“R”

Wastewater Feasibility Report

Anthem Winery P14-00320-MOD and Exception to Road and Street Standards,
Variance P14-00321-VAR and Viewshed, and
Agricultural Erosion Control Plan P14-00322-ECPA
Planning Commission Hearing Date (Wednesday, October 3, 2018)

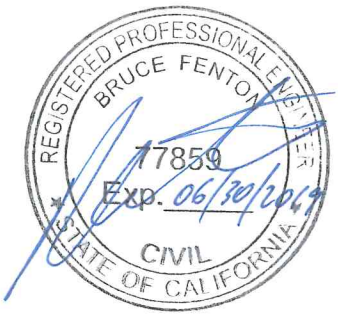
WINERY WASTEWATER FEASIBILITY REPORT

ANTHEM WINERY
3454 REDWOOD RD
NAPA, CALIFORNIA

APN 039-610-006

PROPERTY OWNER:

Julie Arbuckle
3454 Redwood Rd
Napa, CA 94558



Project# 4111010.0
June 5, 2018

1515 Fourth Street, Napa, CA 94559 www.rsacivil.com 707.252.3301.v 707.252.4966.f

TABLE OF CONTENTS

APPENDICES

INTRODUCTION

The Anthem Winery project is pursuing a Major Modification (MM) of an existing Use Permit to build a larger winery facility including a tasting room, fermentation buildings, offices, and wine caves. All proposed winery facilities will be located on the southern parcel APN 035-470-046 of two adjacent parcels, with winery and visitor access coming through the northern parcel APN 035-460-038. The proposed winery will have seven full-time, and five part-time employees.

The property varies in slope from 1-21%. The properties are currently used as a rural residence on the 035-460-038 parcel and the other is currently a winery. Redwood Creek runs roughly north to south on the western side of the property. Two wells exist on the site. One near the water tank along the existing northern property line. The other is located just south of the existing barrel storage cave. Appendix 1 contains a Site Location Map and a USGS Site Map showing the parcel topography, features and boundary. Appendix 2 contains a reduced version of the proposed winery plan set.

This report will evaluate the disposal of wastewater consisting of winery process wastewater, and winery domestic wastewater.

EXISTING SEPTIC SYSTEM

Information from Napa County files for the parcel shows an existing septic system for the house and winery. The winery system consists of a standard system that has two 1200 gallon septic tanks that feed into an 810 gallon pump tank before being pumped to 1,400 linear feet of line. The residential system information only showed approximate location of existing system.

The existing winery distribution lines are located southwest of the existing winery barrel cave. This area will be impacted by the proposed winery improvements. It is proposed that the existing drain field be abandoned.

SITE EVALUATION

RSA+ conducted a site evaluation on the subject parcel on June 20, 2014. Appendix 4 contains a map of test pit locations and test pit logs for the site evaluation. The site evaluation was conducted by Brett Frasier of RSA+ and observed by Kim Withrow of Napa County Environmental Management.

WINERY PROCESS WASTEWATER CHARACTERISTICS

The following is a summary of the winery wastewater characteristics:

Wine Production:	50,000 gallons of wine per year
	2.38 gallons of wine per case
	21,008 cases/year

Wastewater Production: 5 gallons of wastewater/gallon of wine
250,000 gallons/year

Peak Daily Waste Water Flow: Crush Period = 60 days
Annual wine production x 1.5 / 60
1,250 gallons/day

Average Daily Flow: 250,000/365 = 685 gallons/day

Monthly Wastewater Flows:

Table 1

	% By Month	Waste/Month	
Sep	15%	37,500	Gal/Month
Oct	15%	37,500	Gal/Month
Nov	11%	26,250	Gal/Month
Dec	8%	18,750	Gal/Month
Jan	4%	10,000	Gal/Month
Feb	6%	15,000	Gal/Month
Mar	6%	15,000	Gal/Month
Apr	5%	11,250	Gal/Month
May	6%	15,000	Gal/Month
Jun	7%	17,500	Gal/Month
Jul	9%	21,250	Gal/Month
Aug	10%	25,000	Gal/Month
Totals	100%	250,000	Gal/Year

DOMESTIC WASTEWATER CHARACTERISTICS

The winery domestic wastewater system has been sized to accommodate the unit values in Table 2 below. The number of visitors and employees is based on information provided by the owner. The projected flow is based on Napa County Environmental Management guidelines. The following is a summary of the estimated flows from the proposed winery.

Table 2

Use	Source	Number	Projected Flow (gpd)	Total Flow No Event Day (gpd)	Total Flow Event Day (gpd)
WINERY	Full-time employees	7	15	105	105
	Harvest empolyees	5	15	75	75
	Visitors	48	3	144	144
	Private Event w/ meals (catered)	100	10	0	1000
	Event Staff	5	15	0	75
Winery Subtotals				324	1399
Grand Total			**Total Peak Flow**	**324**	**1399**

Events with 30 or less guests will be on-site catered and events with more than 30 guests will be off-site catered. The number of visitors is based on a maximum expected daily visitor count. For events with more than 100 persons portable sanitation facilities will be provided.

WINERY PROCESS WASTEWATER - SURFACE DRIP IRRIGATION

According to Napa County Environmental Management Sewage Treatment System Design Guidelines, winery process wastewater must be treated prior to surface discharge. Based on our experience, winery wastewater characteristics are as follows:

Characteristics	Units	Average
pH		3.5
BOD5	mg/l	6000
TSS	mg/l	500
Nitrogen	mg/l	20
Phosphorus	mg/l	10

The treatment goal is 160 mg/l BOD and 80 mg/l TSS. To meet this treatment goal a treatment train including a septic tank, treatment tank with High Strength Membrane Bio-Reactor (HSMBR) unit, and pump tank are proposed. This treatment train may be modified for more desirable treatment processes prior to submitting construction plans. The following sections describe this process in more detail. This system is shown on Sheet UP3 contained in Appendix 2.

Septic Tank

The septic tank will serve to buffer peak flows and strengths from overwhelming the system and impairing treatment. This tank has been designed with baffles near the outlet. This tank will provide three days storage and will also serve to function as a primary settling basin. This tank will be 4,000 gallons.

Treatment Tank

The treatment tank will serve to treat wastewater flows using a High Strength Membrane Bio-Reactor (HSMBR) unit. This tank will provide ten days storage. This tank will be 13,000 gallons.

Pump Tank

The pump tank will serve to hold wastewater prior to distribution to the dispersal field. This tank will house dual pumps. This tank will be 1,000 gallons.

Holding Tank and Dispersal Field

To provide a preliminary estimate of the amount of storage tanks required, we have prepared a monthly water balance, as shown in Appendix 7. Monthly wastewater production is based on a percentage of the total annual wastewater production. The amount of water allowed to be applied is estimated by the typical vine water demand. The irrigation will be applied to areas of vineyards outside well setback requirements. The area available for irrigation is shown in Appendix 6. An area of 6.0 acres of vineyard and 0.5 acres of cover crop has been used to

calculate the storage capacity required. Based on monthly analysis no storage is required. Storage capacity of 20,000 gallons is provided for treated process wastewater generated during wet weather periods.
During the summer months all of the treated wastewater will be used for irrigation. During the wet winter months, a limited discharge will be consistent with landscape water demand and no discharge will occur within 48-hours of a forecasted rain event and also for 48-hours after a rain event. These irrigation scheduling constraints necessitate installing tanks to store excess water that cannot be discharged during the winter months. All stored water will then be used for irrigation during the summer months.

DOMESTIC WASTEWATER - SUB SURFACE DRIP

For the domestic wastewater we propose installation of a new septic system and dispersal field for the proposed winery. For the winery, the addition of a HOOT treatment system and a new dispersal field is proposed.

Domestic wastewater from the winery will flow into a 5,000 gallon septic tank before flowing into two new HOOT H-1000 tanks. After pretreatment in the HOOT H-1000, wastewater will be pumped to the proposed distribution field.

The subsurface drip field is sized to meet Napa County Environmental Management guidelines. The distribution field will be placed in the area of the site evaluation where the most limiting usable soil type was clay loam. The allowable application rate for clay loam is 0.6 gallons/square foot/day for pre-treated effluent. Peak daily domestic wastewater flow is 1399 gallons/day.

$$Dispersal\ Field\ Area(primary) = \frac{1399\,gpd}{0.6\,gpd/SF} = 2{,}332\,square\ feet$$

In addition to the primary dispersal area of 2,332 square feet, a 200% reserve area is required. The reserve area will be located adjacent to the primary field where the soil application rate is also 0.6 gallons/square foot/day.

$$Dispersal\ Field\ Area(reserve\,area) = \frac{1399\,gpd}{0.6\,gpd/SF} = 2{,}332\,square\ feet$$

The total requirement for domestic wastewater reserve dispersal area is 4,664 square feet. Total area required for the primary and reserve is 6,996 square feet.

The system layout is shown on the Use Permit Plans in Appendix 2.

STORMWATER DIVERSION

Operational areas including crush pad, trash and recycling enclosure, and mechanical pad will be covered.

OPERATION AND MAINTENANCE

The winery process and domestic waste systems will be fully automated and has been designed so minimal input from winery staff is required. Per Napa County guidelines, a Registered Civil Engineer, Registered Environmental Health Specialist, or Licensed Contractor will provide semi-annual monitoring and evaluation of the system. The contract with the responsible party will be provided prior to the final inspection for the system installed.

CONCLUSION

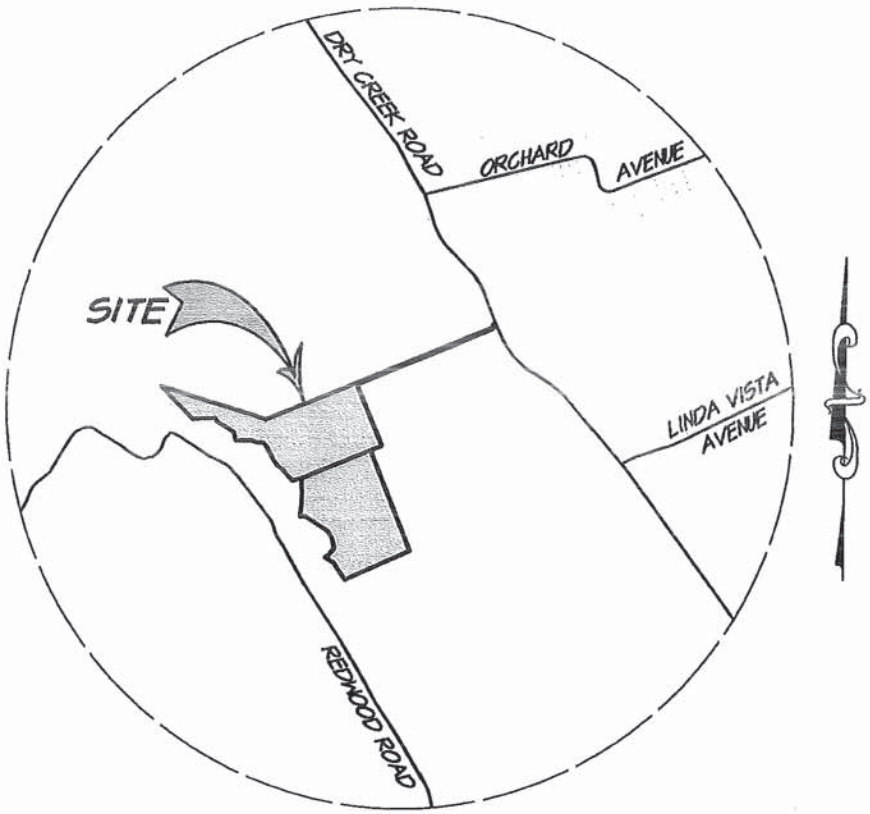
This report demonstrates that enough dispersion area is available making a sub-surface drip system a feasible option for treating the Anthem Winery's domestic wastewater. It has also been demonstrated that it is feasible to treat the winery process wastewater and distribute this to the vineyard using drip irrigation.

The above methodology results in a design that meets the Napa County Environmental Management Design standards for the treatment of winery and domestic wastewater.

APPENDIX 1

Vicinity Map & USGS Map

ARBUCKLE RESIDENCE
VICINITY MAP
NAPA COUNTY CALIFORNIA



VICINITY MAP

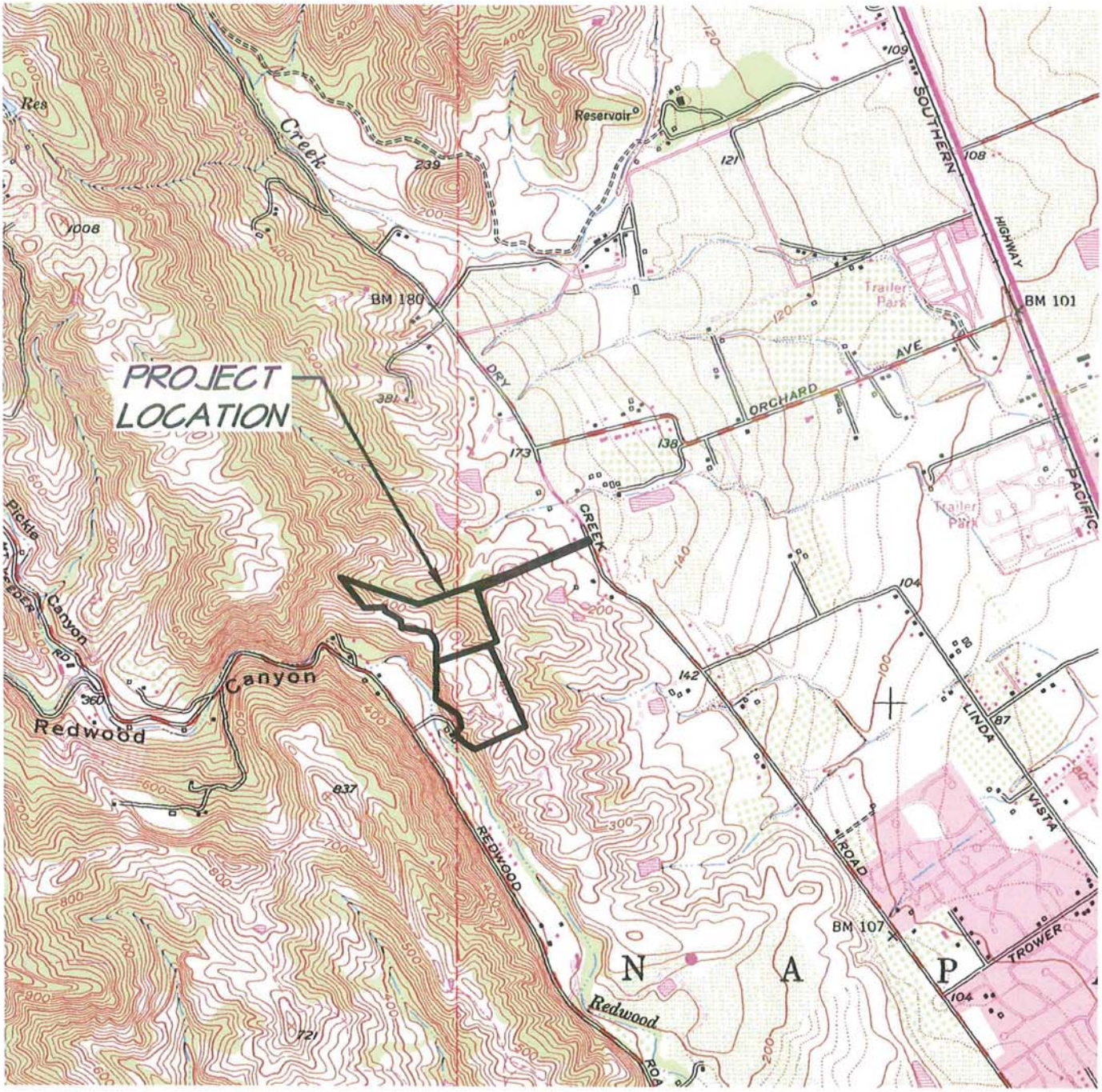
SCALE: 1" = 2000'

CONSULTING CIVIL ENGINEERS
RIECHERS & SPENCE ASSOCIATES
1515 Fourth Street
Napa, Calif. 94559
v 707.252.3301
f 707.252.4966

JULY 22, 2014

4111010.0 Exh-Pltmap.dwg 1 OF 3

ARBUCKLE VINEYARDS
USGS QUAD MAP
NAPA CALIFORNIA



SCALE: 1"=2000'

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f 707.252.4966

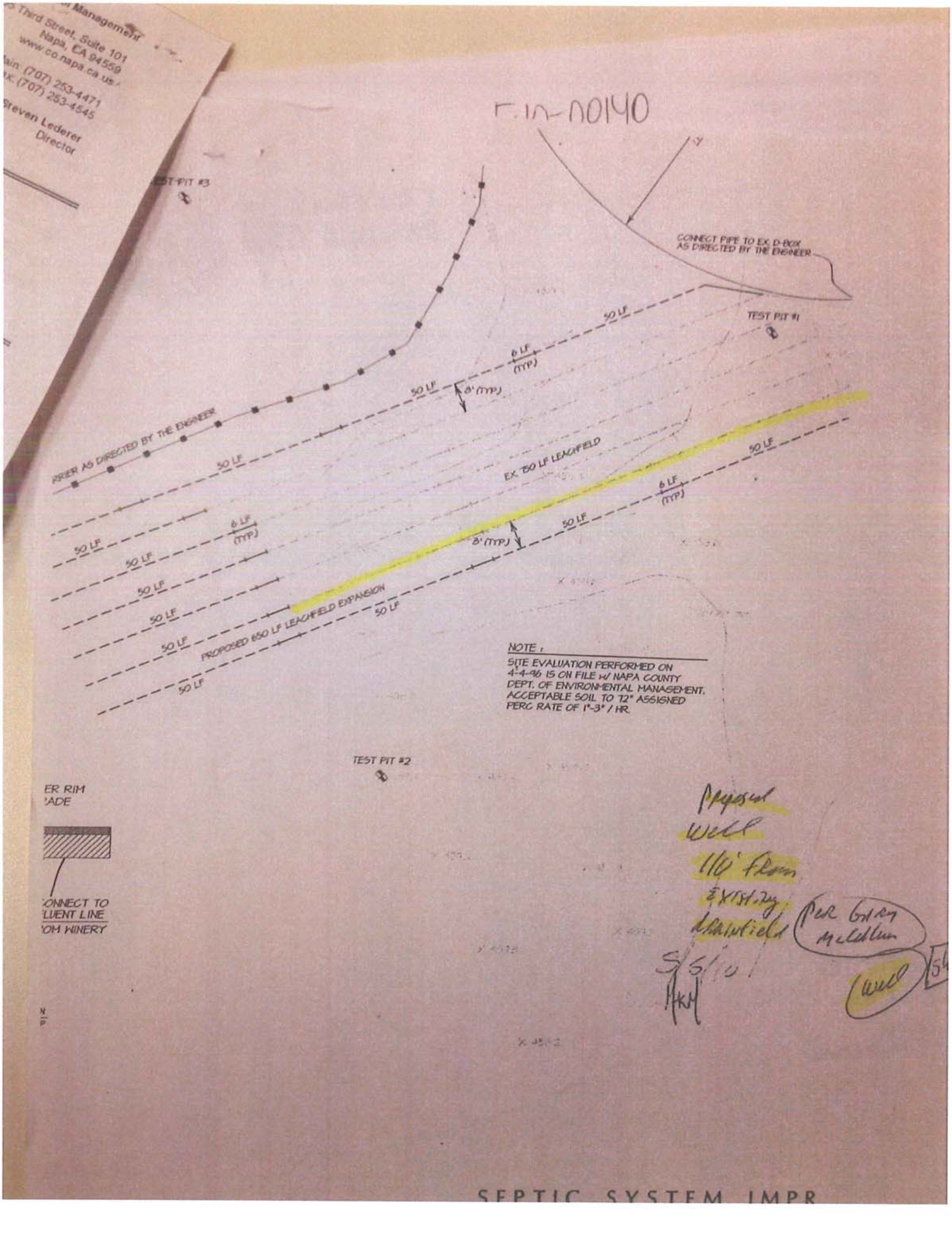
OCTOBER 15, 2012
4111010.0 1 OF 1

APPENDIX 2

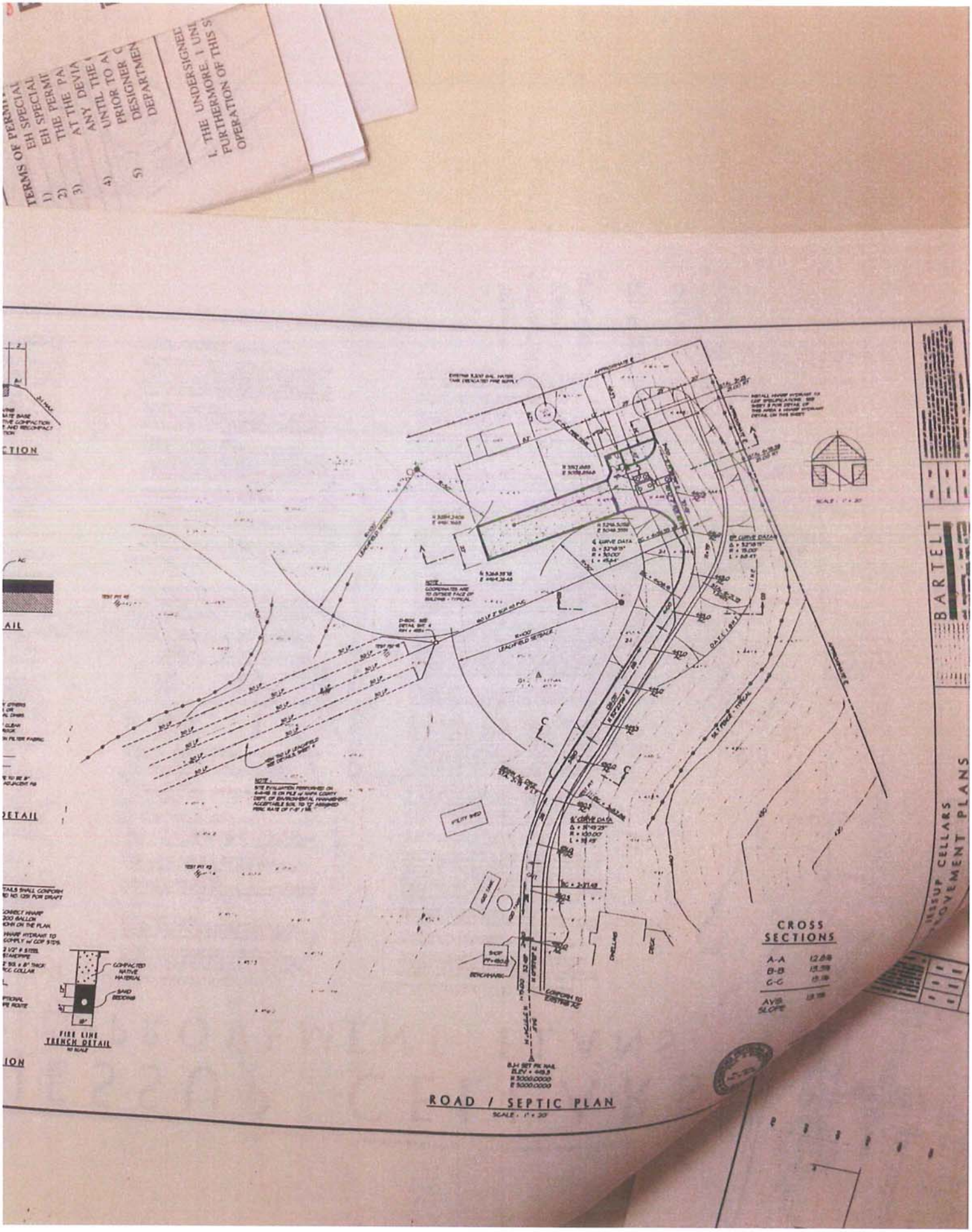
Reduced Use Permit Plan Set

APPENDIX 3

Existing Septic System Documentation



Management
Third Street, Suite 101
Napa, CA 94559
www.co.napa.ca.us
Main: (707) 253-4471
Fax: (707) 253-4545
Steven Lederer
Director
E 10-00140
TEST PIT #3
CONNECT PIPE TO EX. D-BOX AS DIRECTED BY THE ENGINEER
TEST PIT #1
RISER AS DIRECTED BY THE ENGINEER
50 LF
6 LF (TYP)
8' (TYP)
EX. 750 LF LEACHFIELD
PROPOSED 650 LF LEACHFIELD EXPANSION
NOTE:
SITE EVALUATION PERFORMED ON 4-4-96 IS ON FILE w/ NAPA COUNTY DEPT. OF ENVIRONMENTAL MANAGEMENT. ACCEPTABLE SOIL TO 72" ASSIGNED PERC RATE OF 1"-3" / HR.
TEST PIT #2
ER RIM
ADE
CONNECT TO
LUENT LINE
OM WINERY
Proposed
Well
110' From
Existing
drainfield
Per Gary
McClellan
5/5/10
MKM
Well
SEPTIC SYSTEM IMPR


TERMS OF PERMI
EH SPECIAL
1)
2)
3)
4)
5)
I, THE UNDERSIGNED
FURTHERMORE, I UNE
OPERATION OF THIS S
DESIGNER C
DEPARTMEN
PRIOR TO A
UNTIL THE
ANY DEVIA
AT THE PA
THE PERMI
BARTELT
ISSUP CELLARS
OVEMENT PLANS
CROSS SECTIONS
A-A
B-B
C-C
AVG SLOPE
FIRE LINE TRENCH DETAIL
ROAD / SEPTIC PLAN
SCALE: 1" = 30'

LEGAL LOT YES _____ NO _____

ZONE AW

MINIMUM STREET CENTERLINE SETBACK:

_____

AND

A00 800# to B.P.# 57125

MINIMUM PROPERTY LINE SETBACKS:

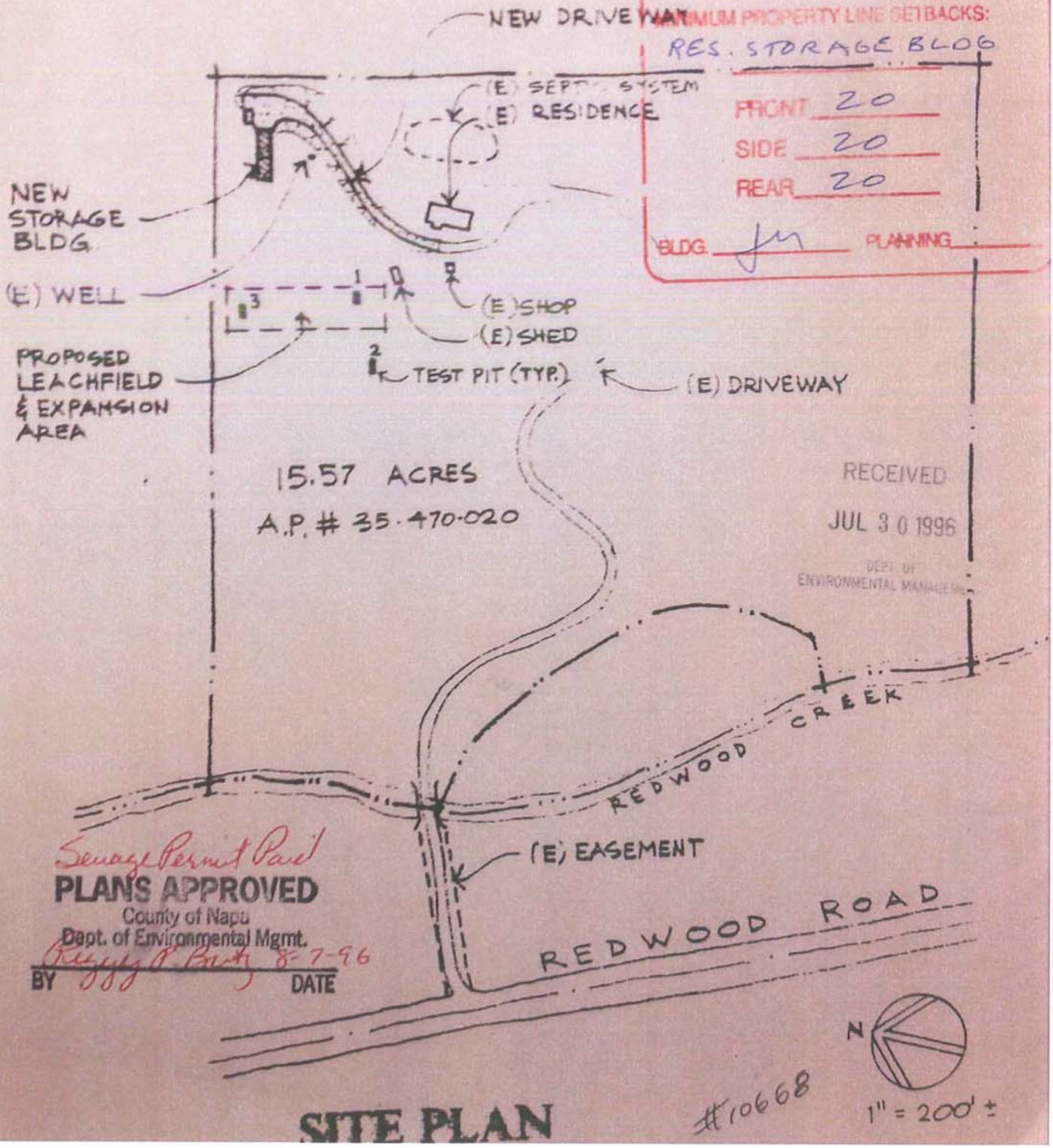
RES. STORAGE BLDG

FRONT 20

SIDE 20

REAR 20

BLDG. _____ PLANNING _____



Sewage Permit Paid

PLANS APPROVED

County of Napa

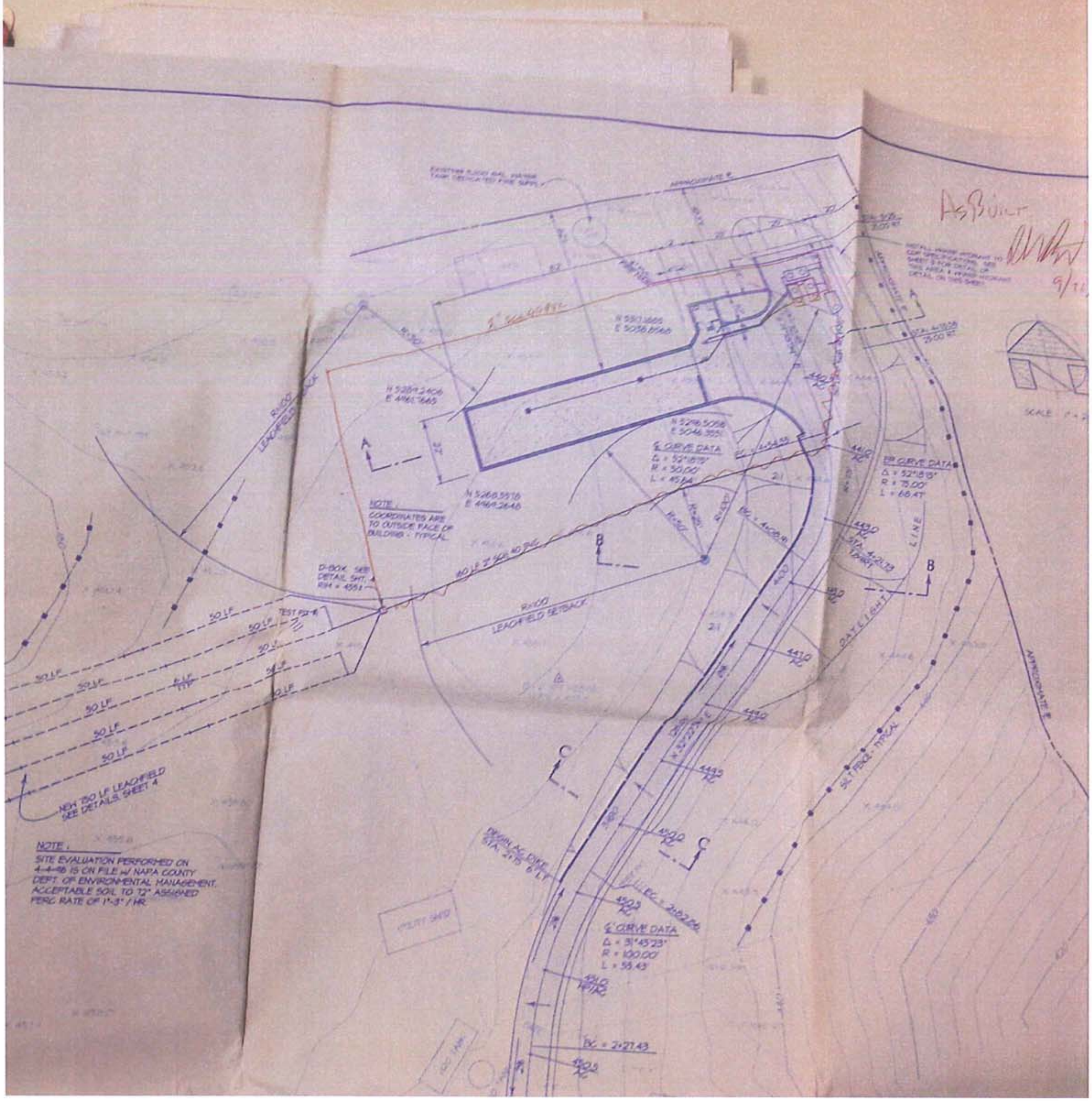
Dept. of Environmental Mgmt.

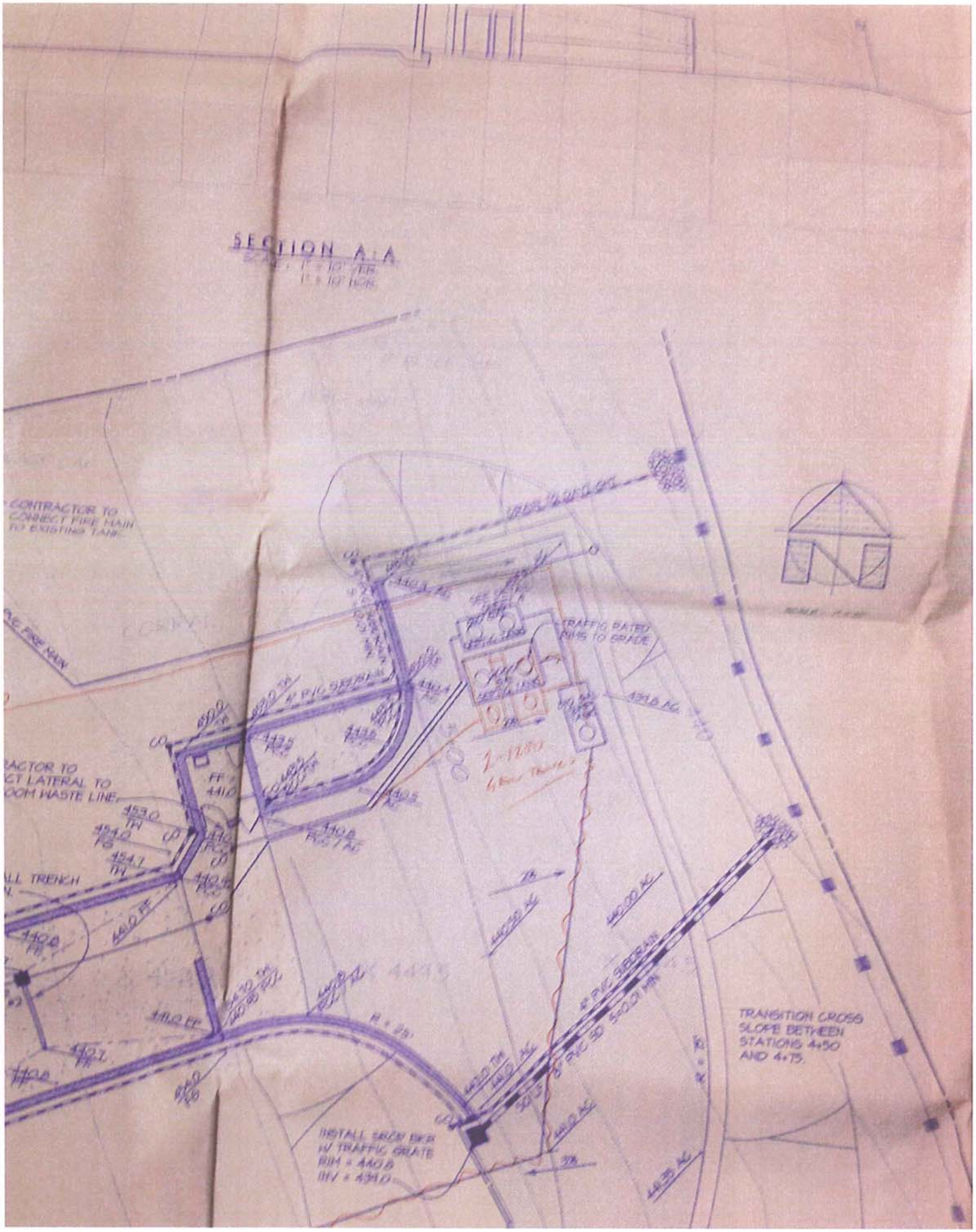
BY _____ DATE 8-7-96

SITE PLAN

#10668

1" = 200' ±


AS BUILT
NOTE:
COORDINATES ARE TO OUTSIDE FACE OF BUILDING - TYPICAL
R=100 LEACHFIELD SETBACK
NEW 750 LF LEACHFIELD SEE DETAILS SHEET 4
NOTE:
SITE EVALUATION PERFORMED ON 4-4-88 IS ON FILE w/ NAPA COUNTY DEPT. OF ENVIRONMENTAL MANAGEMENT. ACCEPTABLE SOIL TO 72" ASSIGNED PERC RATE OF 1"-3" / HR.
EP CURVE DATA
Δ = 52°18'13"
R = 75.00'
L = 68.47'
C CURVE DATA
Δ = 31°45'23"
R = 100.00'
L = 55.43'
BC = 2+27.43


SECTION A-A
CONTRACTOR TO CONNECT FIRE MAIN TO EXISTING TANK
TRAFFIC RATED RIMS TO GRADE
4" PVC SEWER
TRANSITION CROSS SLOPE BETWEEN STATIONS 4+50 AND 4+75.
INSTALL SAND BOX W/ TRAFFIC GRATE
RIM = 440.8
INV = 439.0

APPENDIX 4

Site Evaluation

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 #: E14-00484
APN: 035-470-046
(County Use Only) Reviewed by: Date:

PLEASE PRINT OR TYPE ALL INFORMATION

Property Owner Julie Arbuckle	☐ New Construction ☒ Addition ☐ Remodel ☐ Relocation ☐ Other:
Property Owner Mailing Address 3454 Redwood Road	☐ Residential - # of Bedrooms: Design Flow : gpd
City State Zip Napa CA 94558	☒ Commercial – Type: Winery Sanitary Waste: 1435 gpd Process Waste: gpd
Site Address/Location Same	☐ Other: Sanitary Waste: gpd Process Waste: gpd

Evaluation Conducted By:

Company Name RSA+	Evaluator's Name Brett Frasier	Signature (Civil Engineer, R.E.H.S., Geologist, Soil Scientist)
Mailing Address: 1515 Fourth Street		Telephone Number 707-252-3301
City State Zip Napa CA 94559		Date Evaluation Conducted June 20, 2014

Primary Area	**Expansion Area**
Acceptable Soil Depth: 40 in. Test pit #'s: 1-4	Acceptable Soil Depth: 40 in. Test pit #'s: 1-4
Soil Application Rate (gal. /sq. ft. /day): 0.6	Soil Application Rate (gal. /sq. ft. /day): 0.6
System Type(s) Recommended: Sub-surface drip	System Type(s) Recommended: Sub-surface drip
Slope: 15% Distance to nearest water source: 280 ft.	Slope: 15% Distance to nearest water source: 280 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)
Percolation test performed? No ☒ Yes ☐ (attach results)	Percolation 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

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-40"	C	<30%	CL	S/SB	H	FRB	S	C/F-M	F/F	N/A
	40"-54"	Bottom	<30%								Yes

Notes:

Test Pit # 2

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-40"	C	<40%	CL	M/SB	H	FRB	S	F/F	C/F-C	N/A
	40"-53"	Bottom	~50%								

Notes:

Test Pit # 3

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-54"	Bottom	<30%	CL	S/SB	SH	FRB	S	C/F-M	C/F-C	N/A

Notes:

Test Pit # 4

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-48"	Bottom	<35%	CL	M/SB	H	FRB	S	M/F-M	M/F-C	N/A

Notes:

Test Pit # 5

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			

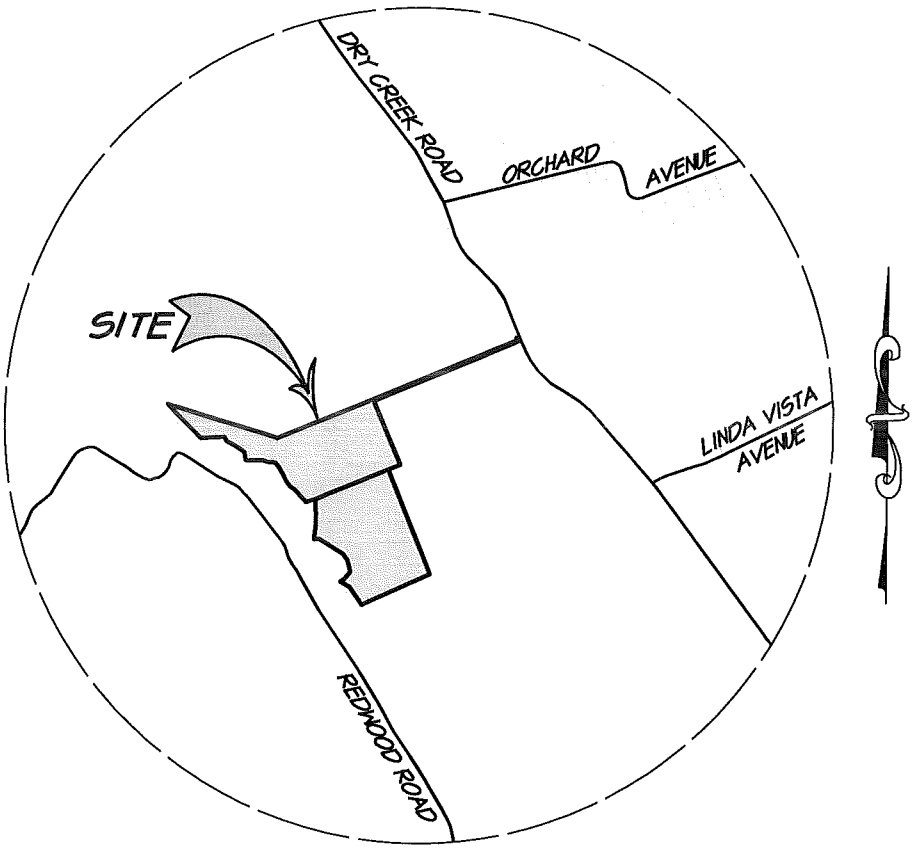
Notes:

Test Pit # 6

X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture +	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			

Notes:

ARBUCKLE RESIDENCE
VICINITY MAP
NAPA COUNTY CALIFORNIA



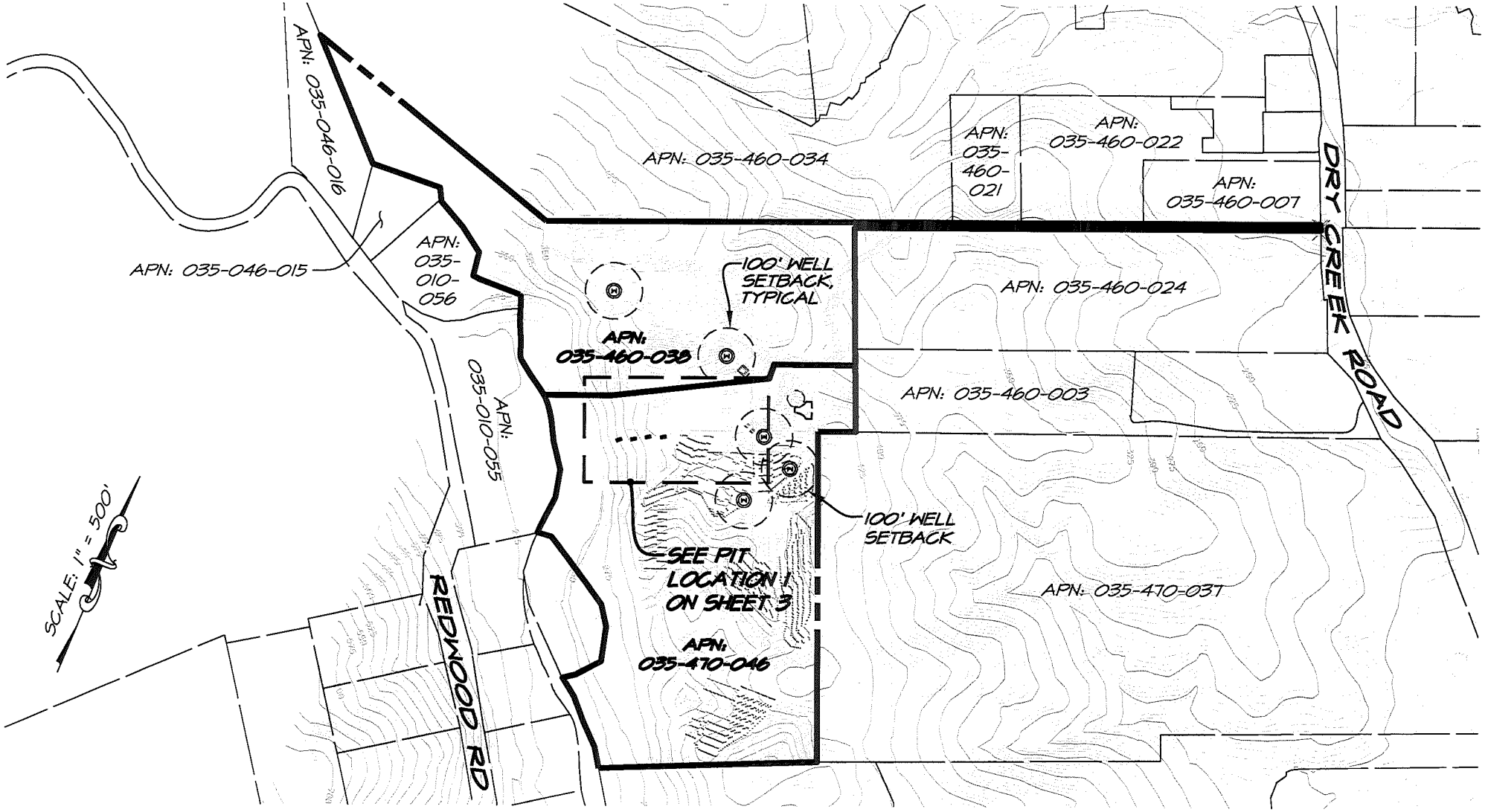
VICINITY MAP

SCALE: 1" = 2000'

CONSULTING CIVIL ENGINEERS
RIECHERS SPENCE & ASSOCIATES
1515 Fourth Street
Napa, Calif. 94559
v 707.252.3301
f 707.252.4966

JULY 22, 2014

ARBUCKLE RESIDENCE
PIT MAP



SITE EVALUATION DATE:	JUNE 20, 2014
APN:	035-470-046
ADDRESS:	3454 REDWOOD ROAD NAPA, CA 94558
ENV. HEALTH INSPECTOR:	KIM WITHROW

LEGEND

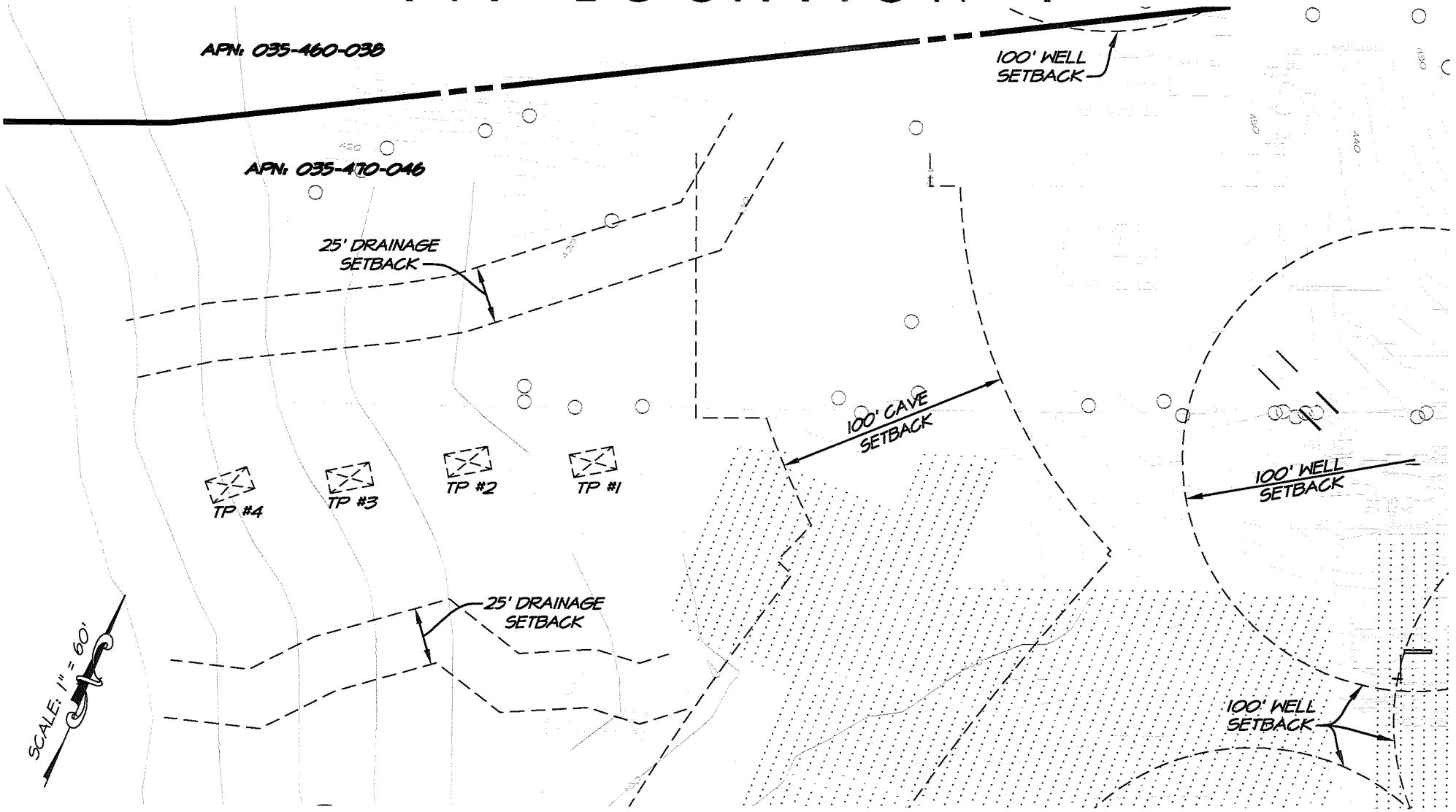
TP#1 TEST PIT

CONSULTING CIVIL ENGINEERS
RIECHERS SPENCE & ASSOCIATES
1515 Fourth Street
Napa, Calif. 94559
v 707.252.3301
f 707.252.4966

JULY 22, 2014

4111010.0 Exh-Pitmap.dwg 2 OF 2

ARBUCKLE RESIDENCE
PIT LOCATION 1



SITE EVALUATION DATE:	JUNE 20, 2014
APN:	035-470-046
ADDRESS:	3454 REDWOOD ROAD NAPA, CA 94558
ENV. HEALTH INSPECTOR:	KIM WITHROW

LEGEND

TP#1 TEST PIT

CONSULTING CIVIL ENGINEERS
RIECHERS SPENCE & ASSOCIATES
1515 Fourth Street
Napa, Calif. 94559
v 707.252.3301
f 707.252.4966

JULY 22, 2014

4111010.0 Exh-Pitmap.dwg 3 OF 3

APPENDIX 5

Water Balance for Irrigation and Storage

Reclaimed Process Wastewater
Water Balance for Irrigation and Storage

Project Description		**Annual Process Waste Flow Volume**		
Project Number:	4111010.0	Wine Production:	50,000	gal/year
Project Name:	Anthem Winery			
Prepared By:	Brett Frasier	Annual Process Waste per Gallon Wine:	5	gal/year
Date:	September 16, 2014	Total Annual Process Waste Generated:	250,000	gal/year

Vineyard Irrigation Parameters		**Landscape Irrigation Parameters**		
Acres of irrigated vineyard:	6.00 acres	Crop type / name:	Native grass and trees	
Row spacing:	7.0 feet	Total irrigated acres of crop:	0.50 acres	
Vine spacing:	8.0 feet			
Total number of vines:	4,667 vines			
Water use per vine per month (peak):	26 gal			
Total peak monthly irrigation demand:	121,346 gal			

Monthly Process Wastewater Generation

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Monthly process wastewater generated as % of annual total:	4%	6%	6%	5%	6%	7%	9%	10%	14%	14%	11%	8%
Monthly process wastewater generated [gallons]:	10,000	15,000	15,000	12,500	15,000	17,500	22,500	25,000	35,000	35,000	27,500	20,000

Monthly Vineyard Irrigation Water Use

(Based on per-vine water use)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Beginning of month reclaimed water in storage [gallons] (This number brought forward from end of previous month)	7,865	0	0	0	0	0	0	0	0	0	0	0
Vineyard irrigation as % of peak month irrigation demand:	6%	6%	10%	100%	100%	100%	100%	100%	100%	100%	10%	10%
Irrigation per month per vine (gallons):	2	2	3	26	26	26	26	26	26	26	3	3
Total vineyard irrigation demand [gallons]:	7,281	7,281	12,135	121,346	121,346	121,346	121,346	121,346	121,346	121,346	12,135	12,135
Will vineyard be irrigated with reclaimed water this month?	y	y	y	y	y	y	y	y	y	y	y	y
Process wastewater generated this month, reclaimed for vineyard irrigation [gallons]	7,281	7,281	12,135	12,500	15,000	17,500	22,500	25,000	35,000	35,000	12,135	12,135
Remaining vineyard irrigation demand after using this month's process water [gallons]	0	0	0	108,846	106,346	103,846	98,846	96,346	86,346	86,346	0	0
Drawdown from storage for remaining vineyard irrigation [gallons]	0	0	0	0	0	0	0	0	0	0	0	0
Well water required to satisfy remaining vineyard irrigation demand	0	0	0	108,846	106,346	103,846	98,846	96,346	86,346	86,346	0	0
Net storage after vineyard irrigation drawdown [gallons]	7,865	0	0	0	0	0	0	0	0	0	0	0
This month's process wastewater, remaining after vineyard irrigation, available for landscape irrigation[gallons]	2,719	7,719	2,865	0	0	0	0	0	0	0	15,365	7,865

Water balance continues on next page for cover crop irrigation.

Monthly Landscape Irrigation Water Use

(Based on evapotranspiration crop demand and irrigated area)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
This month's process wastewater, remaining after vineyard irrigation, available for landscape irrigation[gallons] *(From sheet 1)*	2,719	7,719	2,865	0	0	0	0	0	0	0	15,365	7,865
Reference ET (ETo) (in/month) (see note 1)	1.03	1.53	2.93	4.71	5.82	6.85	7.21	6.44	4.87	3.53	1.64	1.17
Crop Coefficient (k_c) (see note 2)	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Crop water demand per acre [inches]	0.82	1.22	2.34	3.77	4.66	5.48	5.77	5.15	3.90	2.82	1.31	0.94
Crop water demand per acre [gallons]	22,374	33,235	63,645	102,310	126,422	148,795	156,615	139,889	105,786	76,678	35,624	25,415
Total crop water demand for irrigated area [gallons]	11,187	16,617	31,823	51,155	63,211	74,398	78,308	69,945	52,893	38,339	17,812	12,707
Will landscape be irrigated with reclaimed water this month?	Y	Y	Y	N	N	N	N	N	N	Y	Y	Y
Process wastewater remaining after vineyard irrigation, reclaimed for landscape irrigation [gallons]	2,719	7,719	2,865	0	0	0	0	0	0	0	15,365	7,865
Landscape irrigation water required from storage or other source [gallons]	8,468	8,898	28,957	0	0	0	0	0	0	38,339	2,447	4,842
Drawdown from storage for landscape irrigation [gallons]	7,865	0	0	0	0	0	0	0	0	0	0	0
Process wastewater generated this month, unused for irrigation, to be reclaimed and stored [gallons]	0	0	0	0	0	0	0	0	0	0	0	0
Net end-of-month reclaimed water storage after all irrigation [gallons]	0	0	0	0	0	0	0	0	0	0	0	0

End of Water Balance

Peak Monthly Storage = 0 gallons

Notes:

1. Reference ETo from California Irrigation Management Information System
2. Crop Coefficient from Table 1 of "Estimating Irrigation Water Needs of Landscape Plantings in California", University of California Cooperative Extension, August 2000.