EXHIBIT A

RAM ENGINEERING

WASTEWATER & CIVIL ENGINEERING

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July 23, 2013

Napa County Planning, Building,
& Environmental Services
1195 Third Street, 2nd Floor
Napa, CA 94559

Attention: Ms. Kim Withrow, REHS

Re: Domaine Carneros Winery
1240 Duhig Road
APN 047-070-007
Wastewater Feasibility Study
RAM Project No. 2001

Dear Ms. Withrow,

The purpose of this letter is to provide an updated Wastewater Feasibility Study for the Domaine Carneros Winery. RAM Engineering has prepared this Wastewater Feasibility Study for the purpose of assessing the onsite sanitary wastewater system treatment and disposal capacity necessary for the proposed use.

The sanitary wastewater (SW) consists of wastewater from the laboratory, tasting room, break room, and restroom facilities. The existing SW wastewater management system consists of a series of SW septic tanks, a SW sump tank, a commercial grade pre-treatment unit, and a subsurface drip dispersal system.

This Feasibility Study will show that the existing sanitary wastewater management system described above and herein is adequate to treat and dispose of the projected SW flows generated from the existing winery facility. To assist you in the evaluation of the above conclusions, the following information is enclosed:

Attachment I: Wastewater System Flow Diagram

Attachment II: Wastewater System Design Criteria, Evaluation, & Calculations

Attachment III: Common Ground Resources Biological Treatment Unit

The attached information regarding the proposed improvements should be sufficient for review at the Use Permit level. If you have any questions or require further information, please feel free to contact me at (707) 824-0266.

Sincerely,

REGISTERED ENVIRONMENTAL HEALTH SPECIALIST
TAMARA ANN MARTIN
No. 7264
EXP. 12-31-14
STATE OF CALIFORNIA

Tamara Martin, REHS

Attachments

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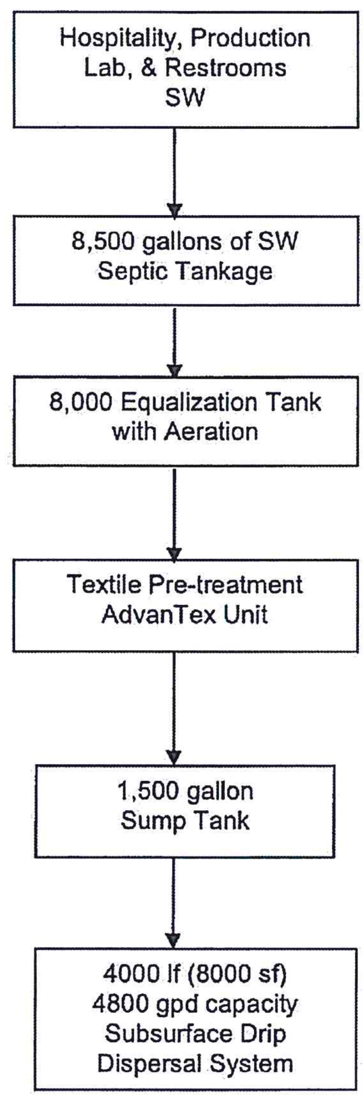
ATTACHMENT I

**SANITARY WASTEWATER
MANAGEMENT SYSTEM
FLOW DIAGRAM**

SANITARY WASTEWATER
MANAGEMENT SYSTEM
FLOW DIAGRAM

Sanitary Wastewater



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ATTACHMENT II

SANITARY WASTEWATER MANAGEMENT SYSTEM DESIGN CRITERIA, EVALUATION, AND CALCULATIONS

Domaine Carneros Winery

1240 Duhig Road
Napa, California

SANITARY WASTEWATER MANAGEMENT SYSTEM
DESIGN CRITERIA & EVALUATION

Sanitary wastewater (SW) at the existing winery consists of typical wastewater generated from hospitality, restrooms, and laboratory facilities. Any large, special events that include food service are catered. As a result, there is no kitchen waste or dishwashing associated with this project. Based on the fact that events include a large number of guests and the percentage of actual guests who use the restroom will not be 100%, a generation rate of 3 gpd per person for catered special events is being used. Proposed SW flows are projected as follows:

EXISTING & PROJECTED SW FLOWS

AVERAGE WEEKDAY:

40 full-time employees x 15 gpcd	=	600
600 tasting visitors x 3 gpcd	=	1800
Total	=	2400 gpd

AVERAGE WEEK DAY W/ MARKETING EVENT:

40 full-time employees x 15 gpcd	=	600
600 tasting visitors x 3 gpcd	=	1800
50 event guests w/out meals x 3 gpcd	=	150
Total	=	2250 gpd

AVERAGE WEEK DAY W/ SPECIAL EVENT:

40 full-time employees x 15 gpcd	=	600
600 tasting visitors x 3 gpcd	=	1800
300 event guests (catered) x 3 gpcd	=	900
Total	=	3300 gpd

AVERAGE WEEKEND DAY:

23 full-time employees x 15 gpcd	=	345
1000 tasting visitors x 3 gpcd	=	3000
Total	=	3345 gpd

AVERAGE WEEKEND DAY W/ SPECIAL EVENT:

23 full-time employees x 15 gpcd	=	345
1000 tasting room visitors x 3 gpcp	=	3000
300 event guests (catered) x 3 gpcd	=	900
Total	=	4245 gpd

PEAK HARVEST WEEKDAY:

40 full-time employees x 15 gpcd	=	600
25 part-time employee x 7.5 gpcd	=	187.5
600 tasting visitors x 3 gpcd	=	1800
Total	=	2587.5 gpd

PEAK HARVEST WEEKEND DAY:

40 full-time employees x 15 gpcd	=	600
25 part-time employee x 7.5 gpcd	=	187.5
1337 tasting visitors x 3 gpcd	=	4011
Total	=	4798.5 gpd

PEAK HARVEST WEEKEND DAY W/ EVENT:

40 full-time employees x 15 gpcd	=	600
25 part-time employee x 7.5 gpcd	=	187.5
300 event guests w/out meals x 3 gpcd	=	900
1037 tasting visitors x 3 gpcd	=	3111
Total	=	4798.5 gpd

Maximum & Design SW flow = 4798.5 gpd SW = **4800 gpd SW**

In summary, the sanitary system is sized for and will accommodate a maximum of the following: 40 full time employees, 25 part time employees, 1337 tasting room visitors assuming no special evens, or 1037 tasting room visitors, with special events of up to 300 persons on a peak day.

SW SEPTIC TANK

The required total septic tank size for the projected SW flows based on the Manual of Septic Tank Practice is as follows:

$$\begin{aligned} V &= 1.5 \times Q \\ &= 1.5 \times 4800 \text{ gpd} \\ &= 7200 \text{ gallons} \end{aligned}$$

There are currently the following existing septic tanks installed: two 2000-gallon septic tanks, three 1500-gallon septic tanks, and one 8,000 gallon equalization tank with aeration (installed in 2011) for a total of 16,500 gallons of septic tankage. The existing septic tankage more than adequately meets the minimum amount required.

SW LEACHFIELD

In March 2000, RAM Engineering and the Napa County Department of Environment Management (NCDEM) conducted a site evaluation. The purpose of the evaluation was to determine a suitable site for a repair septic system to replace the failing existing ETI bed. Acceptable soil to a depth of 32" with an assigned perc rate of 1-3 inches per hour was found in the meadow east of the lower parking lot. On July 18, 2000 plans were approved to install dual mounds in that meadow. A final letter from Tamara Martin of RAM Engineering dated November 28, 2000 indicated that both mounds were installed per plan. In 2005, an inspection of the mound systems by this office and NCDEM found both mound systems suffered extensive gopher damage and as a result were beyond repair. At that time, a new subsurface drip dispersal system was designed by RAM Engineering, approved by NCDEM, and installed by McCollum General Engineering. A final letter from Tamara Martin of RAM Engineering dated August 31, 2006 indicated that the drip system had also been built per plan.

Based on the fact that there is limited soil on site and two septic systems had already failed, the drip system was originally oversized to provide a safety factor as a "built in reserve area". However, now that approved package treatment plants for sanitary wastewater are available, the required reserve area will be accommodated by a Common Ground Resources (model CGRMOD20), 4800 gallon per day, treatment facility, or equivalent (see attached information for the CGR unit). The following system design parameters were used in the design and construction of the existing sanitary wastewater subsurface drip dispersal system currently serving Domaine Carneros:

Sanitary Drip Design Criteria:

- Design Flow = 4800 gpd
- Application Rate = 0.200 gallons/s.f./day

- Depth of drip lines = 10" below finish grade. This included 2" of topsoil, therefore, the lines are 8" into native ground.

- Ground slope is approximately 2 %

  Primary Drip System Leachfield:

- Total Square footage required = 24,000 s.f.

- Total linear feet of drip line required = 12,000 l.f.

- Square footage per subfield (three subfields total) = 8,000 s.f.

- Total linear feet of drip line per subfield = 4,000 l.f.

- Spacing of Drip lines = 2' o.c.

- Spacing of Drip emitters = 2' o.c.

- Length of each Wasteflow line (Subfields 1 and 2) = 200 l.f.

- Length of each Wasteflow line (Subfield 3) = 125 l.f.

- Overall dimensions of subfields 1 and 2 grid = 40' x 200' = 8,000 s.f.

- Overall dimensions of subfield 3 grid = 64' x 125' = 8,000 s.f.

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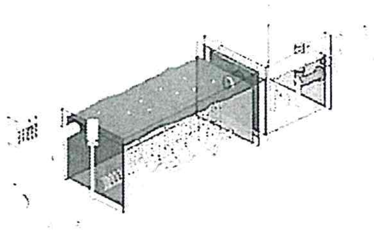
ATTACHMENT III

COMMON GROUND RESOURCES, INC.
MOD20 BIOLOGICAL TREATMENT UNIT

CGR Model 25
Operating Principles



common ground
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main (707) 824-9730
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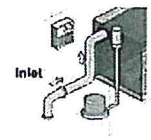
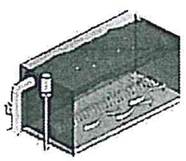
email info@cg-resources.com



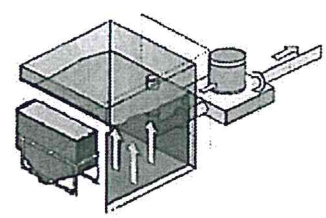
The Common Ground Resources (CGR) system utilizes the extended aeration method of Waste Water treatment. The first operation of the CGR unit is the entry of the effluent from a pump sump into the unit followed by a coarse screening process, which occurs at the inlet of the aeration chamber. As the winery wastewater WW enters the treatment unit, it passes through a SCREEN.

Aeration: As the wastewater passes through the screen, it flows into the **aeration chamber.** The aeration chamber is the most important function the CGR wastewater treatment system, and is usually sized to provide a 24-hour retention time for the daily average flow volume of process wastewater. In the aeration chamber, the incoming effluent is mixed with water that contains a large concentration of active aerobic bacteria which consume the organic waste material present. Air flowing up through the liquid from the DIFFUSERS keeps the bacteria in suspension, and provides the necessary amount of oxygen required by the bacteria for their respiration and digestion process. The airflow through the liquid provides the appropriate agitation necessary to keep solids from settling as well as assists in disintegrating solid waste material in the wastewater. The bacteria in the aeration chamber will stick together in flakes of sludge referred to as biofloc or "floc". This floc becomes uniformly mixed in the aeration chamber as a result of the agitation described earlier. The floc is easily separated from the water during the treatment process.



Separation process: The next steps consist of clarification and settling. After a calculated retention time in the aeration chamber, all liquid is gradually displaced by additional waste-water flowing into the waste-water treatment unit. The displaced liquid flows around a baffle and through an opening into a separate chamber called the CLARIFIER.

Clarification Process: The clarifier is volumetrically sized to allow a minimum retention time for the liquid flowing through this chamber. This minimum retention time is necessary to ensure solids settling separation from the liquid. In contrast to the liquid in the aeration chamber, the liquid in the clarifier is kept as still as possible to allow the sludge to flocculate and settle to the bottom. This settling process separates the sludge from the clear liquid flowing downward and upward around the clarifier baffle.



The floc that has settled to the bottom of the clarifier is continuously drawn up by the airlift **sludge return** line and discharged back into the aeration chamber. Any floating material in the liquid flowing into the clarifier is contained by the **clarifier baffle** and drawn into the **skimmer return line**. The floating material is then discharged back into the aeration chamber. Both the skimmer and sludge return lines operate by using air from the air supply system (blower or compressor). The air is injected into both the skimmer and sludge return lines.

As the resulting air bubbles rise, they displace the liquid in the lines. This displacement develops a suction at the inlet to each line.

The clear liquid at the top of the clarifier, outside the clarifier baffle, is also eventually displaced from the clarifier over a **weir** then discharged.

Chlorination of the treated wastewater produces a finished product that meets and exceeds the Coast Guard standards for discharge directly to State, Federal, and International waters.

common ground

Design Criteria Sheet

I. Estimated Flow and Runoff Period

(a) Design Basis =	4800	Gallons per day (GPD)
	1	System (s)
(b) Estimated Daily Flow =	4800	GPD
(c) Runoff Period =	24	Hours

(Runoff period is the number of hours per day in which total flow is received)

II. Estimated Biochemical Oxygen Demand (BOD)

Design Standard - BOD is a measure of the strength of the water, domestic sewage has approximately 1.67 lbs. of 5-day BOD per 1,000 gallons of waste - based on 210 parts per million (ppm) sewage strength.

(a) Total lbs. of $BOD_{winerywst}$ = **100** lbs. per day

(b) If sewage strength is estimated to be other than 210 ppm, parts per million can be converted to lbs.

Total lbs.=

Winery waste is 100 lbs per day 2400 gallons

III. Air Requirements

Design Standard - common air supply design is 2,100 cuff. of air per pound of BOD to be treated.

(a) Total air required =

2,100 cu.ft.*___lbs. BOD/day =____cu.ft./day — **210,000**

145.83 CFM

(b) Air Supplied

Typical Blower air production — **120** CFM @ 6psi

(Air supplied is generally higher than air required - this is done to allow for intermittent operation of the sewage treatment plant during lower period of flow)

IV. Aeration Chamber Design

Design Standard - Common aeration chamber loading is 15 lbs. of BOD per day per 1,000 cu. ft. of aeration chamber

(a) $Volume_{required}$=

Gallons with minimum Oxygen delivered	50,000	
Oxygen requirements		
O_2 Requirement	1.2	lb O2 / lb BOD
O_2 Required for BOD Removal	120	lb/day
Planned Aeration Time	72	hrs./day
O_2 Transfer Adjustment Factor	0.65	
Diffusers		
Standard O_2 Transfer Efficiency (Fine bubble diffusers)	0.18	
Assumption 1 scf air = 0.0173 lbs oxygen assuming 100% transfer	8,968	lbs/retention time
Calculation of O2 Delivered over retention time>	1,061	lbs

Using Standard Blower from III (b) above,and a retention time of 72 hours total retention time, 1061.424 pounds of O2 are delivered

Volume Reduction of chamber due to additional O2 delivery	9
Effective size due to Additional Oxygen delivery	5,653

V. Settling Chamber

Design Standard - Common settling chamber design is to allow for 4 hours retention of the daily flow if the runoff period is 24 hours. If the runoff period is less than 24 hours, allow for 2.5 hours minimum retention time during the runoff period

a) $Volume_{required}$= Gallons

a) Volume required minimum=	800	gallons
b) Recommended 25% of Aeration	1413	gallons

VI. Chlorine Contact Chamber Design

Design Standard - Common chlorine contact chamber design is to allow for 30 minutes retention time of the daily flow. As high as 2-3 hours retention time may be required based on the local requirements.

(a) Required volume = Estimated daily flow* (retention time in minutes/1,440 minutes)

	60	Minutes
	200	Gallons
Design Factor 4	800	Gallons

VII. Sludge Holding Chamber Design (optional, bacteria will digest sludge if working properly)

Design Standard - Common sludge holding chamber design is to allow for 2 cu. ft. of holding chamber volume per 100 gallons

(a) $Volume_{required}$=

Required volume = ft^3 * 7.5 * GPD= $Gallons_{Required}$

720	cu. ft.
5,400	Gallons

Description of Individual Units

Primary Treatment

One manual basket static solids filter to remove particle solids > 20 mm (according to our design).

Material : SS AISI 304.

Capacity 0.3 m3.

Installation: Integrated as part of the biological treatment system.

Secondary Treatment

The secondary treatment is composed of the following:

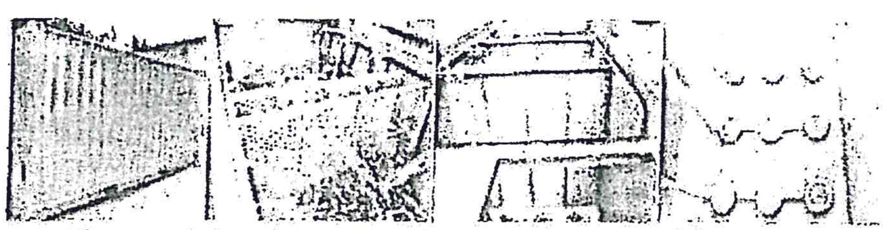
Aerated activated sludge process for biological treatment. - Secondary clarification / sedimentation.

Aerated activated sludge process for biological treatment

The MOD20 is an advanced and Innovative process for biological wastewater treatment, combining the standard activated sludge process with natural carrier packed in fixed modules. The carrier particles will create a large surface for nitrifying bacteria to grow, since the MOD20 is uniquely capable of absorbing the nitrogen present in the wastewater. The process is thus a combination of secondary treatment with a tertiary biological nitrogen removal. Simultaneously, the MOD20 works as a physical filter acting as a barrier that prevents the activated sludge from being washed out from the aeration sections. Pictures and illustrations of the MOD20 unit are shown below.

Organics Removal (expected efficiency)

- The system is designed to remove more than 97% of the influent organic loading. This



  performance is based on our experience with the Aeration/Filtration combined solution.

- The MOD20 compact WWTPs work on the activated sludge principle. The aeration is provided by a complete piping system, with air being pumped by a ring blower and the dispersion of the fine bubbles in the liquid wastewater is performed through a fine membrane fixed diffusers.

- The activated sludge in the system is of two kinds: the suspended biomass and the fixed film biomass.

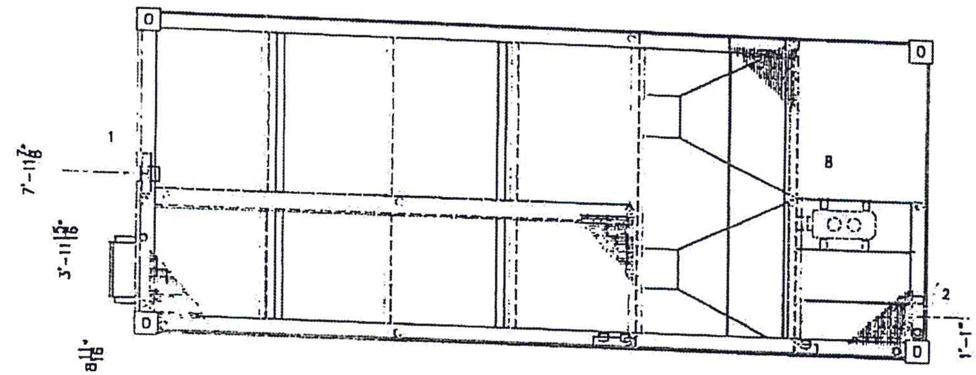
- The suspended biomass is present in the aeration tanks sections, while the fixed film biomass will be present in the Filtration packing. This approach enables the MOD20 to grow two different, but complementary biomass populations that provides the MOD20 with a unique capacity to operate with higher loads than traditional domestic wastewater and at same time, to reduce effluent discharge limits and increase the overall efficiency.

- The MOD20 can also support peak loads in flow and pollutants concentration, since the higher biomass concentration present in the system would allow for a higher feed, while keeping the same F/M ratio.

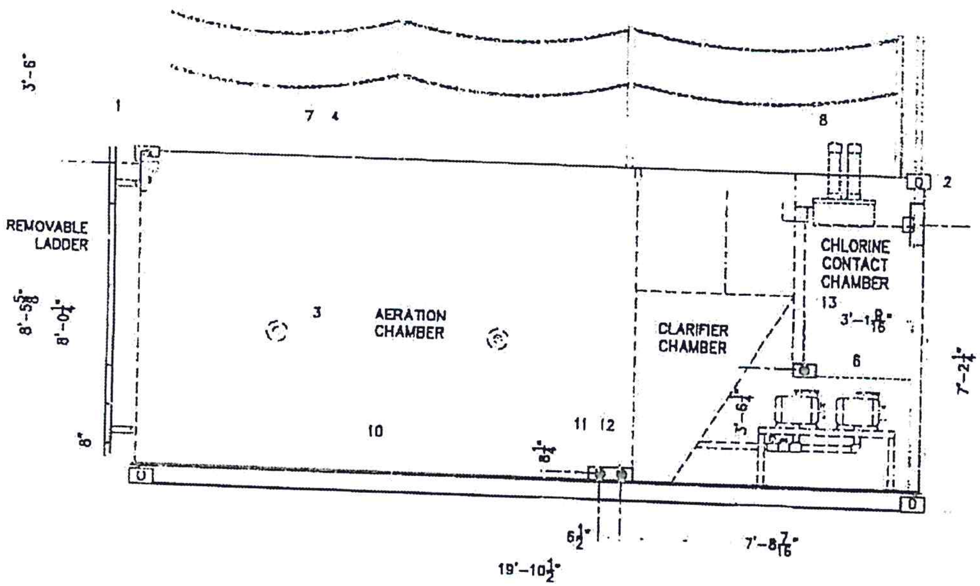
Secondary Clarification

- The wastewater treated in the MOD20 is clarified in a secondary clarifier located within the compact unit. For higher TSS separation capacity, the secondary clarifier unit is also equipped with a vertical lamella pack unit.

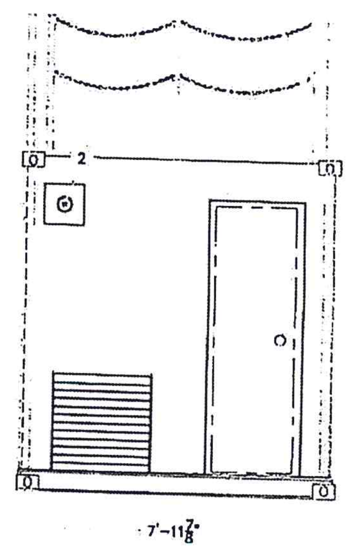
	BILL OF MATERIALS
1	INLET LINE – 4" NPT PLUGGED (RECESSED)
2	DISCHARGE LINE – 4" NPT PLUGGED (RECESSED)
3	SHELL MATERIAL A-36 PLATE – 1/4" AND 3/16" PLATE
4	HATCH – DIFFUSER INSPECTION
5	AIR FILTER
6	(ROOTS) BLOWERS – (MARATHON) MOTOR SYSTEM
7	HATCH – SKIMMER & SLUDGE RETURN ACCESS
8	CHLORINATOR – SANURIL MODEL 100
9	INTERNAL PIPING – SCH 80 PVC
10	SKID – CHANNEL 6x8.2#
11	AERATION CHAMBER DRAIN – 2" NPT PLUGGED (RECESSED)
12	CLARIFIER CHAMBER DRAIN – 2" NPT PLUGGED (RECESSED)
13	CHLORINATOR CHAMBER DRAIN – 2" NPT PLUGGED (RECESSED)
14	UNIT HAS 1/2" MATCO – NORCA BRASS BALL VALVE
15	UNIT HAS 15# McDANIEL CONTROLS PRESSURE GAUGE LIQ. S/S
16	UNIT HAS 1" FORTUNE STD. BRONZE SWING CHECK VALVE
17	UNIT HAS 3/4" 15# PRESSURE RELIEF VALVE



TOP VIEW



LEFT SIDE ELEVATION



FRONT ELEVATION