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WASTEWATER FEASIBILITY STUDY



WINERY WASTEWATER FEASIBILITY REPORT

ALTA WINES
2125 SILVERADO TRAIL
NAPA, CA 94558

APN 039-270-005

Property Owner:

Alta Napa Valley Vineyards, LLC
1988 Thousand Oaks Blvd.
Berkeley, CA 94707

Project# 4117016.0
August 16, 2019





Table of Contents

INTRODUCTION	1
EXISTING CONDITIONS.....	1
SITE EVALUATION.....	1
DOMESTIC WASTEWATER CHARACTERISTICS	1
DOMESTIC WASTEWATER – SUB SURFACE DRIP	1
WINERY PROCESS WASTEWATER CHARACTERISTICS	2
WINERY PROCESS WASTEWATER – SURFACE DRIP IRRIGATION	3
HOLDING TANK AND DISPERSAL FIELD	4
OPERATION AND MAINTENANCE	4
CONCLUSION.....	4

ATTACHMENTS

1. Residence Floor Plan
2. Vicinity Map
 - USGS Map
 - Soils Map
 - Firmette Map
3. Site Evaluation
4. Treated Process Wastewater Irrigation Balance
 - Treated Process Wastewater Irrigation Exhibit



INTRODUCTION

Alta Wines (APN 039-270-005) proposes to submit for a winery use permit. The parcel has two existing residences that are each served served by an existing septic system. The client proposes to demolish the existing residences and abandon the existing septic systems per Napa County guidelines. A new septic system will be installed for the proposed 4-bedroom residence and winery. See Attachment 1 for the residence floor plan.

This report will demonstrate that the proposed domestic and process wastewater systems are sufficiently sized to accommodate peak flows from the winery and residence. Attachment 2 contains a Site Location Map and a USGS Site Map showing parcel topography, features and boundary.

EXISTING CONDITIONS

There are two existing residential septic systems. Both systems will be abandoned per Napa County guidelines and the residences will be demolished.

SITE EVALUATION

RSA+ conducted a site evaluation on the parcel on February 22, 2018. Appendix 3 contains a copy of the site evaluation report.

The site evaluation was conducted by Julia King of RSA+ and observed by Maureen Shields-Bown of Napa County Environmental Management.

DOMESTIC WASTEWATER CHARACTERISTICS

The domestic wastewater system for the winery will accommodate the unit values in Table 1 below. The proposed number of visitors and employees is shown in Table 1 below. There will be no events. The projected flow is based on Napa County Environmental Management guidelines. The following is a summary of the estimated flows from the winery.

Table 1

Use	Source	Number	Projected Flow (gpd)	Total Flow (gpd)
Winery	Part-Time Employees	1	15	15
	Full-Time Employees	2	15	30
	Visitors	10	3	30
Winery Subtotal				75
	Residence	4	120	480
Residence Subtotal				480
Total Peak Wastewater Flow				555

It is assumed that the residents will also work in the winery.

DOMESTIC WASTEWATER – SUB SURFACE DRIP

A septic system and dispersal field will be designed for the proposed winery. An Orenco AdvanTex treatment system and a new dispersal field are proposed.



Domestic wastewater from the proposed winery and residence will flow into a new 1,500-gallon septic tank. Wastewater will then flow into a 1,000-gallon recirculation tank attached to an AdvanTex treatment pod. After treatment, wastewater will flow to a 1,200-gallon dosing tank where it 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 where the most limiting soil type was clay loam with a moderated subangular-blocky structure. The allowable application rate for this soil type is 0.6 gallons/square foot/day for pretreated effluent. Peak daily domestic wastewater flow is 525 gallons/day.

$$\text{Dispersal Field Area (primary)} = \frac{525 \text{ gpd}}{0.6 \text{ gpd/sf}} = 875 \text{ square feet}$$

In addition to the primary dispersal area of 875 square feet, a 200% reserve area is required. The reserve area will be located in an area where the soil application rate is also 0.6 gallons/square foot/day.

$$\text{Dispersal Field Area (reserve)} = 200\% \times \frac{525 \text{ gpd}}{0.6 \text{ gpd/sf}} = 1,750 \text{ square feet}$$

The total combined area required for the primary and reserve fields for the domestic winery and residence is 2,625 square feet.

WINERY PROCESS WASTEWATER CHARACTERISTICS

The following is a summary of the winery wastewater characteristics:

Wine Production:	10,000 gallons of wine per year 2.38 gallons of wine per case 4,202 cases/year
Wastewater Production:	5 gallons of wastewater/gallon of wine 50,000 gallons/year
Peak Daily Waste Water Flow:	Crush Period = 30 days Annual wine production x 2 / 30 667 gallons/day
Average Daily Flow:	50,000/365 = 137 gallons/day



Monthly Wastewater Flows:

Table 2

	% By Month	Waste/Month	
Sep	15%	7,500	Gal/Month
Oct	15%	7,500	Gal/Month
Nov	10.5%	5,250	Gal/Month
Dec	7.5%	3,750	Gal/Month
Jan	4%	2,000	Gal/Month
Feb	6%	3,000	Gal/Month
Mar	6%	3,000	Gal/Month
Apr	4.5%	2,250	Gal/Month
May	6%	3,000	Gal/Month
Jun	7%	3,500	Gal/Month
Jul	8.5%	4,250	Gal/Month
Aug	10%	5,000	Gal/Month
Totals	100%	50,000	Gal/Year

WINERY PROCESS WASTEWATER – SURFACE DRIP IRRIGATION

The treated process wastewater will be treated by a Lyve treatment system or equivalent system before it is surface dripped on vines. 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 Lyve Systems, Inc. (LSI), L10 winery wastewater activated sludge system or equivalent system will be utilized. The LSI winery wastewater system internally consists of a selector zone, an aeration zone, a clarifier zone and sludge digester zone and can process a minimum of 667 gallons per day.

Screen

A wastewater screen will remove significant solids that do not settle out of the wastewater in the initial septic compartment.

Lyve System

The LYVE System incorporates a continuous process involving the introduction, uptake, and breakdown of organic carbon, the growth and decay of micro-organisms, and the separation of the resulting bio-mass or suspended solids from the waste system. It consists of a multiple stage treatment system.



The incoming wastewater and return sludge streams are mixed in the selector zone. The combined stream then flows to the Moving Bed Biofilm Reactor (MBBR) roughing reactor zone followed by the aeration zone. In these zones, bacteria utilize the organic constituents of the wastewater for cell growth and multiplication. The mixed liquor flows from the aeration basin into the membrane bio-reactor (MBR). Treated effluent from the MBR is pumped to the irrigation tank for storage prior to discharge.

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 4. 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. An area of 14.0 acres of vineyard has been used to calculate the storage capacity required. Based on monthly analysis 0 gallons of storage is required. The proposed 10,000 gallons of storage is sufficient for the winery.

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 a tank 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.

OPERATION AND MAINTENANCE

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

CONCLUSION

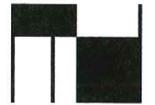
This report demonstrates that Alta Wines can treat and disperse domestic and process wastewater onsite meeting the Napa County Environmental Management Design Standards for the treatment of domestic and process wastewater.



ATTACHMENT 1
RESIDENCE FLOOR PLAN

Design Notes:

- ① All entrances and exterior ground floor exit doors shall be made accessible to persons with disabilities per CBC 11B-404 (refer to A0.05 for egress plan)
- ② Accessible Routes per CBC 11B-303 & 11B-403.5.1. Changes in level of 1/4" high max shall be permitted to be vertical and without edge treatment per 11B-303.2. Changes in level between 1/2" high maximum shall be beveled with a slope not steeper than 1:2 per 11B-303.3. The clear width for sidewalks and walks shall be 48" min per 11B-403.5.1.
- ③ Catwalk and catwalk stairs, under separate permit (refer to A0.01 for additional permit submittals.)
- ④ Fermentation tanks under separate permit (refer to A0.01 for additional permit submittals.)



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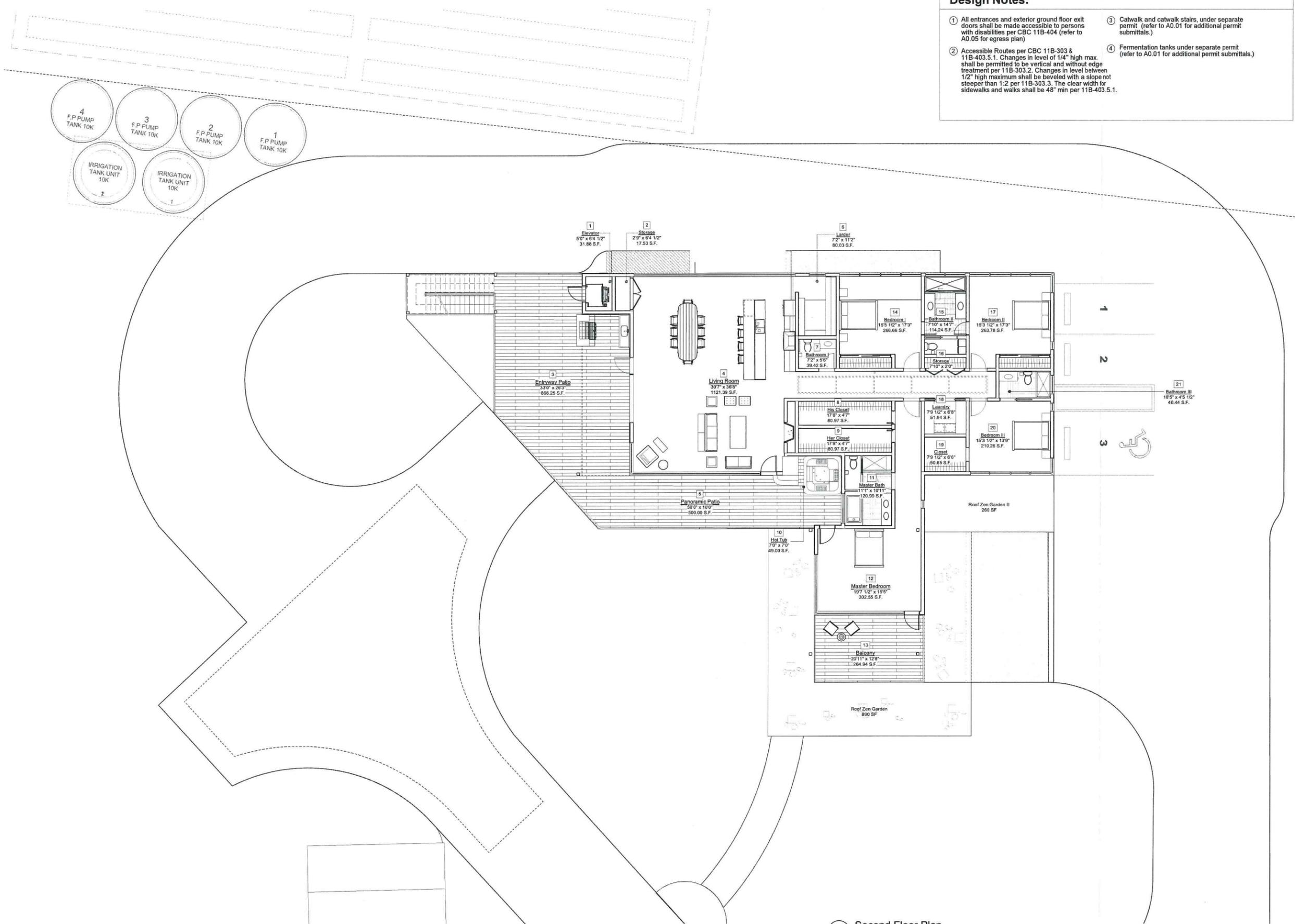
ALTA VINEYARDS
 NEW CONSTRUCTION
 2125 Silverado Trail
 Napa CA 94558
 APN: 039-270-005

REV _____ DATE _____

Date: 02.01.19
 Drawn By: HZK, FY
 Project No.: 1820
 Scale: As Noted

2nd Floor Plan

SHEET NO.:
A1.02



① Second Floor Plan
 Scale: 1/8" = 1'-0"



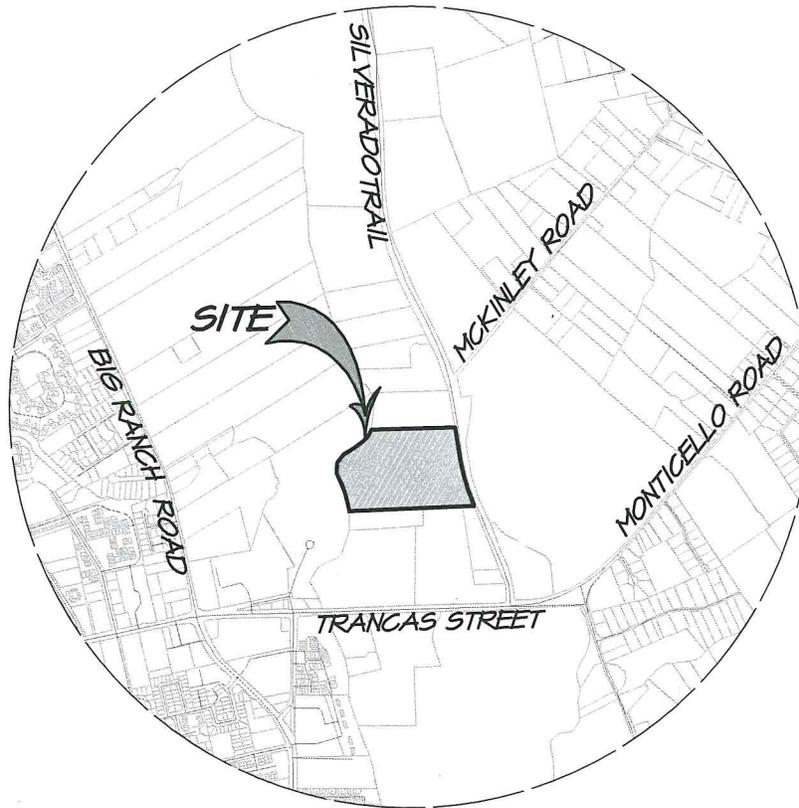
ATTACHMENT 2

VICINITY MAP
USGS MAP
SOILS MAP
FIRMETTE MAP

ALTA VINEYARDS VICINITY MAP

NAPA COUNTY

CALIFORNIA



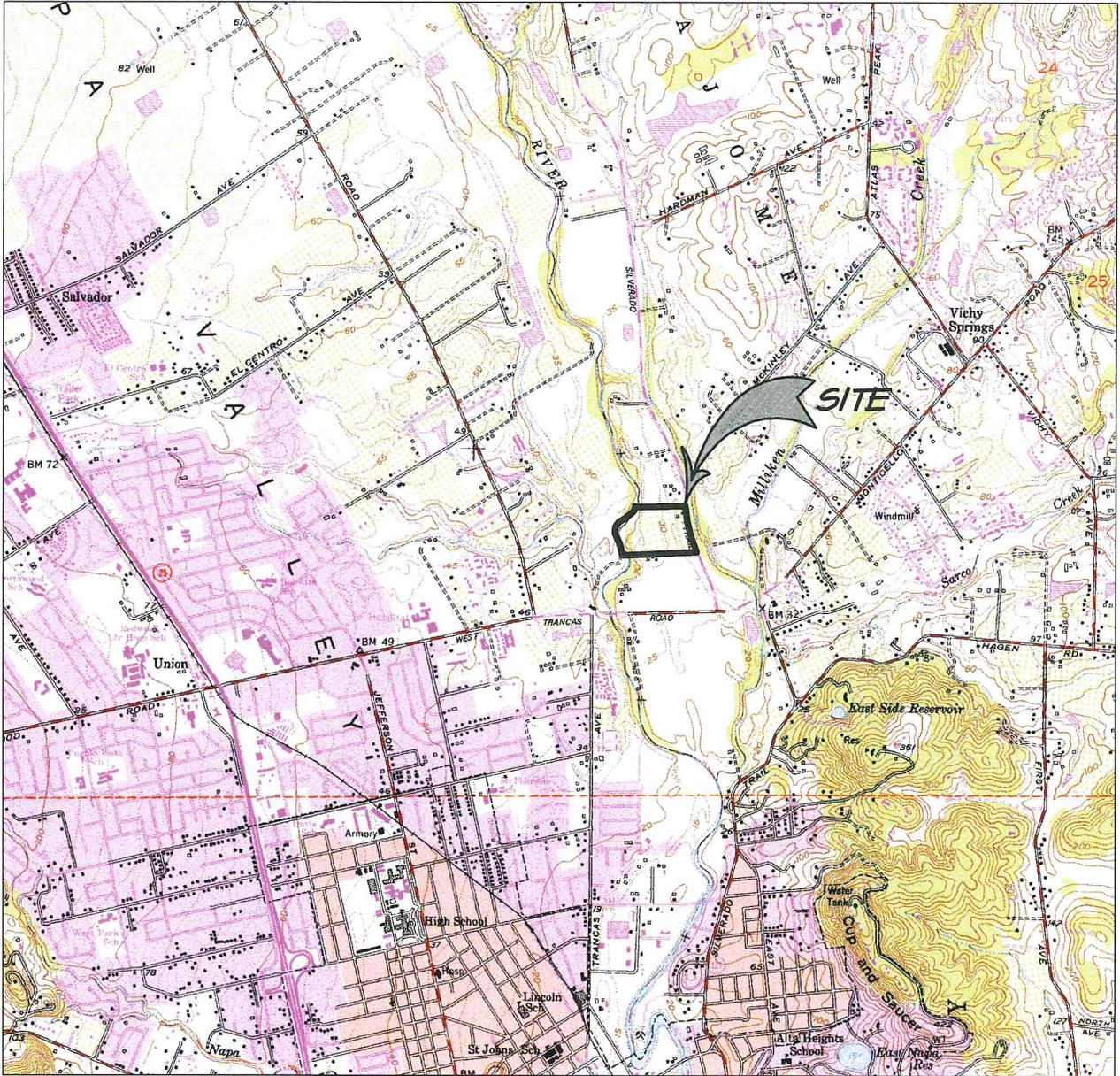
VICINITY MAP

SCALE: 1" = 2000'



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ALTA VINEYARDS USGS MAP



VICINITY MAP

SCALE: 1" = 3000'

	1515 FOURTH STREET NAPA, CALIF. 94559 OFFICE 707 252.3301 + www.RSAcivil.com +

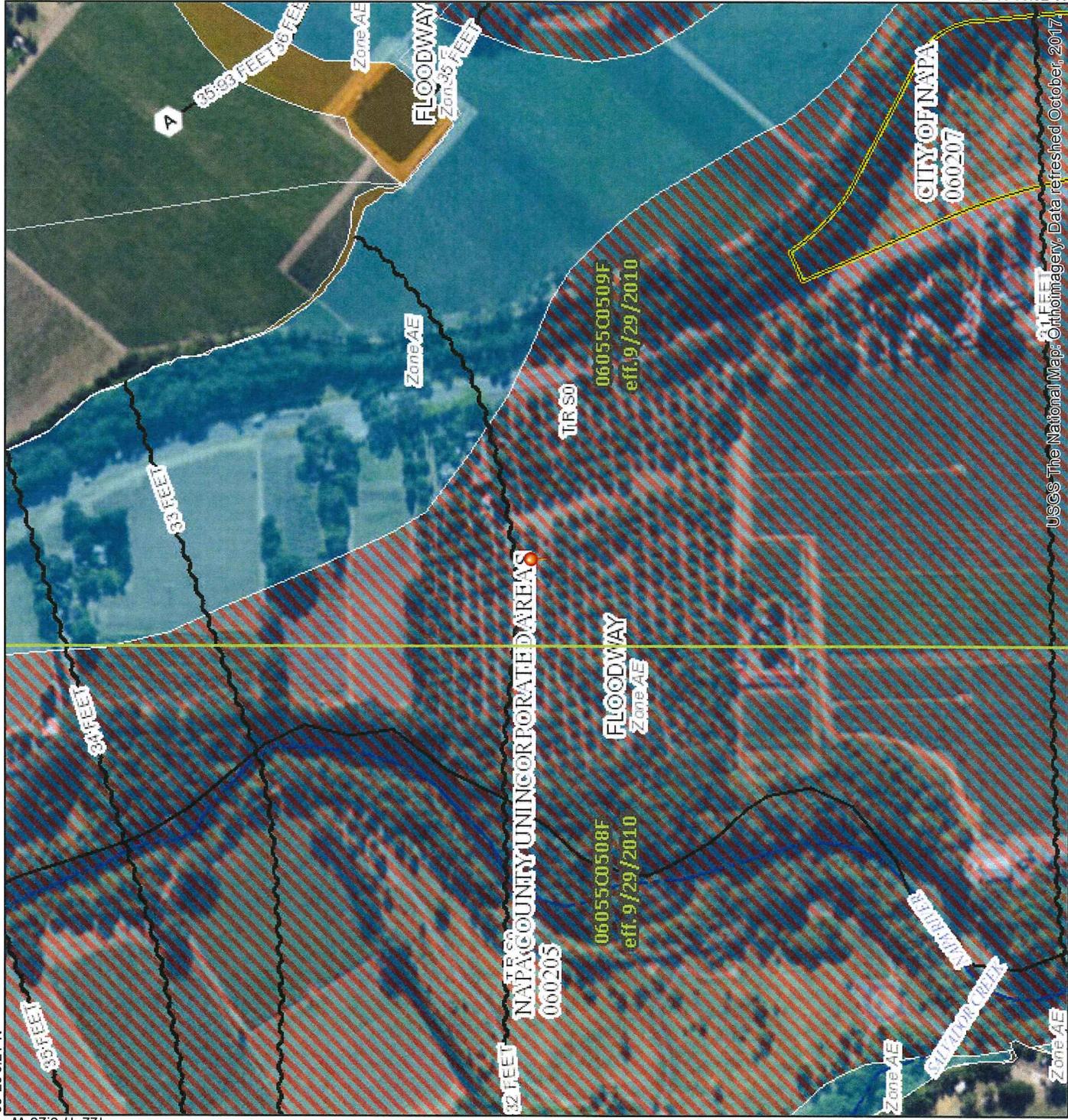
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1980

JANUARY 30, 2019 4117016.0 Exh-USGS

National Flood Hazard Layer FIRMette



38°20'0.21"N



USGS The National Map: Orthoimagery. Data refreshed October, 2017. 1:6,000

122°16'30.82"W

38°19'31.99"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS

- Area of Minimal Flood Hazard Zone X
- Effective LOMRS
- Area of Undetermined Flood Hazard Zone

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS

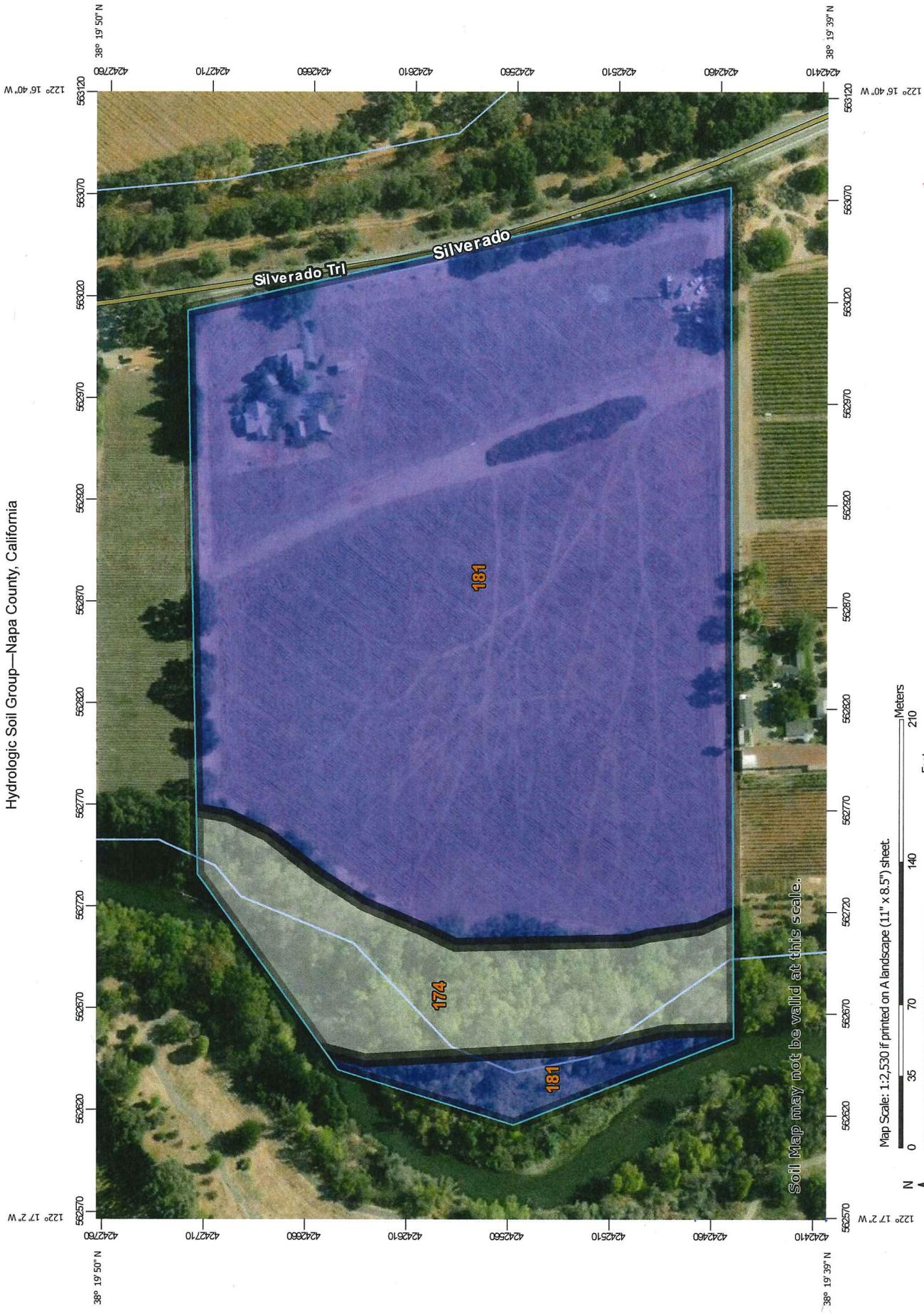
- Digital Data Available
- No Digital Data Available
- Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

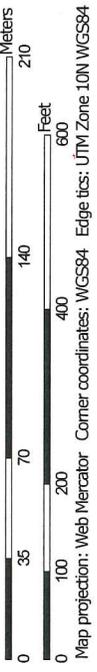
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/30/2019 at 7:26:22 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



Soil Map may not be valid at this scale.

Map Scale: 1:2,530 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

- Area of Interest (AOI)**
 - Area of Interest (AOI)
- Soils**
 - Soil Rating Polygons
 - A
 - A/D
 - B
 - B/D
 - C
 - C/D
 - D
 - Not rated or not available
 - Soil Rating Lines
 - A
 - A/D
 - B
 - B/D
 - C
 - C/D
 - D
 - Not rated or not available

- C
- C/D
- D
- Not rated or not available
- Water Features**
 - Streams and Canals
- Transportation**
 - Rails
 - Interstate Highways
 - US Routes
 - Major Roads
 - Local Roads
- Background**
 - Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Napa County, California
 Survey Area Data: Version 11, Sep 12, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Oct 31, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
174	Riverwash		3.8	14.7%
181	Yolo loam, 0 to 10 percent slopes, moist, MLRA 14	B	22.3	85.3%
Totals for Area of Interest			26.2	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition



Component Percent Cutoff: None Specified

Tie-break Rule: Higher



ATTACHMENT 3
SITE EVALUATION

Permit Number: E18-00078
 APN: 039-270-005
 RSA+ Project Number: 4117016.0

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			
	0-28	G	0%	CL	MSB	H	FRB	SS	FF	CF	
X	38										

Notes: Limit is bottom of pit. Pit good.

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			
	0-35	G	0%	CL	MSB	L	FRB	SS	CF	CF	
X	35										

Notes: Limit is bottom of pit. Pit good.

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			
	0-32	G	0%	CL	MSB	SH	FRB	SS	FM	FF	
X	32										

Notes: Limit is bottom of pit. Pit good.

Permit Number: E18-00078
 APN: 039-270-005
 RSA+ Project Number: 4117016.0

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			
	0-32	G	5%	CL	MSB	SH	FRB	SS	FF	CM	
X	32										

Notes: Limit is bottom of pit. Pit good.

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			
	0-33	G	5%	CL	MSB	H	FRB	SS	FF	CM	
X	33										

Notes: Slightly gritty at 30". Limit is bottom of pit. Pit good.

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			
	0-35	G	5%	CL	MSB	H	FRB	SS	FF	CM	
X	35										

Notes: Slightly gritty at 30". Limit is bottom of pit. Pit good.

Permit Number: E18-00078
 APN: 039-270-005
 RSA* Project Number: 4117016.0

Test Pit # 7

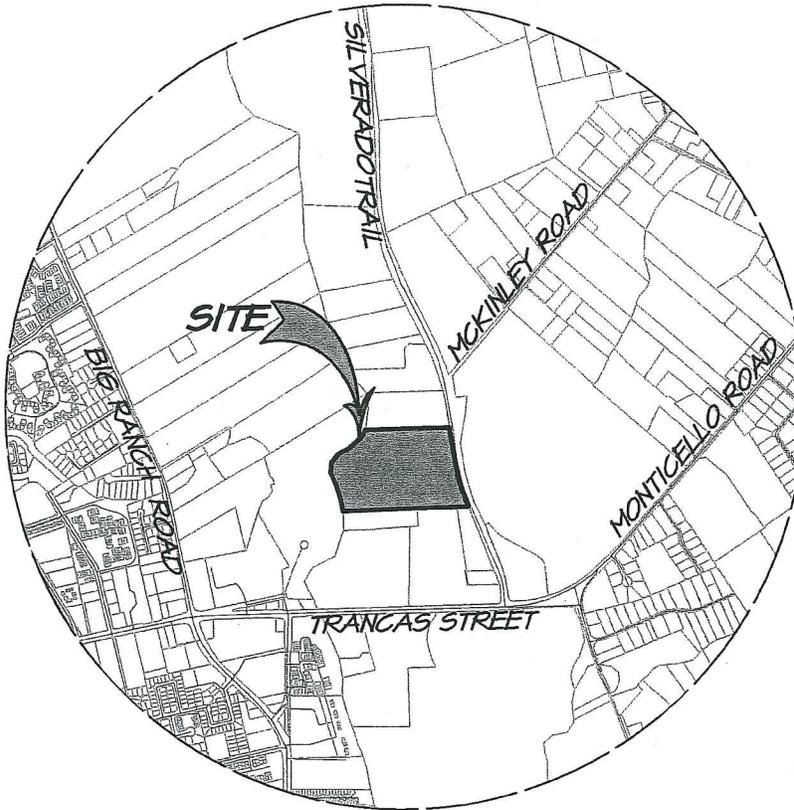
X = Limiting Horizon	Horizon Depth (Inches)	Boundary	%Rock	Texture	Structure (Grade / Shape)	Consistence			Pores (QTY / Size)	Roots (QTY / Size)	Mottling (QTY / Size/ Contrast)
						Side Wall	Ped	Wet			
	0-38	G	0%	CL	MSB	H	FRB	SS	CF	FF	
X	38										

Notes: Limit is bottom of pit. Pit good.

ALTA VINEYARDS VICINITY MAP

NAPA

CALIFORNIA



VICINITY MAP

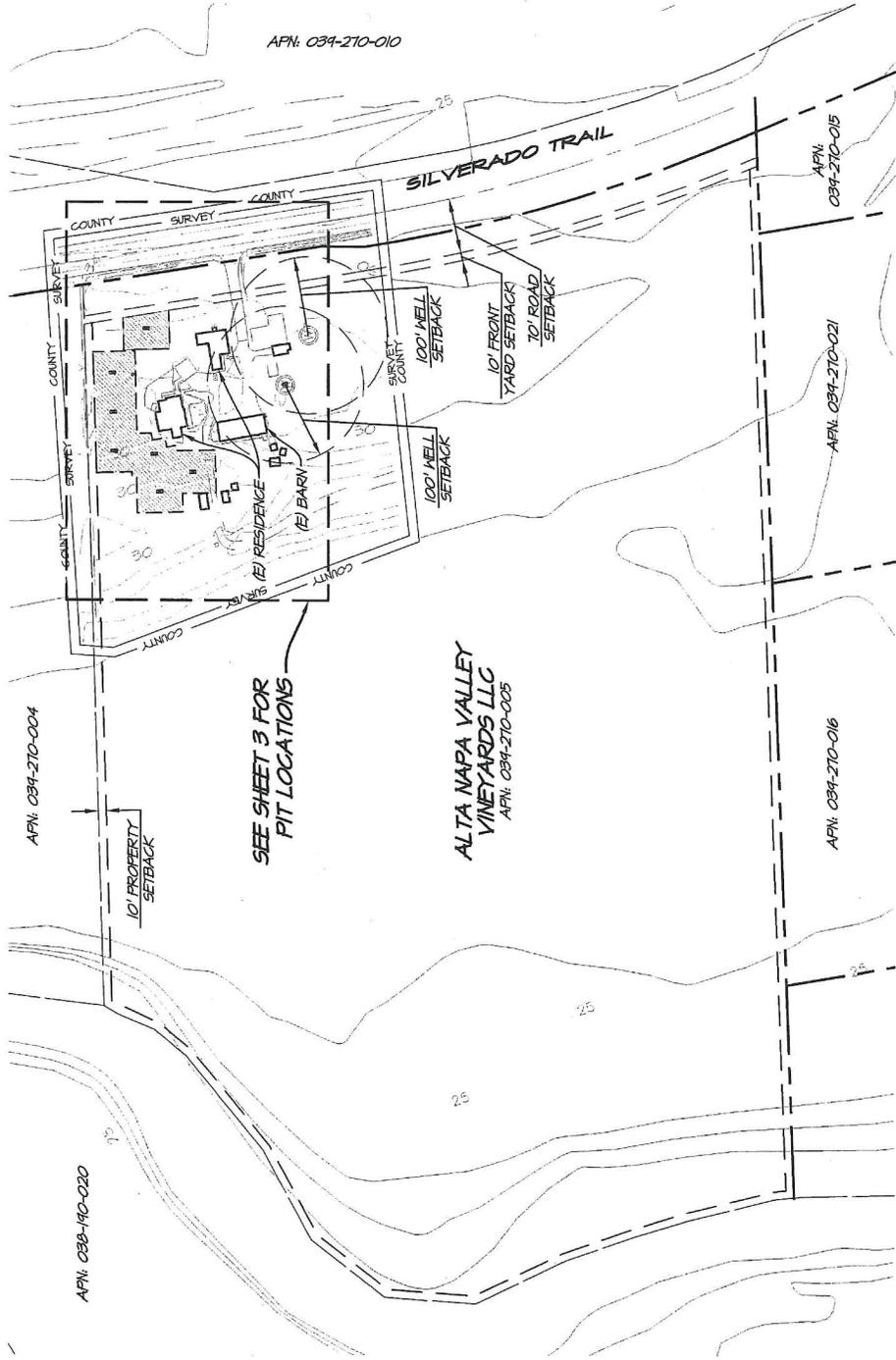
SCALE: 1" = 2000'



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FEB. 28, 2018 4117016.0 Exh-Pit Map.dwg 1 of 3

ALTA VINEYARDS SITE PLAN NAPA CALIFORNIA



RSA+
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NAPA, CALIF. 94559
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+ www.RSAcivil.com +

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FEB. 28, 2018 411016.0 Exp-File Map.dwg 2 of 3

ALTA VINEYARDS PIT LOCATIONS NAPA CALIFORNIA

LEGEND

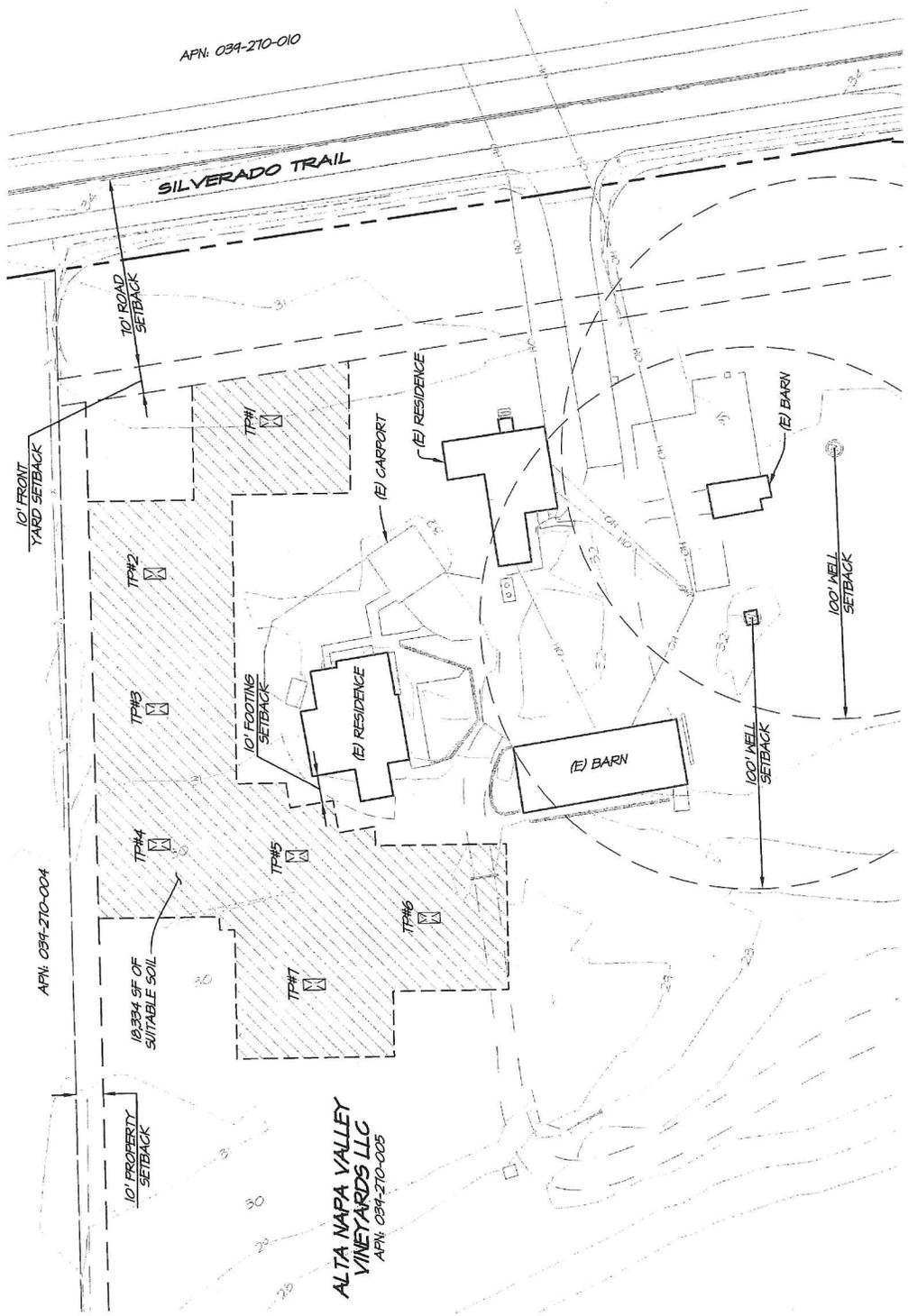
- ☒ TP# GOOD FIT, MIN. 32" OF SUITABLE SOIL.
- ☒ TP# NOT GOOD, INSUFFICIENT DEPTH OF SUITABLE SOIL.
- ☐ AREA OF ACCEPTABLE SOIL

SITE EVALUATION DATE: FEBRUARY 22, 2018
 APN: 050-270-029
 ADDRESS: 2125 SILVERADO TRAIL
 NAPA, CA 94559
 ENV. HEALTH INSPECTOR: MAUREEN SHIELDS-BROWN



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 OFFICE | 707.252.3301
 + www.RSACivil.com +

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 FEB. 28, 2018 4117016.0 Exp-Fit Mapping 3 of 3



**ALTA NAPA VALLEY
 VINEYARDS LLC**
 APN: 039-270-005



ATTACHMENT 4

TREATED PROCESS WASTEWATER IRRIGATION BALANCE TREATED PROCESS WASTEWATER IRRIGATION EXHIBIT

**Reclaimed Process Wastewater
Water Balance for Irrigation and Storage**



Project Description		Annual Process Waste Flow Volume	
Project Number:	4117016.0	Wine Production:	10,000 gal/year
Project Name:	Alta Wines		
Prepared By:	Julia King	Annual Process Waste per Gallon Wine:	5 gal/year
Date:	April 17, 2019	Total Annual Process Waste Generated:	50,000 gal/year

Vineyard Irrigation Parameters		Landscape Irrigation Parameters	
Acres of irrigated vineyard:	14.00 acres	Crop type / name:	Cover Crop
Row spacing:	8.0 feet	Total irrigated acres of crop:	0.00 acres
Vine spacing:	8.0 feet		
Total number of vines:	9,529 vines		
Water use per vine per month (peak):	26 gal		
Total peak monthly irrigation demand:	247,748 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]:	2,000	3,000	3,000	2,500	3,000	3,500	4,500	5,000	7,000	7,000	5,500	4,000

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)	0	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):	1.6	1.6	2.6	26.0	26.0	26.0	26.0	26.0	26.0	26.0	2.6	2.6
Total vineyard irrigation demand [gallons]:	14,865	14,865	24,775	247,748	247,748	247,748	247,748	247,748	247,748	247,748	24,775	24,775
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]	2,000	3,000	3,000	2,500	3,000	3,500	4,500	5,000	7,000	7,000	5,500	4,000
Remaining vineyard irrigation demand after using this month's process water [gallons]	12,865	11,865	21,775	245,248	244,748	244,248	243,248	242,748	240,748	240,748	19,275	20,775
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	12,865	11,865	21,775	245,248	244,748	244,248	243,248	242,748	240,748	240,748	19,275	20,775
Net storage after vineyard irrigation drawdown [gallons]	0	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]	0	0	0	0	0	0	0	0	0	0	0	0
<i>Water balance continues on next page for cover crop irrigation.</i>												

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)	0	0	0	0	0	0	0	0	0	0	0	0
Reference ET (ETo) (in/month) (see note 1)	1.32	1.8	3.32	4.78	6.11	6.84	7.07	6.3	4.9	3.45	1.74	1.29
Crop Coefficient (kc) (see note 2)	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Crop water demand per acre [inches]	0.79	1.08	1.99	2.87	3.67	4.10	4.24	3.78	2.94	2.07	1.04	0.77
Crop water demand per acre [gallons]	21,505	29,325	54,088	77,873	99,541	111,433	115,180	102,636	79,828	56,205	28,347	21,016
Total crop water demand for irrigated area [gallons]	0	0	0	0	0	0	0	0	0	0	0	0
Will landscape be irrigated with reclaimed water this month?	N	N	N	N	N	N	N	N	N	N	N	N
Process wastewater remaining after vineyard irrigation, reclaimed for landscape irrigation [gallons]	0	0	0	0	0	0	0	0	0	0	0	0
Landscape irrigation water required from storage or other source [gallons]	0	0	0	0	0	0	0	0	0	0	0	0
Drawdown from storage for landscape irrigation [gallons]	0	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
<i>End of Water Balance</i>												

Peak Monthly Storage = 0 gallons

Notes:

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

ALTA VINEYARDS VINEYARD IRRIGATION EXHIBIT

NAPA CALIFORNIA



LEGEND:

- EXISTING VINEYARD TO RECEIVE TREATED PROCESS WASTEWATER IRRIGATION = 14.0 ACRES
- EXISTING VINEYARD WITHIN PROCESS WASTEWATER IRRIGATION SETBACKS = 1.2 ACRES
- EXISTING VINEYARD TO BE REMOVED = 0.5 ACRES

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