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Wastewater System Feasibility Report

Bonny's Vineyard Appeal P25-00020-APL

Board of Supervisors Hearing – May 6, 2025



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



Domestic & Production Wastewater Feasibility Report for the proposed winery named Bonny's Vineyard

1555 Skellenger Lane

Napa, CA 94558

APN: 032-200-080

Prepared By:

CMP Civil Engineering & Land Surveying Inc.

1607 Capell Valley Road

Napa, CA 94558

(707) 266-2559

Date: 12/15/2021

Rev 1: 8/15/2022

Project # 00212



Contact Information	
Property Owner:	Meyer Family Enterprises
Owner Address:	794 Oakville Cross Road Napa, CA 94558
Owner Phone:	(707) 603-6003

Site Map

Please see the Use Permit Site Plan for the subject Winery which has been included with this submittal. The said map shows the existing wastewater system.

Proposed Winery Summary

The proposed winery is to produce up to 30,000 gallons of wine per year. Have a maximum of 6 full time winery employees. Have tours and tastings for a maximum of 45 winery visitors per day. Have 2 large events per year with a maximum of 150 attendees. Have 9 smaller events per year with a maximum of 80 attendees. All food at the events will be prepared offsite by a catering company. During events temporary portable restroom facilities will be utilized.

Proposed Winery Domestic Wastewater Flows:

Given the above uses and an expected flow of 3 GPD per visitor and 15 GPD per full time employee the proposed winery is expected to produce a max peak daily flow of 225 gallons per day. It is expected to produce a total max peak of 69,945 gallons of domestic wastewater annually. Please see attached wastewater calculations for further details.

Proposed Domestic Wastewater Treatment and Analysis:

The proposed winery domestic wastewater is to be treated by an Orenco Advantex Treatment pod and then pumped to a Geoflow drip dispersal system. Based on the attached 9/26/2018 site evaluation soil logs the proposed dispersal area has an allowed application rate of 0.2 gallons per square foot per day. Given the peak daily flow is 225 gallons the minimum size of the dispersal area should be 1125 square feet. Along with this dispersal area is 200% reserve area is required. Thus the total area necessary is 3375 square feet. Looking at the said site plan, an area of 3616 square feet has been set aside for the said dispersal area and 200% reserve. Please see attached wastewater calculations for further details.

Proposed Winery Process Wastewater Flows:

The proposed winery is expected to produce a maximum of 30,000 gallons of wine per year. Annual volume of wastewater from this production level is expected to be 150,000 gallons of wastewater per year. The peak daily wastewater flow is expected to be 1500 gallons per day during an expected 30 day crush period at harvest. Please see attached wastewater calculations for further details.

Proposed Winery Process Wastewater Treatment and Analysis:

The process wastewater produced by wineries of this size generally consists of water, grape juice, grape skins, grape leaves and stems, fermentation byproducts and small amounts of acidic and basic biodegradable cleaning agents. A custom treatment system consisting of aeration and filtration will be utilized to treat this wastewater to the point where it can be recycled and reused to irrigate the existing onsite vineyard. Given the above flows, a minimum vineyard irrigation area of 0.57 acres is proposed to be irrigated by the recycled water. Coupled with this irrigation area there should be a minimum of 6532 gallons of recycled water storage tanks to avoid discharging during rain events. The proposed winery qualifies at a Tier 2 Facility under the recently adopted Statewide General Order covering winery waste. As such, the process wastewater treatment system will be designed to meet the requirements of said

Order for land application of treated waste. Please see attached wastewater calculations for further details.

Summary and Conclusions

Based on the above analysis, attached site plan and attached calculations, the proposed winery property has adequate space and suitable soil for treating the proposed domestic wastewater flows. The proposed winery property also has adequate space and a suitable vegetation area for the treatment of the process wastewater and the subsequent reuse of the recycled water. Based on these findings there is no reason a winery of this size should have any difficulty treating, reusing and dispersing its wastewater on the proposed site.

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 #: **E18-00739**

APN: **030-200-080**

(County Use Only)

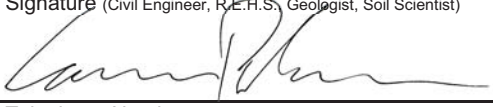
Reviewed by:

Date:

PLEASE PRINT OR TYPE ALL INFORMATION

Property Owner Barbara Meyer			☐ New Construction ☐ Addition ☐ Remodel ☐ Relocation		
Property Owner Mailing Address 794 Oakville Cross Road			☐ Reserve ☒ Other:		
City Napa	State CA	Zip 94558	☒ Residential - # of Bedrooms: TBD Design Flow : TBD		
Site Address/Location 1555 Skellenger Lane, Napa, CA 9455			☐ Commercial – Type:		
			Sanitary Waste: gpd Process Waste: gpd		
			☐ Other:		
			Sanitary Waste: gpd Process Waste: gpd		

Evaluation Conducted By:

Company Name CMP CIVIL ENGINEERING & LAND SURVEYING		Evaluator's Name Cameron Pridmore	Signature (Civil Engineer, R.E.F.S., Geologist, Soil Scientist) 
Mailing Address: 1607 Capell Valley Road			Telephone Number (707) 815-0988
City Napa	State CA	Zip 94558	Date Evaluation Conducted 09/26/18

<u>Primary Area</u>	<u>Expansion Area</u>
Acceptable Soil Depth: 24-27 in. Test pit #'s: 1-5	Acceptable Soil Depth: 24-27 in. Test pit #'s: 1-5
Soil Application Rate (gal. /sq. ft. /day): 0.3	Soil Application Rate (gal. /sq. ft. /day): 0.3
System Type(s) Recommended: Engineered Drip	System Type(s) Recommended: Engineered Drip
Slope: 1 % Distance to nearest water source: ft.	Slope: 1 % Distance to nearest water source: ft.
Hydrometer test performed? No ☒ Yes ☐ (attach results)	Hydrometer test performed? No ☒ Yes ☐ (attach results)
Bulk Density test performed? No ☒ Yes ☐ (attach results)	Bulk Density test performed? No ☒ Yes ☐ (attach results)
Groundwater Monitoring Performed? No ☒ Yes ☐ (attach results)	Groundwater Monitoring Performed? No ☒ Yes ☐ (attach results)
Site constraints/Recommendations:	

Test Pit # **1**

PLEASE PRINT OR TYPE ALL INFORMATION

Page 2 of 4

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-26	G	5	C	SAB	SH	FRB	SS-S	CF	FF	NO
26-45	BOT.	5	C	MAB	H	F	S	FF	FF	CMD

Test Pit # **2**

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-24	G	5	C	SAB	SH	FRB	SS-S	CF	FF	NO
24-43	BOT.	5	C	MAB	H	F	S	FF	FF	CMD

Test Pit # **3**

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-27	G	5	C	SAB	SH	FRB	SS-S	CF	FF	NO
27-39	BOT.	5	C	MAB	H	F	S	FF	FF	CMD

Test Pit # **4**

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-24	G	5	C	SAB	SH	FRB	SS-S	CF	FF	NO
24-37	BOT.	5	C	MAB	H	F	S	FF	FF	CMD

Test Pit # **5**

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-24	G	5	C	SAB	SH	FRB	SS-S	CF	FF	NO
24-37	BOT.	5	C	MAB	H	F	S	FF	FF	CMD

Test Pit # 6

PLEASE PRINT OR TYPE ALL INFORMATION

Page 3 of 4

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			
0-19	G	5	C	SAB	SH	FRB	SS-S	CF	FF	NO
19-39	BOT.	5	C	MAB	H	F	S	FF	FF	CMD

Test Pit #

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			

Test Pit #

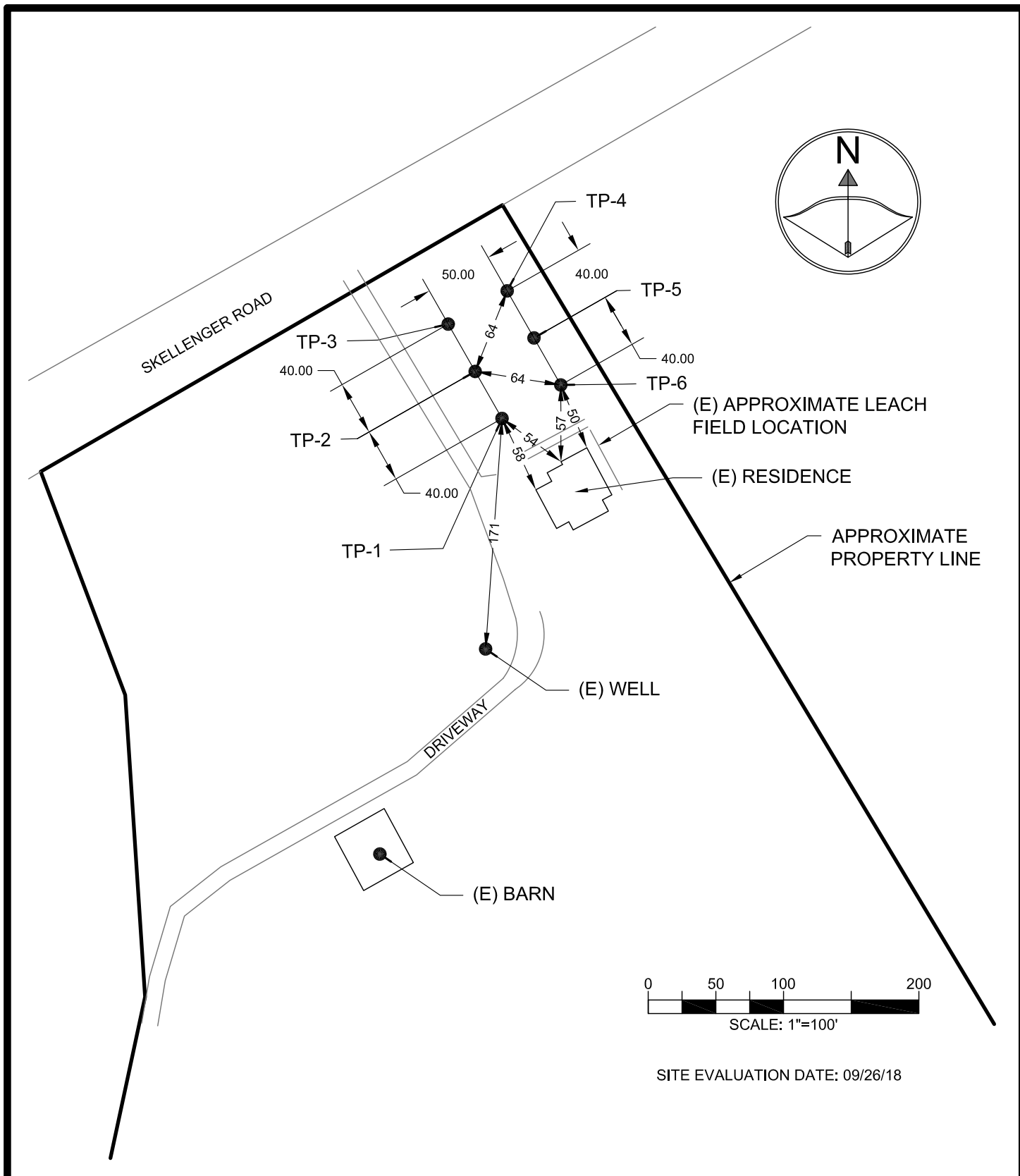
Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			

Test Pit #

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			

Test Pit #

Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure	Consistence			Pores	Roots	Mottling
					Side Wall	Ped	Wet			



TEST PIT MAP

PROJECT INFO:

MEYER PROPERTY
1555 SKELLENGER ROAD
NAPA, CA 94558
APN: 030-200-080

PREPARED BY:

CAMERON PRIDMORE PE, PLS
1607 CAPELL VALLEY ROAD
NAPA, CA 94558
(707) 815-0988

P #: 00212

DATE: 10/21/18





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Proposed Winery Wastewater Flow Calculations

for the proposed winery named
Bonny's Vineyard

Located at:
1555 Skellenger Lane
Napa, CA 94558

Date: 1213/2021

Project # 00212

Legend

Requires Input
Automatically Calculates
Important Value Automatically Calculate
Important Value Requires Input

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

Winery Waste Flow Summary

These wastewater calculations are for a proposed winery. The calculations are to establish the expected peak process and domestic daily flows. They are also to estimate the expected annual domestic and process water use.

Winery Proposed Peak Process Wastewater Flows

Wine Production =	30000	gal/wine/yr
Crush Duration =	30.00	days (30 -60)
Peak Process Waste Flows During Crush =	1500.00	gal/day ((1.5 x production)/crush days)
Average Process Flows (non crush) =	410.96	gal/day ((5 x production)/days in yr)
Additional Process Flow =	0.00	gal/day (usually 0)
Winery Peak Process Waste Flows =	1500.00	gal/day

Proposed Domestic Peak Wastewater Flows

Peak Crush Weekend

Number of FT Employees =	6	#
Number of PT Employees =	0	#
Number of daily visitors =	45	#
Event people count serviced by this system =	0	# (no visitors on event days)
FT employee daily domestic waste flow =	90.00	gal/day (15 g/p)
PT employee daily domestic waste flow =	0.00	gal/day (8 g/p)
Visitor daily domestic waste flow =	135.00	gal/day (3 g/p)
Event daily domestic waste flow =	0.00	gal/day (5 g/p)
Peak Winery Dimestic Flow =	225.00	gal/day

Peak Non Crush Weekend

Number of FT Employees =	4	#
Number of PT Employees =	0	#
Number of daily visitors =	45	#
Event people count serviced by this system =	0	# (no visitors on event days)
FT employee daily domestic waste flow =	60.00	gal/day (15 g/p)
PT employee daily domestic waste flow =	0.00	gal/day (8 g/p)
Visitor daily domestic waste flow =	135.00	gal/day (3 g/p)
Event daily domestic waste flow =	0.00	gal/day (5 g/p)
Peak Winery Dimestic Flow =	195.00	gal/day

Peak Weekday

Number of FT Employees =	6	#
Number of PT Employees =	0	#
Number of daily visitors =	25	#
Event people count serviced by this system =	0	# (no visitors on event days)
FT employee daily domestic waste flow =	90.00	gal/day (15 g/p)
PT employee daily domestic waste flow =	0.00	gal/day (8 g/p)
Visitor daily domestic waste flow =	75.00	gal/day (3 g/p)
Event daily domestic waste flow =	0.00	gal/day (5 g/p)
Peak Winery Dimestic Flow =	165.00	gal/day

Winery Peak Domestic Wasteflows =	225.00	gal/day
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Combined Winery Waste Annual Volume Calculations

Winery Combined Process & Domestic Waste Flows

Typical Crush Weekend Volumes

Number of FT Employees =	6	#
Number of PT Employees =	0	#
Number of daily visitors =	45	#
FT employee daily domestic waste flow =	90.00	gal/day (15 g/p)
PT employee daily domestic waste flow =	0.00	gal/day (8 g/p)
Visitor daily domestic waste flow =	135.00	gal/day (3 g/p)
Number of Flow Days =	30.00	gal/day
Total domestic wastewater volume =	6750	gal/year
Total process wastewater volume =	12329	gal/year
Combined Process and Domestic Volume =	19079	gal/year

Typical Non Crush Weekend Volumes

Number of FT Employees =	4	#
Number of PT Employees =	0	#
Number of daily visitors =	45	#
FT employee daily domestic waste flow =	60.00	gal/day (15 g/p)
PT employee daily domestic waste flow =	0.00	gal/day (8 g/p)
Visitor daily domestic waste flow =	135.00	gal/day (3 g/p)
Number of Flow Days =	94.00	gal/day
Total domestic wastewater volume =	18330	gal/year
Total process wastewater volume =	38630	gal/year
Combined Process and Domestic Volume =	56960	gal/year

Typical Weekday Volumes

Number of FT Employees =	6	#
Number of PT Employees =	0	#
Number of daily visitors =	25	#
FT employee daily domestic waste flow =	90.00	gal/day (15 g/p)
PT employee daily domestic waste flow =	0.00	gal/day (8 g/p)
Visitor daily domestic waste flow =	75.00	gal/day (3 g/p)
Number of Flow Days =	241.00	gal/day
Total domestic wastewater volume =	39765	gal/year
Total process wastewater volume =	99041	gal/year
Combined Process and Domestic Volume =	138806	gal/year

Special Event Visitor Volumes

	visitors	days/yr	flow/day	gallons
Large Events =	150	2	5	1500
Medium Events =	80	9	5	3600
Small =	0	0	5	0
Very Small =	0	0	5	0
Total Annual Event Visitor Waste Volume =	5100	gal/year		

Total annual domestic wastewater volume =	69945	gall/yr	0.21	af
Total annual process wastewater volume =	150000	gall/yr	0.46	af
Total Winery Wastewater Annual Vol =	219945	gall/yr	0.68	af



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Recycled Process Waste Water Irrigation Balance Calculation for the Bonny's Vineyard Winery Process Wastewater System

Located at:
1555 Skellenger Lane
Napa, CA 94558

Date: 1213/2021

Project # 00212

Legend

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

Winery Process Waste Flows										
Wine production =	30,000	gal/yr								
Estimated water use adjustment =	0%	%								
Process waste generated =	150000	gal/yr								
Average daily process waste flow =	411	gal/d								
Vegetation Data and Water Use										
Min. acres of vegetation to be irrigated =	0.57	ac								
Irrigation distribution uniformity =	90%	%								
Type of weather =	moderate									
Percent of ground shading =	60	%								
Vegetation Max ETo =	0.2	gal/d/ac (ref: ITRC report #R12-001)								
Peak vegetation evapotranspiration =	4179	gal/d/ac								
Required peak irrigation flow =	2646.95	gal/d								
Process Waste and Vegetation Water Balance Table										
	days in month (d)	% of Peak Irrg. Req.	% annual waste flow generated	ave. daily irrig. eto. (gal/d)	ave. daily flow generated (gal/d)	excess waste flow infiltrated (gal/d)	additional irrig. H2O eto'd. (gal/d)	Req. # of rain storage days (d)	Req. monthly wast flow storage (gal)	Total extra H2O possibly eto'd. (gal)
January	31	10%	4%	257	194	0	63	16	3097	1960
February	28	19%	6%	491	321	0	170	16	5143	4758
March	31	55%	5%	1459	242	0	1217	14	3387	37729
April	30	80%	5%	2122	250	0	1872	14	3500	56158
May	31	85%	6%	2247	290	0	1956	9	2613	60649
June	30	96%	7%	2544	350	0	2194	6	2100	65818
July	31	100%	9%	2647	435	0	2211	6	2613	68556
August	31	71%	10%	1878	484	0	1394	6	2903	43225
September	30	50%	16%	1323	800	0	523	7	5600	15704
October	31	33%	15%	869	726	0	143	9	6532	4438
November	30	21%	9%	555	450	0	105	14	6300	3143
December	31	21%	8%	547	387	0	160	16	6194	4952
Totals=	365		100.00%							367088
				Max soil infiltration rate required =	0.00	g/sf/d				
Water Balance Calculation Results										
Required waste flow tank storage =				6532	gal					
Total volume lost to infiltration =				0.00	ac-ft/yr					
Total possibly evapotranspired by plants =				1.59	ac-ft/yr					
Total volume of recycled water applied =				0.46	ac-ft/yr					