

# ROCCA WINERY

Napa County, CA

## WASTEWATER FEASIBILITY REPORT

Project# 4109006.0  
February 17, 2010

Prepared by



Riechers Spence & Associates  
1541 Third Street  
Napa, CA 94559

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(707) 252-4966 f

Project #4109006.0  
February 17, 2010

### **Introduction and Project Description**

The owners of the parcel with APN 057-170-007 propose to develop a winery on the subject parcel with an anticipated production of 20,000 gallons per year (8,300 cases). This report demonstrates the feasibility of accomplishing the above proposal with respect to the required handling of the wastewater generated by the winery process and domestic sanitary sewer elements of the proposed project.

The subject parcel is located at 129 Devlin Road, approximately 1,000 feet south of the intersection of CA Hwys 29/12 and Soscol Ferry Road. A Vicinity Map is included in Appendix A. The site's topographic gradients are generally consistent in the 2% to 5% range..

### **Site Evaluation**

A site evaluation to excavate soil test pits for locating the dispersal field was conducted on March 12, 2009 by Marc Foster with Riechers Spence and Associates, and attended by Melinda Marculewicz with Napa County Environmental Management. A total of seven (7) pits were excavated, and pits 1, 2, 5, and 6 were found to have acceptable soil – typically consisting of gravelly clay with rock. The results of the site evaluation, including test pit maps are provided in Appendix B.

### **Process Wastewater System**

#### **Process Wastewater Flow Estimate**

Based on a winery producing 20,000 gallons per year of wine, the peak daily process wastewater flow is estimated as follows:

$$Peak\ Day\ Flow = \frac{Annual\ production(gallons) \times 1.5}{30\ Day\ Harvest\ Period}$$

$$Peak\ Day\ Flow = \frac{20,000\ gallons \times 1.5}{45\ Day\ Harvest\ Period} = 660\ gpd$$

Project #4108069.0  
February 17, 2010

Total annual process wastewater flow is estimated as follows:

*Total Annual Flow= Annual production(gallons) x 5 gallons waste per gallon of wine*

*Total Annual Flow= 20,000 gallons x 5 gallons waste per gallon of wine=100,000 gallons*

### **Proposed Winery Process Wastewater System**

For this facility, the proposed method of handling and disposal of the winery process wastewater is through "hold and haul". On-site (including subsurface) disposal is not recommended for winery process wastewater due to the limited area suitable for dispersal.

A "hold and haul" system will include the temporary storage of all process wastewater, which will subsequently be off-hauled to an off-site disposal facility. Napa County Design Guidelines for this system requires a total storage volume equivalent to seven days of peak process waste flow. This equates to 4,620 gallons of required storage for the proposed project. This volume will be provided through two (2) 2,500 gallon septic tanks. A septic tank is proposed, as opposed to simply a holding tank, as it better affords future conversion to and implementation of a treatment system.

### **Sanitary Wastewater System**

A separate wastewater system is proposed to treat and dispose of all sanitary wastewater generated by the project, including those from the winery production facilities and tasting room.

### **Sanitary Wastewater Flow Estimate**

The projected peak daily sanitary wastewater flow has been estimated from the projected number of visitors and employees. This data is summarized in Table 2. Rates for each type of occupancy are taken from Table 4 of the March 2006 Memorandum from the Napa County Department of Environmental Management re: New ASTS Design Guidelines. From Table 2 the total projected peak flow is 600 gallons per day.

Table 2: Projected Sanitary Wastewater Flow

Type of Occupancy	Number	Rate	Total Flow
Tasting Room Visitors	50	3 gpd / person	150 gpd
Event Visitors	20	15 gpd / person	300 gpd
Staff (Tasting Room, Cellar, and Administrative)	10	15 gpd / person	150 gpd
Peak Daily Sanitary Wastewater Flow			600 gpd

From a water-usage standpoint (See Appendix C : Will-Serve application letter to the City of American Canyon), given the projected annual limit of 237,240 gallons of domestic water to be drawn from the City of American Canyon's water system, of which 100,000 gallons shall be used for winery production, the remaining water available for winery visitation amounts to 137,240 gallons per year. Based on the combination of tasting, event, and staff noted in Table 2 for a given day's operations, the proposed winery visitation will be limited to approximately 228 such days, amounting to an average of at least 4 days per week.

### Proposed Sanitary Wastewater System

The sanitary wastewater system will be designed to treat the peak daily flow of 600 gpd. The design proposal is for an engineered septic system consisting of standard septic tanks in combination with an Orenco Advantex AX-20 treatment system, with final discharge to a Geoflow subsurface drip dispersal system due to the limited soil depth in the qualified disposal areas. The system will be designed to treat the wastewater to meet the Napa County drip dispersal discharge limitations of 30 mg/l BOD and 30 mg/l TSS. Preliminary analysis indicates that one AX-20 treatment pod will be required to meet these treatment goals.

Referring to Table 13 of the Napa County regulations, a Geoflow system installed in Silty Clay Loam with strong to moderate, sub-angular blocky structure, will accept 0.4 gpd/sf of effluent. The Geoflow field area is therefore:

$$\text{Geoflow Field Area} = \frac{600 \text{ gpd}}{0.4 \text{ gpd / sf}} = 1,500 \text{ square feet}$$

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The slope (7%) in the proposed disposal areas allows Geoflow lines to be spaced at 2' on center. In addition to the primary dispersal area, a 3,000 square foot (minimum 200%) reserve area is required. Therefore, the total requirement for winery primary and reserve dispersal areas is 4,500 square feet.

The primary and reserve areas are shown on the Utility Plan, Sheet UP3 of the Use Permit Plan Set.

### **Future Alternatives**

In addition to the above, another alternative – perhaps for future consideration – is the possibility of connecting to the Napa Sanitation District's facilities (8" VCP), which exist approximately 1,100 feet due south of the project parcel. Current impediments for this option include the need for LAFCO annexation (the subject parcel is beyond the district's service area, but within its sphere-of-influence); the likely need for easement acquisition; and extension of the service infrastructure.

### **Conclusions**

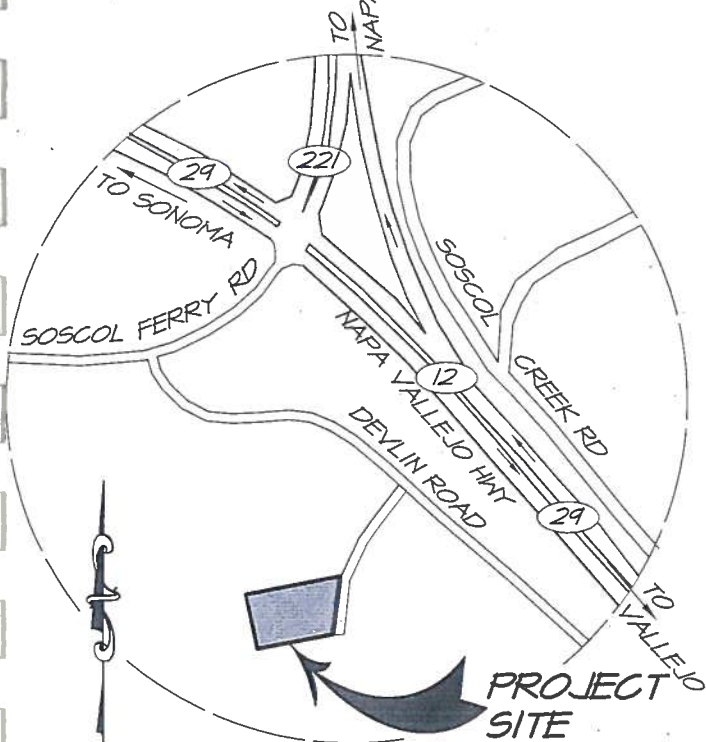
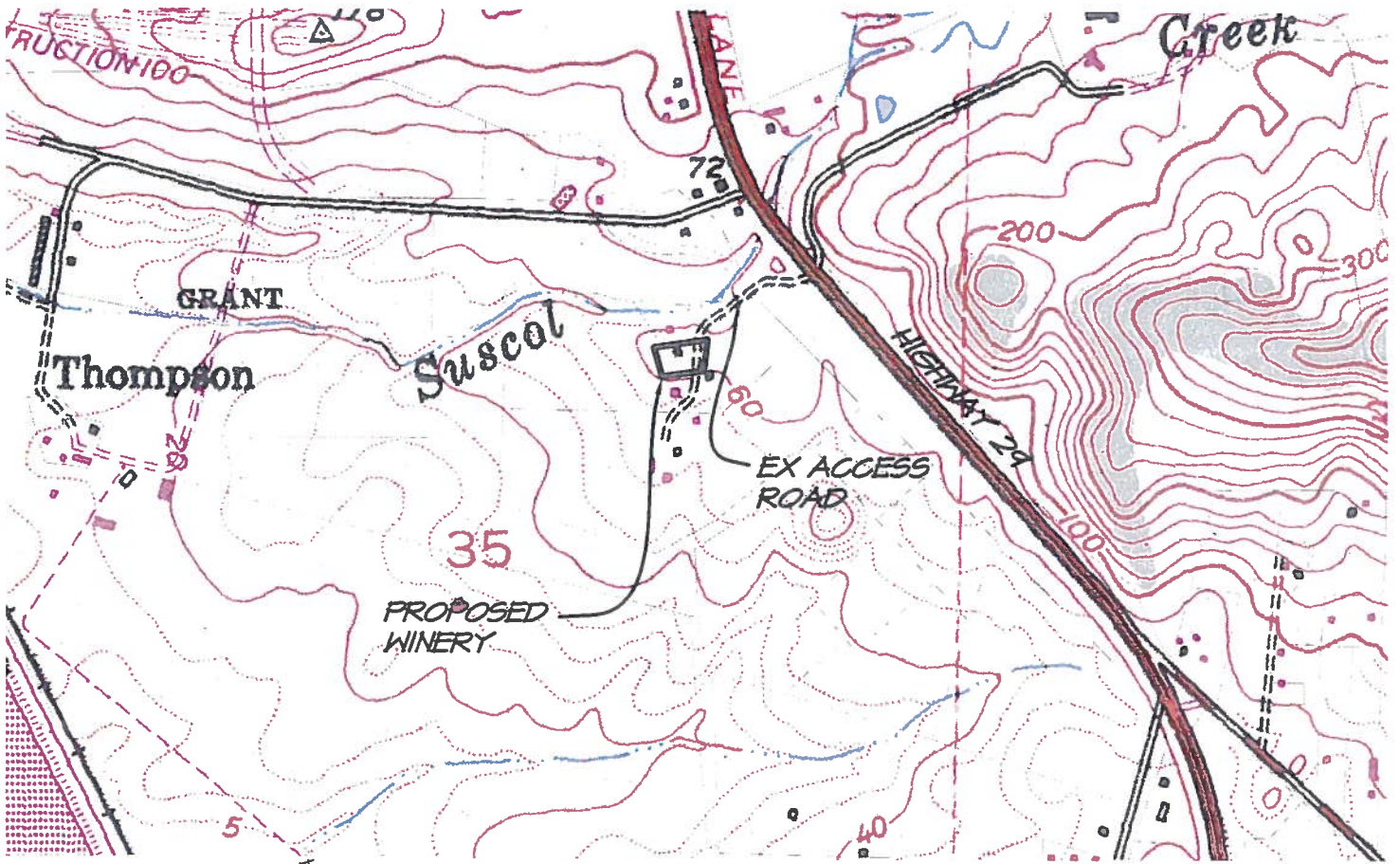
The above report demonstrates that it is feasible to construct a system to hold all process wastewater for subsequent disposal offsite. As previously noted, application of a septic tank for holding storage will also better facilitate the potential for future implementation of a treatment system.

Likewise, the report also demonstrates that it is feasible to construct an on-site sanitary wastewater treatment system with pre-treatment and subsurface drip disposal to accommodate the proposed winery development and appurtenant facilities.

# Appendix A

ROCCA WINERY  
 USGS - VICINITY MAP  
 NAPA COUNTY, CALIFORNIA

SCALE: 1" = 1000'



LOCATION MAP

NO SCALE

APN: 057-170-007  
 ALL LOCATION INFORMATION IS APPROX.  
 LAT. 38°14'17" N, LONG. 122°16'10" W

USGS NAPA QUADRANGLE



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 Napa, Calif. 94559  
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# Appendix B





# CIVIL ENGINEERING SERVICES

Land Planning, Civil Engineering and Surveying Services  
for projects large and small:

Residential Subdivision-Condos-Apartments • Commercial-Industrial  
Resort-Hotel • Winery-Vineyard • Estate Residential • Wastewater

Date: March 26, 2009 Job #: 4109006.0

To: Melinda Marchlewicz

Napa County Environmental Management

1195 Third Street, Suite 101

Napa, Ca 94559

cc: \_\_\_\_\_

Re: Rocca Winery Due Diligence

We are sending you via \_\_\_\_\_ Delivered \_\_\_\_\_ the following items:

Copies	No. of Sheets	Descriptions
1	4	Site Evaluation
1	1	11 x 17 Site Plan

REMARKS:

Melinda,

Here are the site evaluation results for 129 Devlin Road, APN 057-170-007. Please let me know if you have any questions or comments.

Marc

NAPA  
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rsacivil@rsacivil.com

1980 - 2009

**29**

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Napa County Department of  
 Environmental Management

**SITE EVALUATION REPORT**

Please attach an 8.5" x 11" plot map showing the locations of all test pits triangulated from permanent landmarks or known property corners. The map must be drawn to scale and include a North arrow, surrounding geographic and topographic features, direction and % slope, distance to drainages, water bodies, potential areas for flooding, unstable landforms, existing or proposed roads, structures, utilities, domestic water supplies, wells, ponds, existing wastewater treatment systems and facilities.

Permit #: E09-00083	
APN: 057-170-007	
(County Use Only) Reviewed by:	Date:

PLEASE PRINT OR TYPE ALL INFORMATION

Property Owner Chase Bank			<input type="checkbox"/> New Construction <input type="checkbox"/> Addition <input checked="" type="checkbox"/> Remodel <input type="checkbox"/> Relocation <input type="checkbox"/> Other:		
Property Owner Mailing Address 129 Devlin Rd			<input type="checkbox"/> Residential - # of Bedrooms:    Design Flow :    gpd		
City Napa	State Ca	Zip 94559	<input checked="" type="checkbox"/> Commercial - Type: Winery Sanitary Waste: 400    gpd    Process Waste: 600    gpd		
Site Address/Location			<input type="checkbox"/> Other: Sanitary Waste:    gpd    Process Waste:    gpd		

**Evaluation Conducted By:**

Company Name Riechers Spence & Associates		Evaluator's Name Marc Foster with Melinda Marculewicz, Peter EX from Napa D.E.M.		Signature (Civil Engineer, R.E.H.S., Geologist, Soil Scientist) <i>M. Foster</i> RCE 74158	
Mailing Address: 1541 Third Street				Telephone Number 707-252-3301	
City Napa	State CA	Zip 94559	Date Evaluation Conducted March 12, 2009		

<u>Primary Area</u>		<u>Expansion Area</u> Some pits listed in primary area to be used for Reserve. Layout TBD.	
Acceptable Soil Depth: 24 in.    Test pit #'s: 1,2,5,6		Acceptable Soil Depth: +24 in.    Test pit #'s:	
Soil Application Rate (gal. /sq. ft. /day): 0.6		Soil Application Rate (gal. /sq. ft. /day): 0.6	
System Type(s) Recommended: Drip Dispersal		System Type(s) Recommended: Drip dispersal	
Slope: <10 %.    Distance to nearest water source: + 100 ft.		Slope: <10 %.    Distance to nearest water source: +100 ft.	
Hydrometer test performed?	No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> (attach results)	Hydrometer test performed?	No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> (attach results)
Bulk Density test performed?	No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> (attach results)	Bulk Density test performed?	No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> (attach results)
Percolation test performed?	No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> (attach results)	Percolation test performed?	No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> (attach results)
Groundwater Monitoring Performed?	No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> (attach results)	Groundwater Monitoring Performed?	No <input checked="" type="checkbox"/> Yes <input type="checkbox"/> (attach results)

Site constraints/Recommendations:  
 Pits 3 & 4 are marginal. Acceptable soil depth varies from 18" to 24" across pit. Recommend avoiding the area between pits 3 and 4, which includes the area over pit 7.

Test Pit #  1  Acceptable  
 Not Acceptable

X = Limiting Condition	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)	
						Side Wall	Ped	Wet				
	0-24	G	10-20	SiCL	S/SB	S	VFRB	SS	M/F	M/VF	-	
X	24-40	Bottom	60-70	Gravelly Clay with Rock								
Notes:												

Test Pit #  2  Acceptable  
 Not Acceptable

X = Limiting Condition	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)	
						Side Wall	Ped	Wet				
	0-30	G	10-20	SiCL	S/SB	S	VFRB	SS	M/F	M/VF	-	
X	30-36	Bottom	60-70	Gravelly Clay with Rock								
Notes:												

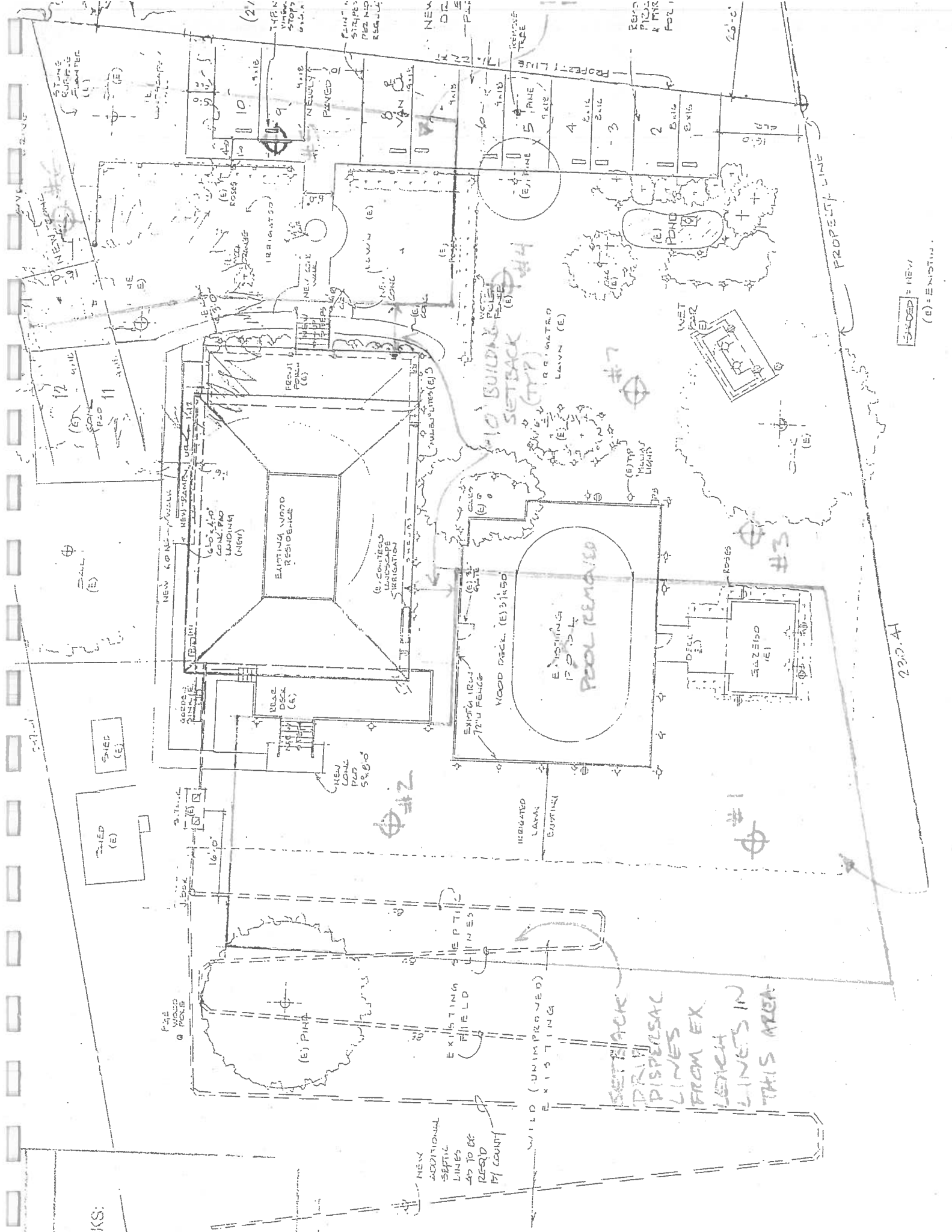
Test Pit #  3  Acceptable  
 Not Acceptable

X = Limiting Condition	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)	
						Side Wall	Ped	Wet				
	0-18 ~ 0-24	G	10-20	SiCL	S/SB	S	VFRB	SS	M/F	M/VF	-	
X	18-30 ~ 24-30	Bottom	60-70	Gravelly Clay with Rock								
Notes: Pit is marginal. Depth of limiting clay/rock layer varies from side-to-side of pit from 18" to 24".												



Test Pit # 7  Acceptable  
 Not Acceptable

X = Limiting Condition	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)	
						Side Wall	Ped	Wet				
	0-18 ~ 0-24	G	10-20	SiCL	S/SB	S	VFRB	SS	M/F	M/VF	-	
X	18-30 ~ 24-30	Bottom	60-70	Gravelly Clay with Rock								
Notes: Pit is marginal. Depth of limiting clay/rock layer varies from side-to-side of pit from 18" to 24". Soil at this pit was very wet.												



[ ] = NEW  
 ( ) = EXISTING

22.0.A

JKS:

NEW  
 ADDITIONAL  
 SEPTIC  
 LINES  
 TO BE  
 RECORDED  
 IN  
 COUNTY

SETBACK  
 FROM EX  
 LINES  
 LEACH  
 LINES IN  
 THIS AREA

WILD (UNIMPROVED) EXISTING

EXISTING FIELD LINES

(E) PINE

NEW LOCAL PAD 58.00'

REAR DECK (E)

EXISTING WOOD RESIDENCE

PERMI PERM (E)

NEW CONCRETE LANDING (NEW)

NEW STAIRS

NEW GARAGE

NEW DRIVE

NEW TREE

NEW STRIPES PER NEW REGUL.

NEW MULCH

NEW POND

NEW NET

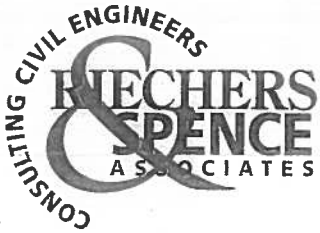
NEW LIGHTS

NEW FENCE

NEW PROJECT LINE

NEW 22.0.A

# Appendix C



#4109006.0  
February 17, 2010

Cheryl Braulik  
City of American Canyon  
Public Works Department  
3423 Broadway, Suite D-2  
American Canyon, CA 94503

RE: Rocca Winery (129 Devlin Road; APN 057-170-007)  
"Will Serve" Letter for Water

Dear Cheryl:

The owners of the above referenced property are in the process of preparing a Use Permit application for the subject parcel. The property is zoned as IP:AC (Industrial Park: Airport Compatibility). A 2,000 square foot residential structure exists on-site and is planned for conversion to accommodate winery visitation. In addition, a new 6,500 square foot building is proposed to serve as the winery's processing facility.

It is anticipated that the proposed use will require an average of approximately 650 GPD of potable water with a maximum annual usage of approximately 237,240 gallons from the city's potable water system. This demand from the city's distribution system is comprised of the anticipated domestic use and winery process activities. It is expected that irrigation water will be provided through the construction of a new on-site well.

On average, the project will generate approximately 274 GPD of winery process wastewater (100,000 gallons annually), and 376 GPD of domestic sanitary wastewater (137,240 gallons annually). The winery process wastewater shall be collected and disposed via 'hold and haul', while the domestic sanitary sewer shall be treated via on-site septic system and dispersal.

We appreciate your assistance in providing the necessary "Will Serve" letter.

Yours truly,

A handwritten signature in black ink that reads "Ronald Ranada".

Ronald Ranada, P.E.  
Project Engineer

R.C.E.#68827

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### City of American Canyon Will Serve Questionnaire

Date: December 10, 2009

Owner Name: Mary Rocca

Applicant Name: Same

Owner Address: 129 Devlin Road, Napa, CA 94559

Applicant Address: Same

Owner Phone #: (707) 257-8467

Applicant Phone #: Same

Owner Signature:

Project Engineer: Ronald Ranada

Project Name: Rocca Winery

Project Address: 129 Devlin Road

Project APN: 057-170-007

Project Description: Conversion of 2,000 SF residential structure to accommodate winery visitation; construction of new 6,500 SF winery processing facility

Permit Number: UP Submitted

Time of Operation: 8am to 4pm

Status of Environmental Clearance: Pending

hours/day: 8

Permit Status: In Process

days/week: 6

Land Use: Commercial

months/year: 12

Property Zoning: IP:AC

Lot Size (acres): 1

Building Size (sqft) : 2,000 SF (exist.), 6,500 SF (new)

#### Anticipated Potable Water Demand\*

Average day demand (annual):

Maximum day demand (x2 peak factor):

domestic 376 gpd

domestic 752 gpd

irrigation 0 gpd

irrigation 0 gpd

industrial 274 gpd

industrial 548 gpd

Total 650 gpd

Total 1,300 gpd

\* attach references used and calculations for water demand

The City of American Canyon Municipal Code 13.10 (Code) gives first priority for new water and sewer connections and services to residences and businesses located within the city corporate boundary. The Code states the City shall provide water and sewer connections and services to other residences and businesses located within the urban limit line of the city only after one of the following two conditions has occurred; upon annexation to the city and the district, where that has not already occurred; or upon securing a revenue sharing agreement involving the county, the city and where applicable the district. The Code also states the City may provide water service to developments outside of the city urban limit line but within the water service area of city, as available, provided the applicant agrees to an "in lieu of" revenue-sharing agreement with city.

If outside the corporate city boundary please describe how you intend to address the provisions of the Code.



#4109006.0  
November 9, 2010

Kim Withrow  
Napa County Dept. of Environmental Management  
1195 Third Street, Suite 101  
Napa, CA 94559

RE: Rocca Winery Wastewater Feasibility Report - Amendment

Dear Kim:

This letter is to serve as an amendment to the Rocca Winery Wastewater Feasibility Report, dated February 17, 2010 prepared by Riechers Spence and Associates. This amendment addresses the revision to the domestic reserve area to accommodate a setback clarification on domestic wastewater flows along with verification of an adequate reserve system.

#### **Reserve Area**

The request to incorporate a required setback along the property frontage impacts one of two reserve fields. The expanded setback implemented is 10-feet per the September 13<sup>th</sup> email from Kim Withrow to Donna Oldford (attached). The needed 200% reserve area is 3,000 square feet. Incorporating the setback the combined reserve area is 3,565 square feet exceeding the 200% requirement. The revised reserve area is shown in the revised Use Permit Civil Plans, a reduced copy is attached.

#### **Kitchen Wastewater Flows and Grease Interceptor**

The winery domestic wastewater system design accounts for the peak flows based upon the proposed use. The winery includes four types of activities that contribute to domestic wastewater generation; tasting room visitors, wine club events, private events and staff. The tasting room visitors are provided wine tasting only. The events will include catered food service. Catering service will include off-site food preparation with utensil disposal and cleaning. The design rates for peak wastewater flows are assigned per Napa County regulations. The following table is the revised project wastewater peak flows. The peak flow for the system design will remain at 600 gpd per the Wastewater Feasibility Report.

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Tel: 707.252.3301 Fax: 707.2524966

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**Project Wastewater Peak Flows:**

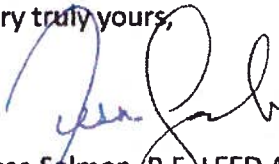
Type of Activities	Number [persons]	Rate [gpd/person]	Total Flow [gpd]
Tasting Room Visitors – Tasting (no meals)	32	3	96
Wine Club Event – Wine & Food (catered)	50	3	150
Private Event – Wine & Dinner (catered)	50	3	150
Staff (tasting room, cellar and admin)	10	15	150
<b>Peak Daily Sanitary Wastewater Flow</b>			<b>546</b>

**Hold and Haul Reserve System**

The winery process wastewater will be handled by a hold and haul system. The Wastewater Feasibility Report identifies the hold and haul reserve system as connecting to Napa Sanitation District. The property is currently located within the Napa Sanitation District's sphere of influence but not within the sewer district. The District issued Conditions of Approval, dated September 3, 2010, as part of its review. The COA demonstrates that the project is not currently required to connect but it will serve the Winery "should sewer facilities become available in the future, the subject parcel would...receive sewer service." At the time the project elects or is required to connect to the District, the appropriate process will be completed. This will include annexation through LAFCO, documenting the pertinent easements, payment of appropriate connection and inspection fees, and shall be subject to all applicable rules and regulations of the District. Additional conditions of approval may be established by the District at the time a formal application is submitted.

The above items and attached revised Use Permit Civil Plans shall be considered a part of the Wastewater Feasibility Report. If you have any questions or require additional information, please contact me.

Very truly yours,

  
Jesse Salmon, P.E., LEED AP  
Project Engineer





#4109006.0  
November 19, 2010

Kim Withrow  
Napa County Dept. of Environmental Management  
1195 Third Street, Suite 101  
Napa, CA 94559

RE: Rocca Winery Wastewater Feasibility Report - Amendment 2

Dear Kim:

This letter is to serve as the second amendment to the Rocca Winery Wastewater Feasibility Report, dated February 17, 2010 prepared by Riechers Spence and Associates. This amendment addresses the revision to the domestic waste generation rates as discussed during our meeting on November 18, 2010.

The project will not include a commercial kitchen. Our understanding is that "catered events", regardless of type, will generate 6 gallons/person/event. Our revised peak daily wastewater flows are shown in the table below:

Project Wastewater Peak Flows:

Type of Activities	Number [persons]	Rate [gpd/person]	Total Flow [gpd]
Tasting Room Visitors – Tasting (no meals)	32	3	96
Catered Event	50	6	300
Staff (tasting room, cellar and admin)	10	15	150
<b>Peak Daily Sanitary Wastewater Flow</b>			<b>546</b>

If you have any questions or require additional information, please contact me.

Very truly yours,

Carl Butts, P.E., LEED AP  
Project Manager

cc: Donna Oldford, Plans for Wine  
Sean Trippi, Napa County Planning

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Tel: 707.252.3301 Fax: 707.2524966

