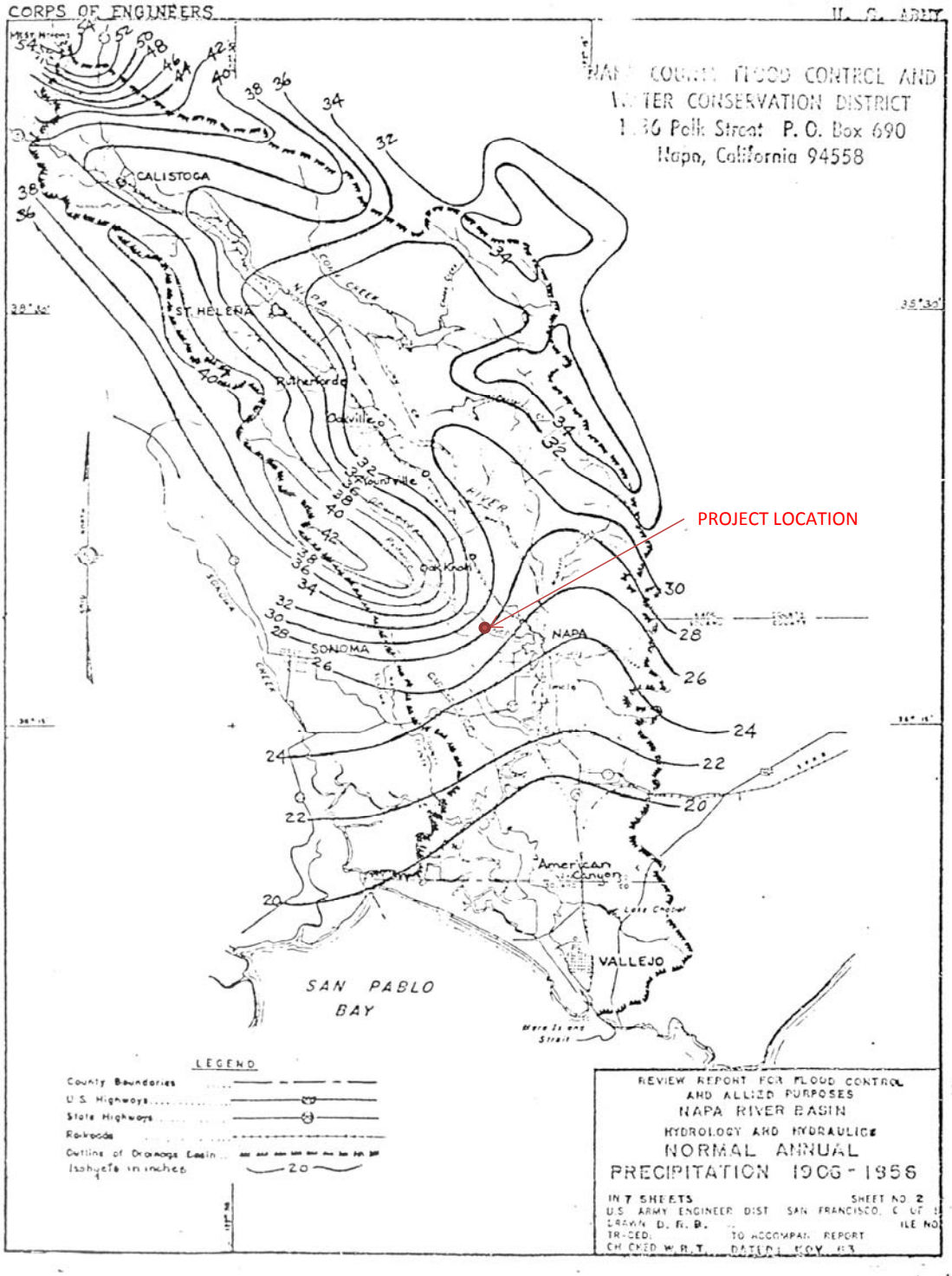
PRISM Time Series Data
Location: Lat: 38.3188 Lon: -122.3466 Elev: 138ft
Climate variable: ppt
Spatial resolution: 4km
Period: 2014-01 - 2023-12
Dataset: AN91m
PRISM day definition: 24 hours ending at 1200 UTC on the day shown
Grid Cell Interpolation: Off
Time series generated: 2024-Jun-06
Details: http://www.prism.oregonstate.edu/documents/PRISM_datasets.pdf

Date	ppt (inches)
2014-01	0.1
2014-02	8.81
2014-03	2.7
2014-04	2.2
2014-05	0.05
2014-06	0
2014-07	0
2014-08	0.03
2014-09	0.43
2014-10	0.5
2014-11	3.17
2014-12	14.98
2015-01	0
2015-02	2.67
2015-03	0.2
2015-04	1.48
2015-05	0.02
2015-06	0.08
2015-07	0.02
2015-08	0
2015-09	0.33
2015-10	0.04
2015-11	1.44
2015-12	5.01
2016-01	8.95
2016-02	1.02
2016-03	9.05
2016-04	1.02
2016-05	0.22
2016-06	0
2016-07	0
2016-08	0
2016-09	0
2016-10	4.62
2016-11	2.54
2016-12	6.54

Annual Average = 26.45 (inches)

2017-01	15.11
2017-02	12.26
2017-03	4.54
2017-04	3.08
2017-05	0
2017-06	0.37
2017-07	0
2017-08	0
2017-09	0.01
2017-10	0.23
2017-11	3.79
2017-12	0.04
2018-01	4.87
2018-02	0.2
2018-03	6.36
2018-04	3.97
2018-05	0.04
2018-06	0
2018-07	0
2018-08	0
2018-09	0
2018-10	0.38
2018-11	5.58
2018-12	2.84
2019-01	9.27
2019-02	14.41
2019-03	5.93
2019-04	0.43
2019-05	3.29
2019-06	0
2019-07	0
2019-08	0
2019-09	0.04
2019-10	0
2019-11	0.85
2019-12	6.68
2020-01	2.43
2020-02	0
2020-03	1.32
2020-04	1.08
2020-05	1.3
2020-06	0
2020-07	0
2020-08	0
2020-09	0
2020-10	0
2020-11	1.11

2020-12	2.06
2021-01	3.35
2021-02	1.42
2021-03	1.85
2021-04	0.09
2021-05	0
2021-06	0
2021-07	0
2021-08	0
2021-09	0.04
2021-10	9.73
2021-11	1.59
2021-12	6.8
2022-01	0.67
2022-02	0.05
2022-03	0.74
2022-04	1.76
2022-05	0.01
2022-06	0.37
2022-07	0
2022-08	0
2022-09	0.76
2022-10	0
2022-11	1.33
2022-12	8.85
2023-01	11.57
2023-02	3.36
2023-03	10.3
2023-04	0.37
2023-05	0.66
2023-06	0
2023-07	0
2023-08	0
2023-09	0.1
2023-10	0.53
2023-11	1.85
2023-12	4.25


CORPS OF ENGINEERS
U. S. ARMY
NAPA COUNTY FLOOD CONTROL AND
WATER CONSERVATION DISTRICT
1136 Polk Street P. O. Box 690
Napa, California 94558
CALISTOGA
ST. HELENA
Rutherford
Oakville
Mountville
Oak Knoll
NAPA
SONOMA
American Canyon
VALLEJO
SAN PABLO BAY
PROJECT LOCATION
LEGEND
County Boundaries
U.S. Highways
State Highways
Railroads
Outline of Drainage Basin
Isohyets in inches
REVIEW REPORT FOR FLOOD CONTROL
AND ALLIED PURPOSES
NAPA RIVER BASIN
HYDROLOGY AND HYDRAULICS
NORMAL ANNUAL
PRECIPITATION 1906 - 1956
IN 7 SHEETS
SHEET NO 2
U.S. ARMY ENGINEER DIST. SAN FRANCISCO, C. OF E.
DRAWN D. R. B.
FILE NO
TRACED
TO ACCOMPAN. REPORT
CHECKED W.R.T.
DATED NOV. 63

RUN-OFF PRODUCING CHARCTERISTICS OF WATERSHEDS SHOWING FACTORS FOR EACH CHARACTERISTIC FOR VARIOUS WATERSHED TYPES

WATERSHED TYPES AND FACTORS				
Run-off Producing Features	Extreme	High	Normal	Low
Relief	0.28-0.36 Steep, rugged terain, with average slopes above 30%.	0.20 - 0.28 Rolling, with average slopes of 10 to 30%.	0.14 - 0.20 Rolling, with average slopes of 5 to 10%.	0.08 - 0.14 Relatively flat land, with average slopes of 0 to 5%.
Soil Infiltration	0.12 - 0.16 No effective soil cover either rock or thin soil mantle of negligible infiltration capacity.	0.08 - 0.12 Slow to take up water; clay or shallow loam soils of low infiltration capacity imperfectly or poorly drained.	0.06 - 0.08 Normal; well drained light and medium textured soils sandy loams, silt, and silt loams.	0.04 - 0.06 High; deep sand or other soil that takes up water readily; very light, well drained soils.
Vegtal Cover	0.12-0.16 No effective plant cover; bare or very sparse cover.	0.08-0.12 Poor to fair; clean cultivation crops or poor natural cover; less than 20% of drainage area under good cover.	0.06-0.08 Fair to good; about 50% of area in good grassland or woodland; not more than 50% of area in cultivated crops.	0.04-0.06 Good to excellent; about 90% of drainage area in good grassland, woodland, or equivalent crop.
Surface	0.10-0.12 Negligible; surface depressions, few and shallow; drainageways steep and small; no marshes.	0.08 - 0.10 Low; well-defined system of small drainageways; no ponds or marsh.	0.06 - 0.08 Normal; considerable surface depression storage; lakes, ponds, and marshes	0.04 - 0.06 High; surface storage high; drainage system not sharply defined; large floodplain storage or large number of ponds or marshes.

THE RUNOFF FACTOR IS DETERMINED BY THE SUM OF THE FACTORS FOR RELIEF INFILTRATION, COVER, AND SURFACE. NOT APPLICABLE TO BUILT UP AREAS.

FIGURE 3

Attachment “D”

LAFCO Documentation

Cameron Pridmore

From: Freeman, Brendon <bfreeman@napa.lafco.ca.gov>
Sent: Thursday, September 19, 2019 4:05 PM
To: Cameron Pridmore
Subject: RE: 00067 - Hendry Winery Proposed Non-Community Transient Water System

Good afternoon Cameron,

Good speaking with you today as well.

I am confirming the proposed public winery water system located at the Hendry Winery, 3104 Redwood Road, Napa, CA (APN: 035-120-031) is located outside the jurisdictional boundaries and spheres of influence of all cities and special districts in Napa County that are authorized to provide public water service. While the property is located in close proximity to the City of Napa, the property can't be annexed to the City under existing state law coupled with adopted LAFCO policies.

Pursuant to California Government Code Section 56133, cities and special districts may not extend water service outside their jurisdictional boundaries and spheres of influence unless there exists a documented threat to public health or safety involving the subject property. It is my understanding there is no such threat involving the subject property.

With all of this in mind, there are no public water service options available to the subject property involving a city or special district.

Please let me know if you have any questions or if there's anything else I can provide that may be helpful.

Brendon Freeman, Executive Officer
Local Agency Formation Commission of Napa County
1030 Seminary Street, Suite B
Napa, California 94559
Office: (707) 259-8645
Mobile: (707) 363-1783
www.napa.lafco.ca.gov
Like Us

From: Cameron Pridmore <cameron@cmpengineering.com>
Sent: Thursday, September 19, 2019 3:23 PM
To: Freeman, Brendon <bfreeman@napa.lafco.ca.gov>
Subject: 00067 - Hendry Winery Proposed Non-Community Transient Water System

Hi Brendon,

It was good speaking with you today. When you get a chance could you respond to this email just confirming that you and I discussed the subject proposed public winery water system located at the Hendry Winery, 3104 Redwood Road, Napa, CA (APN: 035-120-031) . Also could you confirm that LAFCO has no intention of extending Napa City's public water service to the subject winery. Thank you for your help in this matter.

Regards,

Cameron Pridmore PE, PLS
CMP Civil Engineering & Land Surveying Inc
P-(707) 266-2559