

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN FRANCISCO BAY REGION

TENTATIVE ORDER WASTE DISCHARGE REQUIREMENTS FOR:

THE WINE GROUP, LLC - CONCANNON WINERY CONCANNON WINERY WASTEWATER MANAGEMENT SYSTEMS LIVERMORE VALLEY, ALAMEDA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Water Board), finds that:

1. Purpose of Order

Concannon Winery is an existing commercial winery facility located in an unincorporated area of Alameda County, adjacent to the incorporated City of Livermore. The unincorporated area is not served by municipal sewerage systems. All development in this area is served by individual onsite wastewater treatment and dispersal systems. Development within the adjacent City of Livermore is served by municipal sanitary sewer with a centralized wastewater treatment plant owned and operated by City of Livermore. Concannon Winery generates sanitary sewage (domestic wastewater) from employees and visitors, and winery wastewater from wine production and wine bottling. These wastes are managed by onsite wastewater treatment systems with discharges of treated wastewater to subsurface dispersal systems. These discharges of waste to land are subject to regulation by the Water Board. The purpose of this Order is to prescribe waste discharge requirements for the wastewater systems serving Concannon Winery.

2. Facility and Discharger

The facility is located at 4596 Tesla Road, Livermore, CA 94550. The facility name is stated as "The Wine Group, LLC - Concannon Winery" in the Report of Waste Discharge, and "Concannon Vineyard(s)" in Alameda County land use permit documents. For purposes of this Order, the facility is called Concannon Winery. Concannon Winery and the property on which it is located are owned by the Wine Group, LLC. Concannon Winery and the Wine Group, LLC, are collectively called the Discharger. The Discharger is legally responsible for the wastewater system and the discharges of waste to land regulated by this Order, and for compliance with this Order.

3. Report of Waste Discharge

A Report of Waste Discharge (ROWD) in application for waste discharge requirements for the subject wastewater systems was prepared by the Discharger's agent, Kennedy/Jenks Consultants (KJC). The ROWD consists of the following:

a. Technical Report

A bound report titled, *Revision No. 3, Report of Waste Discharge for Concannon Winery, Livermore, California, 29 August 2012*, submitted by the Wine Group via cover letter dated September 6, 2012, received September 11, 2012. (Electronic file document numbers: Cover Letter, 1088742; Report, 1088743.)

b. Supplemental Information

A letter-report titled, *Supplemental Information for the Report of Waste Discharge the Wine Group, Concannon Winery, Livermore, California*, dated October 10, 2012. (Electronic file document number 1088744.)

c. ROWD Application Form (Form 200)

A completed Form 200, signed by Kevin Baskin, Director, Concannon Winery, signature dated October 9, 2012, 3 pages, as Attachment 2 of the Supplemental Information letter report of Item b above. (In electronic file document number 1088743.)

d. Monitoring Well Installation Plan

A bound technical report titled, *Monitoring Well Installation Work Plan, The Wine Group, Concannon Winery, Livermore, California* dated October 4, 2012, received October 9, 2012. (Electronic file document number 1398271.)

4. Facility Description

a. Site and Property

Concannon Winery encompasses approximately 257 acres in central Livermore Valley, south of the City of Livermore, and includes multiple contiguous parcels. The lands are north and south of South Livermore Avenue and Tesla Road, where northwest-southeast South Livermore Avenue ends at the western end of east-west Tesla Road. Most of the land is in unincorporated Alameda County, southeast of the center of City of Livermore. One parcel of vineyards south of South Livermore Avenue is within City of Livermore city limits. City of Livermore incorporated lands extend to the southwest, west, north and east of Concannon Winery. The Concannon Winery property abuts the City of Livermore city limits along the northern property boundary. Within the Concannon Winery property, vineyards cover about 245 acres, buildings cover about three acres, paved areas for parking and roadways cover about 3.8 acres, and landscaping covers about five acres.

b. Land Uses and Buildings

Concannon Winery is a commercial winery facility. The facility uses include wine production, wine bottling, wine tasting, sales, tours, and special events such as weddings and picnics. The wine bottling operations include both facility-produced wine and wine produced elsewhere, imported to the facility in bulk and bottled. The facility includes five major buildings: the North Building, the South Building, the Tasting Room building, the Victorian House, and a 3-bedroom single-family residence house.

The South Building includes wine production and wine bottling operations and administrative offices. The North Building includes administrative offices, storage and potential future bottling operations. The North Building is new, constructed in late 2012 and completed in early 2013. All other buildings are older, constructed years ago and existing as of 2012 and the ROWD. The facility also includes out-door wine production areas and vehicle parking areas with impervious paved surfaces, and unpaved open-space areas with lawns and ornamental plants.

c. Wastewater Systems

Concannon Winery is currently served by three separate on-site wastewater treatment and discharge systems: the North Domestic Wastewater System; the South Domestic Wastewater System, and the Winery Wastewater System. The Winery Wastewater System serves both winery process wastewater and wine bottling wastewater.

d. Property Parcels

The Alameda County Assessor's Parcel Numbers (Parcel APN) for Concannon Winery property, as well as major land uses and related wastewater systems on each parcel, are tabulated below.

Parcel APN

99-1200-001

Land Uses and Wastewater Systems

North Building, wine tasting and restroom buildings, outdoor wine process area.
Wastewater: North Domestic System; Winery Wastewater System.

99-1200-002	South Building. Wastewater: No wastewater system on this parcel. Building served by South Domestic System.
99-1200-003	3-bedroom single-family home. Wastewater: South Domestic System.
99-0900-005	Vineyards and access roadway, west of building complex.
99-0900-001-09	Vineyards along north Facility boundary & two groundwater monitoring wells.
99-0801-014	Vineyards, south of Tesla Road (this parcel is within City of Livermore city limits).
99-0850-002-02	Vineyards, south of Tesla Road.
99-0850-003	Vineyards, south of Tesla Road.
99-0801-006	Vineyards, south of Tesla Road.
99-0850-007	Vineyards, south of Tesla Road.

e. Diagrams

The following figures illustrate the location and various land uses at the Facility:

- Figure 1. Site location map;
- Figure 2. Site map, plan view drawing of the northern portion of Concannon Winery showing the building complex, site boundaries, the major components of the wastewater systems, and immediately adjacent vineyards;
- Figure 2B. Aerial view of the entire Concannon Winery property; and
- Figure 3. Aerial view of Concannon Winery building complex and land uses.

5. Facility Physical and Climate Characteristics

Concannon Winery is located in the Livermore Valley, in the Arroyo Mocho watershed. The area is relatively flat. Elevation is 65 feet above mean sea level. Soil consists of gravelly coarse sandy loam, characterized as rapidly drained with permeability of 8.57 inches per hour. Groundwater in the Livermore Valley area is found at depths of four to 60 feet below ground surface. Groundwater in the vicinity of the subject discharges is found at ten to 20 feet below ground surface. Natural ground slope is about seven percent. Natural surface water drainage is onsite. Runoff is little or none. Average annual rainfall in this area is about 15 inches.

6. Facility Uses and County Use Permits

Concannon Winery is a commercial business Facility with uses regulated by an Alameda County Use Permit. The permitted uses include grape crushing and wine production, public wine tasting and tours, special events, and administrative offices. Concannon Winery receives and crushes between 400 to 600 tons of grapes annually, to produce no more than 93,000 gallons of wine per year. Concannon Winery's bottling capacity is 503,000 gallons per year. Grape crush season extends from August to October or November. Wine process solids such as grape stems and pomace are stored in water-tight plastic bins until hauled away. Concannon Winery employs 35 full time and 15 part time employees. Concannon Winery hosts visitors, which varies through the year, up to 100 persons per day or 250 persons per week. Concannon Winery is regulated under County Use Permit # [REDACTED], approved by Alameda County on [REDACTED].

7. Discharges

The discharges of waste to land regulated by this Order include treated winery process wastewater, wine bottling operations wastewater, and treated domestic wastewater from employees and visitors. The wastewater streams are treated and discharged to land on the Concannon Winery property in three separate wastewater systems: The North Domestic System; the South Domestic System, and the Winery Wastewater System. The Winery Wastewater System serves both winery process wastewater and wine bottling wastewater.

8. Discharge Quantity

Projected wastewater flows are tabulated below.

	Peak Day Flow (gallons per day)	Average Day Flow (gallons per day)	Annual Total Flow (gallons)
North Domestic System	2,955	810	295,700
South Domestic System	2,010	1,902	694,200
Winery Process Wastewater	1,600	762	278,130
Wine Bottling Wastewater	20,000	<u>9,832</u>	<u>3,588,680</u>
Combined Total		13,306	4,856,710

9. Discharge Quality

Projected effluent quality:

	BOD (mg/L)	TSS (mg/L)	Total Nitrogen (mg/L as N)
North Domestic System	30	30	20
South Domestic System	30	30	20
Winery Process Wastewater	3,000	500	30
Wine Bottling Wastewater	10	< 5	5

Notes: BOD = 5-day Biochemical Oxygen Demand at 20°C; TSS = Total Suspended Solids;
Total Nitrogen = sum of Nitrate-, Nitrite- and Total Kjeldahl-Nitrogens; mg/L = milligrams per Liter; N = nitrogen.

10. Discharge Nitrogen Loading Rates

Projected loading of nitrogen to land from the wastewater discharges is tabulated below (a) (b). The loadings are expressed in terms of annual mass applied in pounds per year, and are based on flows and concentrations shown, and 365 days per year.

	Average Day Flow (gallons per day)	Total Nitrogen	
		Annual Average Concentration (mg/L as N)	Annual Mass Load (pounds per year)
North Domestic System	810	20	49
South Domestic System	1,902	20	116
Winery Process Wastewater	762	30	70
Wine Bottling Wastewater	<u>9,832</u>	4	<u>118</u>
Combined Total	13,306		353

(a) BOD = 5-day Biochemical Oxygen Demand at 20°C; TSS = Total Suspended Solids;

Total Nitrogen = sum of Nitrate-, Nitrite- and Total Kjeldahl-Nitrogens.

(b) mg/L = milligrams per Liter; N = nitrogen.

11. Wastewater Systems - General Description

The discharges of waste to land regulated by this Order are treated domestic wastewater from employees and visitors, and winery wastewater from wine production and wine bottling operations. These discharges are controlled by means of three separate wastewater treatment and discharge systems: the North Domestic System, the South Domestic System, and the Winery Wastewater System. The Winery Wastewater System is used for both wine production wastewater and wine bottling wastewater. The domestic wastewater systems each include treatment by septic tanks, supplemental treatment units designed to provide nitrogen reduction, and subsurface discharges of treated wastewater by pressurized

pipe networks installed within constructed above-grade earthen mounds. The Winery Wastewater System includes treatment by a rotary screen and septic tanks, and then subsurface discharges of treated wastewater by gravity-flow into earthen trenches equipped with manufactured plastic structural chambers.

The wastewater systems are currently constructed and operating. The domestic wastewater systems were constructed in November 2012. The winery wastewater system was modified by improvements completed in October 2012. The wastewater systems and improvements were constructed under permit, plan review and installation inspection by Alameda County Environmental Health Services. The wastewater systems are described in the ROWD. The ROWD includes descriptions of both facility infrastructure existing as of the ROWD preparation, mid-2012, and infrastructure proposed to be constructed. The proposed work was subsequently completed, in late 2012. In this Order, the terms 'old' and 'new' are used to differentiate, respectively, infrastructure existing prior to or as of the August 2012 ROWD, and infrastructure completed after the August 2012 ROWD.

Each wastewater system is comprised of all equipment and control systems that provide collection, conveyance, treatment, storage and discharge to land of the respective wastewater streams. Descriptions of the wastewater systems are given below and are based on information contained in the ROWD. The following figures depict the wastewater systems:

Figure 4. Plan view diagram of the old winery wastewater system;
Figure 5. Schematic diagram of the new winery wastewater system; and
Figure 6. Schematic diagram of the new domestic wastewater systems.

Sanitary Wastewater Systems

12. North Domestic Wastewater System

The North Domestic Wastewater System is the wastewater treatment and discharge system serving domestic wastewater from the north office building, administrative offices, wine warehouse operations, wine tasting building and public bathroom building. The system includes collection in watertight pipes, primary treatment in a septic tank, secondary treatment and at least 50 percent nitrogen reduction by packed-bed media filter, pumps and pump tanks and subsurface dispersal by pressurized pipe networks in a set of four at-grade earthen mounds. The system is located on Parcel 99-1200-1, 1000 feet north of the building complex.

Domestic wastewater from the North Building flows into a 2,000-gallon septic tank located off the southwest corner of the building. From the septic tank, wastewater flows into the adjacent 2,000-gallon pump tank. The wastewater is then pumped through a flow meter, and then through 1,000 feet of distribution pipe to the treatment unit. The treatment unit is located adjacent to the dispersal system. The treatment unit is a 5,000-gallon customized septic tank that includes a treatment chamber, pump chamber and effluent pump. The treatment chamber is filled with proprietary nitrogen treatment media. Treated wastewater is pumped from the treatment unit through an adjacent automatic distributing valve, and thence to the subsurface dispersal system.

The North Domestic Wastewater System subsurface dispersal system is a pressurized distribution pipe network installed in multiple constructed earthen mound structures, with grass-vegetated landscape surface. The system has a design flow of 2,955 gallons per day. The system includes a constructed dispersal system and reserve/replacement area. The design soil application hydraulic loading rate is 0.714 gallons per square foot per day. The minimum required soil application discharge area is 4,139 square feet. The final design soil application discharge area is 4,400 square feet.

The dispersal system is constructed as four parallel distribution components, each with a gravel distribution bed, distribution pipe network and surrounding earth mound. The automatic distributing

valve, alternately distributes final treated wastewater from the treatment unit to each of the distribution components sequentially in turn, alternating with each pump operation cycle. Two distribution beds are each 100 feet long and two are 120 feet long. In cross-section, the distribution beds are each ten feet wide by one foot tall, constructed of three-quarter-inch washed gravel laid carefully on native grade, and covered by a surrounding mound of soil. The soil mounds are one-foot deep over the distribution beds, and two-feet deep beside the beds. The distribution pipe network in each mound consists of two parallel lines thirty inches apart with distribution orifices drilled on three-foot centers throughout. The pipe network is installed in the gravel distribution bed at nine inches above grade. The soil surface is grass-vegetated but otherwise unencumbered. The constructed dispersal system includes four mounds as the primary dispersal system. Seven additional mounds have been designed as reserve/replacement components, for use when and if the need arises. The system includes four shallow observation wells, three feet deep each, called "performance wells" in the ROWD, and required by Alameda County for monitoring of infiltration.

13. South Domestic Wastewater System

The South Domestic Wastewater System is the wastewater treatment and discharge system serving domestic wastewater from the south office building, the wine tasting Facility, wine bar, and three-bedroom residence. The system includes collection in watertight pipes, primary treatment in a septic tank, secondary treatment and nutrient removal in a proprietary treatment unit designed to include at least 50% nitrogen reduction and subsurface dispersal by uniform distribution through pressurized pipe networks in a set of four elevated mound structures. The system is located on Parcel 99-1200-2, 400 feet southeast of the South Building, to the west of the entrance roadway at 4596 Tesla Road.

Wastewater from the wine tasting facility and residence is piped directly through a sewer line to a 3,000 gallon septic tank, while waste from the wine bar passes through a grease interceptor prior to entering this septic tank. From the septic tank, the wastewater flows to the treatment unit. The treatment unit is housed in a 5,000 gallon customized septic tank that includes a treatment chamber, pump chamber and effluent pump. The treatment unit is located adjacent to the dispersal system mounds. The treatment chamber is filled with proprietary nitrogen treatment media. Nitrogen removal takes place in the treatment unit. Treated wastewater is then pumped from the treatment unit through a flow meter, then about 200 feet of effluent transport pipe to the automatic distributing valve and thence to the subsurface dispersal system.

The South Domestic Wastewater System subsurface dispersal system is a pressurized distribution pipe network installed in multiple constructed earthen mound structures, with grass-vegetated landscape surface. The system includes a constructed distribution system and reserve/replacement area. The system design flow is 2,010 gallons per day. The design soil application hydraulic loading rate is 0.971 gallons per square foot per day. The minimum required soil application discharge area is 2,070 square feet. The final design soil application discharge area is 2,800 square feet.

The dispersal system is constructed as four parallel distribution components, each with a gravel distribution bed, distribution pipe network and surrounding earth mound. The automatic distributing valve alternately distributes final treated wastewater from the treatment unit to each of the distribution components sequentially in turn, alternating with each pump operation cycle. The four distribution beds are each seventy feet long by ten feet wide, oriented in a northeast to southwest direction. In cross-section, the distribution beds are each ten feet wide by one foot tall, constructed of three-quarter-inch washed gravel laid carefully on native grade, and covered by a surrounding mound of soil. The soil mounds are one-foot deep over the distribution beds, and two-feet deep beside the beds. The distribution pipe network in each mound consists of two parallel lines thirty inches apart with distribution orifices drilled on three-foot centers throughout. The pipe network is installed in the gravel distribution bed at nine inches above grade. The soil surface is grass-vegetated but otherwise unencumbered. The constructed dispersal system includes four mounds as the primary dispersal system. Seven additional mounds have been designed as reserve/replacement components, for use when and if the need arises. The

system includes four shallow observation wells, three feet deep each, called "performance wells" in the ROWD. These wells are required by Alameda County for monitoring of infiltration.

14. Winery Wastewater System - General

The winery wastewater system is the wastewater treatment and discharge system serving non-domestic industrial process wastewaters from the wine production operations and wine bottling operations. Treated winery wastewater is discharged to land in a subsurface discharge system. Winery wastewater has been generated at Concannon Winery and discharged to land on the Concannon Winery property since Concannon Winery started operation in 1883. Records of the wastewater systems and discharges since that time have not been provided to the Water Board. The ROWD states that the existing winery wastewater system was approved by Alameda County in 2006. The ROWD does not include any documentation to support this assertion. Alameda County has not located any permit records for this system. The original design and construction specifications for the existing system are unknown. In 2012, the Discharger dug up portions of this system to explore its construction and extent. Results of that investigation are included in the ROWD and incorporated into the current design. The winery wastewater system was subsequently reconstructed to include improvements.

The winery wastewater system consists of two separate systems for collection and initial treatment of winery process wastewater and wine bottling wastewater. These two wastewater streams are then combined and discharged to land by the winery wastewater discharge system, a subsurface system of infiltration chambers installed in trenches within a portion of the vineyards on the Concannon Winery property.

15. Winery Wastewater Flows

a. Winery Process Wastewater

Winery process wastewater typically includes wash water from rinsing floors, tanks, bottles, barrels, and equipment. Peak flows occur during the crushing season. Most flow occurs during the working hours of the winery. High peak flow days can occur during the crushing season when there might be necessity to crush at maximum capacity for full 24-hour days.

Winery process wastewater is measured using a flow meter located at the rotary screen upstream of the discharge to the subsurface winery wastewater discharge system. This flow meter measures the combined winery process wastewater and wine bottling wastewater. Based on flow monitoring conducted in September through December 2011, the Discharger estimates that about 762 gallons per day of the total wastewater flow can be attributed to the winery process wastewater system. Based on the information provided in the ROWD, the design flow values for winery process wastewater are an annual average flow of 762 gallons per day, and peak daily flow of 1,600 gallons per day.

b. Wine Bottling Wastewater

The wine bottling operations plant currently discharges an estimated flow of 4,832 gallons per day. The proposed new wine bottling operations that will be installed in the new (north) building are estimated to add an additional 5,000 gallons per day to the total wine bottling wastewater flow. Based on the information provided in the ROWD, the design flow values for wine bottling wastewater flow are an annual average flow of 9,832 gallons per day, and peak daily flow of 20,000 gallons per day.

16. Winery Wastewater System - Components and Equipment

a. Collection and Conveyance System

The Concannon Winery wine production areas include a trench floor drain system and catch basins that are used for the collection and diversion of winery wastewater, which is generated during the sanitation process of the bottling line and wash down of the floors and equipment, and any stormwater coming in contact with winery process wastewater or other wine-making materials or

wastes. The trench floor drains and pipes are sloped towards the process wastewater sump to allow gravity flow.

b. Sump and Pump System

Winery process wastewater collected by the trench floor drains is stored in a 3,100 gallon capacity in-ground sump. The collected winery process wastewater is pumped out of the sump and into the rotary screen by an above-ground trash pump with a 150 gallon per minute capacity.

c. Rotary Screen

This unit is a stainless steel elevated rotary screen controlled by an ultrasonic level switch. The rotary screen is located on a curb-enclosed concrete slab that drains to the subsurface infiltrators. A flow meter located downstream of the rotary screen measures the discharges to the subsurface infiltrator leachfield system.

d. Subsurface Winery Wastewater Discharge System

The screened winery process wastewater is discharged by gravity flow to a subsurface infiltration system located in the vineyards. The ROWD describes that the subsurface infiltration system consists of approximately 2,000 lineal feet of manufactured plastic infiltration chambers installed in trenches between eight vineyard rows occupying approximately 26,000 square feet of area. The infiltration chambers are placed in native soil at a depth of three feet below ground surface.

17. Winery Wastewater System - Recent Improvements

a. General Description

The Discharger proposed, in the ROWD, improvements to the winery wastewater treatment and infiltration system. The improvements have been constructed, as described in this finding below. These improvements include: separation of the winery process wastewater from the bottling wastewater; installation of new septic tank(s) for the winery process wastewater stream; installation of a flow meter on the winery process wastewater stream; installation of a stormwater diversion valve on the winery process wastewater collection system; and installation of a new diversion valve within the winery wastewater discharge system.

b. Discharge System Diversion Valve

The diversion valve in the winery wastewater discharge system provides two separate points of discharge into the subsurface distribution pipe network. Providing two application points allows control of the wastewater discharges to one part of the system while the other part is at rest. The system's original chambered trenches of 240 feet length are now effectively divided into two parts of 120 feet length each. Treated wastewater is discharged into one part for a designated period of time, and then the valve is operated to divert the flows to discharge into the other part. The time period for discharge duration, and valve change, identified in the ROWD is six months. Six months is a typical rotation choice, and is acceptable. Other time periods may also be of benefit under certain circumstances, such as extended wet or dry periods or other criteria. This Order includes requirements for operation and maintenance of the diversion valve, and for monitoring and reporting of diversion valve status and changes.

c. Process Wastewater Collection System Diversion Valve

The diversion valve in the winery process wastewater collection system allows control of clean stormwater captured and collected within un-roofed paved portions of Concannon Winery used for handling and processing grapes and wine. During all times when wine process operations occur, the valve is set to divert flow into the winery wastewater system. During the wet weather season when there are no process operations occurring and the rainfall capture area is clean, the valve can be set to divert the clean stormwater to the onsite stormwater infiltration system. This Order includes

requirements for operation and maintenance of the diversion valve, and for monitoring and reporting of diversion valve status and changes.

d. New Septic Tanks and Pump Tank.

The improvements include two new 3,000-gallon capacity septic tanks and a new 2,000-gallon pump tank for the winery process wastewater. The ROWD describes that these tanks provide a total capacity of 8,000 gallons, consistent with tank specifications of Alameda County regulations for onsite wastewater systems, which require a capacity of five times the peak daily flow, and the identified winery process wastewater peak design flow of 1,600 gallons per day. Following the septic tanks, the winery process wastewater flows by gravity to the pump tank and is then pumped through a flow meter and combined with the bottling wastewater upstream of the rotary screen. After the rotary screen, the combined, treated, winery wastewater flows by gravity to the subsurface winery wastewater discharge system.

e. Design Flows

The wastewater systems and discharges addressed in this Order are designed to serve the existing and projected wastewater flows for wine process and bottling operations. The design wastewater flows for the winery wastewater system are the same as given in Finding 8 of this Order as "projected wastewater flows". The design Average Day Flow for the combined winery wastewater is 10,594 gallons per day. This includes 762 gallons per day winery process wastewater, 4,832 gallons per day current wine bottling wastewater, and 5,000 gallons per day projected flows for planned future additional bottling operations. The design Peak Day Flow for winery process wastewater is 1,600 gallons per day, and for wine bottling wastewater is 20,000 gallons per day.

The ROWD describes that a significant amount of the total flow is from the bottling operations, and that this wastewater is of higher quality than typical winery wastewater (i.e., the bottling wastewater has lower concentrations than typical winery wastewater, for Biochemical Oxygen Demand, Chemical Oxygen Demand, Total Suspended Solids, Total Dissolved Solids, Total Nitrogen, Alkalinity, Chloride, Sulfate and Phosphorus). The bottling operations are standardized such that the volume and schedule of water use which becomes wastewater is fairly stable and easier to estimate than the wine process wastewater flows. Based on flow data collected between September and December 2011, the Discharger estimated that the total winery wastewater flow is 5,594 gallons per day, with 4,832 gallons per day attributed to the bottling operations, and the remaining 762 gallons per day as the wine process wastewater flow. These are the current wastewater flows.

The wastewater system design flows include capacity for planned future installation of additional bottling capacity. The Discharger estimates that the future additional bottling processes would contribute an additional 5,000 gallons per day of bottling wastewater. Thus, the total projected bottling operations wastewater flow is 9,832 gallons per day, the projected winery process wastewater flow is 762 gallons per day, and the total projected winery wastewater flow is 10,594 gallons per day.

f. Bottling Wastewater

The bottling plant effluent will continue to discharge to the 3,100 gallon-capacity sump, then get pumped to the rotary screen and then flow by gravity to the subsurface winery wastewater discharge system.

18. System Construction Completion and Start-Up

The wastewater systems are currently completed and operating.. The North Domestic Wastewater System was completed and started in use as of November 5, 2012. The South Domestic Wastewater System was completed and started in use as of November 19, 2012. The Winery Wastewater System improvements were completed and the system started in use as of October 31, 2012. All wastewater system work was

completed under permit, plan review and installation inspection by Alameda County Environmental Health Services.

19. Tank Solids Management

All septic tanks and pump tanks will be inspected annually to assess accumulated solids, and serviced as necessary by removal of solids by licensed waste haulers. Solids are removed by pump truck and hauled away for offsite disposal at an authorized disposal facility.

20. Groundwater

Concannon Winery lies within the Livermore Valley Groundwater Basin. The Livermore Valley occupies approximately 69,600 acres bounded by the Pleasanton Ridge to the west, the Altamont Hills to the east, the Livermore Upland to the south and the Orinda Upland to the north. Water bearing formations within the Livermore Valley Groundwater Basin consist of continental deposits from alluvial fans, outwash plains, and lakes, including Valley-Fill Material, the Livermore Formation and the Tassajara Formation.

These water-bearing formations are considered sources of drinking water pursuant to Water Board Resolution No. 88-63. The water-bearing formations provide sufficient water to supply a single well capable of producing an average, sustained yield of at least 200 gallons per day of groundwater under most conditions with total dissolved solids below 3,000 mg/L, generally ranging from 300 to 550 mg/L and average 450 mg/L. Seismic faults restrict lateral groundwater movement within the Livermore Valley-Groundwater Basin, forming barriers resulting in higher groundwater levels on the upgradient side of the faults. In general, the groundwater gradient within the Livermore Valley Groundwater basin is directed to the west, then south towards Arroyo de la Laguna. Groundwater depths in the City of Livermore area range from four to 60 feet below ground surface (bgs). Site-specific groundwater elevation data is not included in the ROWD.

Groundwater levels immediately south of the building complex range from 10 to 20 feet bgs. Zone 7 maintains a groundwater monitoring well located about 500 feet south of the building complex and 300 feet southwest of the South Domestic Wastewater System (Zone 7 well number 3S/2E22B1). The total well depth is 32 feet. In 2012, groundwater depth at this well ranged from 13.6 feet bgs at the spring 2012 sampling to 14.0 feet bgs in the autumn 2012 sampling.

Water chemistry is highly variable within the Livermore Valley Groundwater Basin. In the area beneath Livermore, groundwater contains magnesium as the dominant cation and the entire basin has bicarbonate as the dominant anion. Some areas of the basin contain boron concentrations exceeding 2 mg/L. Some areas of the basin contain nitrate nitrogen levels that exceed the national standards for acceptable drinking water quality. This has resulted in closure of groundwater production wells in these areas. Zone 7 is actively monitoring and managing groundwater throughout the basin to understand, control and improve the groundwater quality with respect to nitrate nitrogen as well as other drinking water parameters.

21. Groundwater Impairment

Groundwater in the vicinity of the subject discharges is impaired for the beneficial use of municipal water supply. The impairment is caused by nitrate nitrogen concentrations that exceed the applicable water quality objective, which is 45 mg/L as Nitrate (which is equal to 10 mg/L as Nitrogen.)

Nitrate nitrogen levels at the Zone 7 groundwater monitoring well 3S/2E22B1, located immediately south of the building complex and representative of the groundwater in the vicinity of the subject discharges, have been observed to exceed the water quality objective for many years. The nitrate nitrogen levels are assessed at this well at least annually. Concentrations observed and reported for 2010, 2011 and 2012 were, respectively, 73.51, 69.97 and 70.41 mg/L as Nitrate (respectively, 16.3, 15.5, and 15.6 mg/L as N).

22. Groundwater Impairment Mitigation

The Discharger is pursuing efforts to control, minimize or eliminate contributions of nitrate nitrogen from Facility wastewater to the groundwater. The objective is to minimize discharges of nitrogen to impaired groundwater in the vicinity of the Concannon Winery property. One effort the Discharger is implementing is installation and use of nitrogen-reducing treatment systems for all domestic wastewater discharges at the facility. Another effort that the Discharger is pursuing is to secure a connection to the municipal sanitary sewer system that serves adjacent City of Livermore.

Based on initial research, the Discharger learned that the process for securing a sewer connection involves multiple government agencies including City of Livermore and Livermore-Amador Valley Water Management Agency and procedures that may take several years to complete. The Discharger proposed to continue using onsite wastewater treatment and discharge methods, with improved treatment including nitrogen reduction technology for all domestic wastewater, as interim measures while the sanitary sewer connection is being pursued.

This Order includes requirements for the Discharger to complete the sanitary sewer connection process in order to eliminate discharges of nitrogen from Concannon Winery wastewater sources to the groundwater. The Order also allows compliance by means of alternative actions to eliminate an equivalent load of nitrate nitrogen from other existing wastewater sources in the vicinity of the Concannon Winery discharges.

23. Groundwater Impact Analysis

a. Analysis and Model

The ROWD includes an evaluation of potential impacts to groundwater due to waste discharges from the Facility. The evaluation includes compilation of information about water uses and discharges, nitrogen discharges, and a ground water model. The model is a simple horizontal groundwater flow model to represent groundwater flow beneath the Concannon Winery property and assumes uniform mixing of percolate and groundwater. Percolate is the water and wastewater from various Concannon Winery sources applied to land and moving downward through the soil into the groundwater. The model is based on an estimated volume of groundwater below a selected land area that is parallel to the regional groundwater flow.

b. Wastewater Loads

The analysis includes estimated nitrogen loading to groundwater from all wastewater sources. The input data include annual average flows and nitrogen concentrations for each wastewater source as tabulated in Finding 10 of this Order. This input data includes the combined total wastewater annual average flow of 13,306 gallons per day, and assumed average nitrogen concentrations of 30 mg/L for winery process wastewater, 4 mg/L for wine bottling wastewater, and 20 mg/L for domestic wastewater. All nitrogen values are in units of mg/L as Nitrogen. The domestic wastewater value is based on assumed raw wastewater concentration of 40 mg/L as Nitrogen and fifty percent reduction through treatment. The total annual nitrogen load from the combined wastewater sources, *without*

nitrogen-reduction treatment, is estimated to be 518 pounds per year. The total annual nitrogen load from the combined wastewater sources, with nitrogen reduction treatment for the domestic wastewater, is estimated to be 353 pounds per year.

c. Vineyard Management Loads

The analysis also includes estimated nitrogen loading to groundwater from vineyard management fertilizer and irrigation practices. The estimates are based on two assumed values for Total Nitrogen concentration in irrigation percolate, which include irrigation water plus fertilizer. The two assumed values are 10 mg/L and 2 mg/L (both, mg/L as N). Based on a total irrigated area of 250 acres, and these respective assumed values, the nitrogen loading from irrigation percolate to groundwater is estimated to be, respectively, 4,216 pounds per year or 794 pounds per year.

d. Data Verification

The analysis uses estimated and assumed values for several parameters. This Order includes monitoring requirements to gather data during actual facility operations to verify and update as appropriate the estimated or assumed values. The Discharger will annually update and report on the water and nitrogen loading analyses and results based on the gathered data.

24. Groundwater Impact Analysis - Water and Nitrogen Data

An annual water balance with monthly inputs was prepared to tabulate and characterize the total water and wastewater discharges and associated nitrogen load infiltrating to ground from the Concannon Winery property. The multiple sources and input values used in the water balance are described below.

a. Process Wastewater

- (1) The process wastewater flow is given as 762 gallons per day. This flow is derived from the total wastewater flow measured by the Discharger during crush season between September and December 2011.
- (2) The process wastewater total nitrogen concentration is given as 30 mg/L. The value is based on "text-book" typical wastewater values for non-distilling California wineries.

b. Domestic Wastewater

- (1) The total domestic wastewater flow is given as 2,712 gallons per day.
- (2) The domestic wastewater total nitrogen concentration is given as 20 mg/L as N. This is based on an assumed concentration of 40 mg/L nitrogen for untreated domestic wastewater and fifty percent nitrogen reduction by treatment prior to land discharge.

c. Bottling Plant Effluent

- (1) The total bottling plant effluent flow is given as 9,832 gallons per day. This flow is based on flow measurements by the Discharger between September and December 2011 that yielded an average of 4,832 gallons per day, and the additional projected future flow of 5,000 gallons per day associated with planned additional bottling plant capacity not yet constructed.
- (2) The bottling plant nitrogen concentration is given as 4 mg/L as N. This value is based on lab test results from two grab samples taken in August 2011, each approximately 4 mg/L.

d. Irrigation

Concannon Winery irrigates its vineyards using water supplied by California Water Service Company through the use of local groundwater pumped from 12 wells and surface water purchased from Alameda County, Zone 7 Water Agency. Concannon Winery irrigates vineyards May through August using an above-grade drip irrigation system. Monthly irrigation amounts are given as inches of water applied. The values are reported to be calculated based on irrigation schedule information provided by irrigation managers. Tabulated "net irrigation" values are reported to account for crop uptake. The

monthly net irrigation rates are given as 2.5 inches in May, 3.5 inches in June, and 4.0 inches in both July and August. The annual total net irrigation is given as 14.0 inches.

e. Precipitation

The water balance includes monthly precipitation data and crop uptake data to derive net percolation to groundwater. Monthly average rainfall data are from the Western Regional Climate Center Livermore station (044977); monthly average evapotranspiration data are from the CIMIS station in Pleasanton; crop uptake calculations include a crop coefficient for drip-irrigated vineyards that leave the space between vine rows without irrigation. Total annual values are given as: Precipitation = 14.2 inches, Crop Evapotranspiration = 31 inches, Net Irrigation = 14 inches and Net Percolation to Groundwater = 7.4 inches. Using this vineyard water balance, the Discharger estimated that approximately 7.4 inches per year percolates to groundwater throughout the 250 acres of the Concannon Winery property.

f. Stormwater

Stormwater inputs are given for vineyard areas and developed impervious-surface areas. For the precipitation record, monthly average rainfall data were used, as described above. For vineyard areas, direct rainfall on 250 acres of vineyards is used, and accounted for in the percolation estimate discussed above. For impervious surface areas, stormwater runoff was taken into account in the water balance using the NCRS Rational Method. 30,000 square feet of impervious area drains into the winery wastewater system and thence discharges into the winery wastewater subsurface dispersal system. The remaining 248,308 square feet of impervious areas drain either to the subsurface stormwater infiltration ("French drain") system, or as sheet flow to adjacent vineyards. The proposed new, north building was included in the stormwater calculations as runoff to nearby vineyards. The rational method was used to determine the amount of runoff, and evaporation was considered when calculating the net amount that infiltrates. For the groundwater modeling analysis discussed below, it is assumed that the amount of nitrogen in the stormwater runoff is negligible.

25. Groundwater Impact Analysis - Groundwater Model

The ROWD includes a numeric model of groundwater flow and quality to evaluate potential quality changes associated with nitrogen contributions from current and planned discharges. The model is described in the ROWD as follows.

a. The Model

A simple box model was used to characterize the groundwater flow beneath Concannon Winery..

b. Model Parameters

An area parallel to the direction of groundwater flow was chosen to encompass the site (2,700 ft by 4,150 ft). This area, with a thickness of 30 feet represents an estimate of the volume of groundwater beneath the site. The model's aquifer thickness was chosen to be 30 feet, based on information obtained from well construction data (Well 3S/2E22B1 is 32 feet deep and Well 3S/2E15R17 is 63 feet deep). The ROWD reports this is a conservative value for aquifer thickness. A hydraulic conductivity range of (15.3 to 383 ft/d) was based on a specific capacity range of (2 to 50 gpm/ft) for the Mocho II Aquifer, obtained from Zone 7 Groundwater Management Plan For Livermore - Amador Valley Groundwater Basin (p. 3-6). The hydraulic gradient was determined from Figure 3.2-5. A conservative porosity value of 0.15 was used based on professional opinion, and sensitivity analyses due to lack of measured data.

c. Model Parameter References

Values chosen for the model parameters are based in part on two groundwater monitoring wells that are relatively close to the Concannon Winery property and part of Zone 7's area-wide groundwater monitoring program. Well Number 3S/2E22B1 is located about 50 feet south of the property, and

Well Number 3S/2E15R17 is located about 600 feet east of the property. The locations of these wells, and the measured nitrate concentrations at these locations are illustrated in Zone 7's annually-updated maps, Figure 3.2-5 (*Groundwater Gradient Map, Upper Aquifer; <year>, Livermore Valley Groundwater Basin*) and Figure 3.2-10 (*Nitrate Concentrations (mg/L), Upper Aquifer; <year>, Livermore Valley Groundwater Basin*). These maps are published annually in Zone 7's Annual Report for the Groundwater Management Program. The 2010 versions of these maps are included in the ROWD.

d. Nitrogen Values

For purposes of the model calculations and comparison to existing groundwater conditions, all of the nitrogen in the percolate is conservatively assumed to be nitrate. Model calculations were made using a range of groundwater nitrate nitrogen values (13.8 mg/L to 16.6 mg/L, as nitrogen) based on data from the two monitoring wells described in 25. c., above.

e. Nitrogen Movement

Assuming the best scenario of groundwater quality (hydraulic conductivity of 15.3 feet per day and a nitrate as nitrogen concentration of 13.8 mg/L) groundwater nitrate movement beneath the site was calculated to be 51,752 pounds per year.

f. Nitrogen Loading Results

The Discharger's groundwater model and analysis found that the combined wastewater discharges could yield a nitrate load to groundwater of 518 pounds per year without nitrogen reduction, or 353 pounds per year with domestic wastewater nitrogen reduction. The analysis also found that projected nitrate contribution to groundwater from vineyard management practices could be on the order of 794 to 4,216 pounds per year.

The analysis compared these estimated loads to an estimated 'in-ground' annual load of the groundwater passing under the facility site in the course of ordinary groundwater flow. The estimated 'in-ground' groundwater load is 51,752 pounds per year, based on current groundwater nitrate nitrogen levels and a number of assumed site and soil parameters. In this comparison, the 'facility-use' load, wastewater and vineyard management contributions combined, represent less than 10 percent of the 'in-ground' load.

At the request of Zone 7 Water Agency, a smaller land area was also used in the evaluation. An area of 2.4 acres was used, representing only the leachfield (discharge) area of the facility. The same aquifer thickness, hydraulic conductivity range, and porosity were used. This evaluation found results similar to the complete-site evaluation, with estimated nitrogen loading ranging from 0.2 percent to 6.9 percent of the 'in-ground' groundwater nitrate mass loading.

This analysis and groundwater model assessment includes a variety of assumed data values. This Order requires monitoring and annual updated analysis to verify the model results.

26. Winery Wastewater Management Plan

a. Management

This section presents information on the management of treated winery wastewater. Concannon Winery uses screening and subsurface infiltration within its vineyards as the principle mechanism for treating winery wastewater. The winery process water is transported through the trench drain and piping system to sump, pump, and screening system prior to subsurface discharge. Hydraulic, organic and nitrogen loadings are discussed below.

b. Hydraulic Loading

Typical hydraulic loadings to the subsurface infiltration chambers from the screened winery process water sump will be approximately 10,594 gallons per day. This will result in approximately 3,870,000 gallons per year based on 365 days of operation.

The estimated hydraulic loading to land calculated based on the winery wastewater system discharge area of 26,000 square feet (0.6 acres) is an average of 17,657 gallons per day/acre or 0.4 gallons per day/square foot. The ROWD describes that the winery wastewater system is adequately sized to handle the anticipated hydraulic loadings.

The winery wastewater discharge system consists of multiple linear infiltration chambers. The exposed soil surface within the chambers is about 34 inches wide. Based on chamber lengths of 100 feet and twenty chamber units, the total chamber length is 2,000 feet and the exposed soil surface area is 5,667 square feet (0.13 acres). Based on this surface area, the soil hydraulic loading rate is 1.9 gallons per day/square foot.

c. Organic Loading

Using the total current and proposed bottling and process water loadings, the total organic loading on the winery wastewater discharge system leachfield is 16.2 pounds of BOD per day. On an annual basis, this results in an average annual loading of about 5,913 pounds of BOD per year.

The ROWD describes the value of 16.2 pounds per day as a conservative estimate because it assumes that there is no removal of BOD during storage/equalization in the sump and after screening. The ROWD does not include technical data or evaluation of BOD removal in the sump or after screening.

The ROWD describes the projected organic loading, on the basis of the winery wastewater discharge system land area of 26,000 square feet (0.6 acres), as an annual average of about 27 lbs/day/acre. The ROWD describes that this estimated organic loading rate is reasonable for typical land application loading rates for discharges containing simple sugars from wineries, and that the winery wastewater treatment system is adequately sized to handle these conservatively estimated organic loadings.

d. Total Nitrogen Loading

Based on the total current and proposed bottling and process water loadings, the total nitrogen load discharges to soil from the winery wastewater discharge system leachfield is approximately 188 pounds per year. This Order includes a maximum loading limit for total nitrogen from the winery wastewater discharges to land of 188 pounds per year.

Monitoring

27. Wastewater Monitoring

Wastewater quantity and quality are monitored at various points throughout the wastewater systems in order to assure proper operation and performance of the systems, and to document compliance with these requirements. Wastewater flows are monitored for the following: total process and sanitary wastewater generated by Concannon Winery; flows into and out of the treatment units; daily, monthly and annual totals of treated wastewaters discharged to land; and volumes of all wastewater and solids removed by pump truck for offsite disposal (e.g., septic tank servicing). Wastewater quality is monitored by sampling and analyses of treatment unit influents and effluents, and final treated wastewater prior to discharges to land. Monitoring requirements for the wastewater systems are specified in the Self-Monitoring Program of this Order.

28. Groundwater Monitoring

a. Monitoring Required

The subject wastewater system involves discharges of waste to land. Groundwater in the vicinity of the discharges is adversely impacted by levels of nitrate nitrogen that exceed applicable water quality objectives. In order to monitor groundwater quality and potential impacts of the proposed discharges, this Order requires the Discharger to implement a program of groundwater monitoring.

b. Groundwater Monitoring Proposed in ROWD

The ROWD includes description of proposed groundwater monitoring stations and protocol, and a technical report describing the work plan for installing two new monitoring wells. The proposal includes four wells-- two existing Zone 7 groundwater monitoring wells located upgradient of the wastewater systems and two new wells located downgradient of the wastewater systems. The new wells are located on Facility property along the north property boundary, to be constructed by the Discharger and then monitored by Zone 7 as part of the agency's ongoing area-wide groundwater monitoring program. Following consultation with and permits from Zone 7 for these wells, the Discharger completed installation of the wells in October 2013. The Self-Monitoring Program for this Order includes description of these wells, as Groundwater Monitoring Stations MW-1 and MW-2, and monitoring requirements including parameters and frequencies.

c. Groundwater Monitoring Plan Technical Report

This Order requires the Discharger to prepare a technical report documenting the entire proposed groundwater monitoring program, including locations and construction specifications of groundwater monitoring wells, installation results, protocol and schedule for sampling and analyses and reporting.

d. Monitoring Requirements

The Self-Monitoring Program for this Order includes minimum monitoring requirements for groundwater. Requirements include monitoring parameters and frequencies, and reporting requirements. The requirements also allow for modification of those requirements by the Executive Officer, as may be necessary or appropriate with respect to the Groundwater Monitoring Plan report or other new information about groundwater monitoring related to the discharges.

29. Operation and Maintenance Program

The Discharger must properly operate and maintain the wastewater systems to assure adequate and reliable wastewater management for the design wastewater type and flow, and compliance with waste discharge requirements. An Operation and Maintenance Program to achieve these objectives is appropriate and necessary. The Operation and Maintenance Program must include descriptions of all wastewater system components and equipment, accurately dimensioned site plans identifying the locations of all components and relevant site features (buildings, wells, drainage ways, roads, etc.), recommended strategies and procedures for system operations in accordance with system designs and discharge requirements, procedures and criteria for process control monitoring, maintenance activities necessary to ensure continuous proper operation of the wastewater system, and identification of persons responsible for operation and maintenance of the wastewater system and how these person can be contacted. This Order requires the Discharger to develop and implement an Operation and Maintenance Program acceptable to the Executive Officer and to prepare and submit an Operation and Maintenance Manual that fully describes the Operation and Maintenance Program.

30. Operation and Maintenance Providers

This Order requires the wastewater systems to be operated and maintained by certified wastewater treatment plant operators that are experienced and knowledgeable of the wastewater system design and proper operation, or other similarly qualified and licensed persons. This Order requires the Discharger to establish and maintain a valid contract with a qualified service provider for operation and maintenance of the wastewater systems.

31. Stormwater

a. No Off-Site Stormwater Discharges

The ROWD describes that all stormwater falling onsite is collected and managed on-site, with no off-site discharges of stormwater. The entire Concannon Winery property is relatively flat, does not collect stormwater from offsite sources, and all onsite rainfall infiltrates into the ground with no offsite runoff. Soils within the Concannon Winery property are rapidly permeable and can accommodate all stormwater falling on the land without runoff. Stormwater falling on the vineyard percolates into the ground in situ.

b. Stormwater from Non-industrial Process Areas

Stormwater from the South Building roof and adjacent paved areas is discharged to a 2,820-foot long three-feet wide "French" drain system adjacent to the south and west sides of the building. Stormwater from the North Building roof and adjacent paved areas sheet flows away from the building into adjacent vineyards for infiltration into the ground. Stormwater from the paved area east of the North Building drains to a three-feet wide, 110-feet long French drain located north of the parking area.

c. Stormwater from Winery Industrial Process Areas

Stormwater from the wine grape processing and wine storage tank areas will be managed in accordance with active use periods. The stormwater collection pipe network in this area includes a subsurface manually operated diversion valve that allows collected water to be diverted either to the winery process wastewater system or to the stormwater infiltration system. During grape handling and wine production activity periods, the collected water from this area will be diverted to the winery process wastewater system. During non-wine activity periods in the wet weather season when the only water present is clean captured rainwater, the valve will be set to divert the collected water to the stormwater infiltration system.

d. Industrial Stormwater Permit

Concannon Winery is not subject to the requirements of the statewide National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001, *Waste Discharge Requirements for Discharges of Stormwater Associated with Industrial Activities Excluding Construction Activities*, State Water Resources Control Board (State Water Board) Water Quality Order No. 97-03-DWQ (Industrial Stormwater Permit). The ROWD states that the Discharger completed and submitted a No Exposure Checklist for exemption from the Industrial Stormwater Permit because all stormwater is contained on site.

e. Stormwater Management Plan

This Order requires the Discharger to develop and maintain a Stormwater Management Plan that includes Operation Maintenance and Monitoring procedures for all stormwater management systems at Concannon Winery, and requires the Discharger to properly Operate and Maintain the stormwater systems.

f. Site Plan of Subsurface Stormwater Infiltration Systems

Attachment H of this Order, Figure 8, is a site plan view of the main buildings area and showing locations of the stormwater subsurface infiltration systems, labeled as "36" French Drain" located adjacent to the south and west sides of the existing (south) building.

32. Solid Waste

The ROWD identifies that, historically, winery processing solids such as spent pomace and grape skins and stems were hauled to a different parcel and spread as a soil amendment. The ROWD does not identify the property parcel where the solids were discharged to land or its location. The ROWD states that, in 2012, wine processing solids would either be hauled and spread on adjacent vineyard land owned

by the winery or hauled offsite to an approved facility for disposal. The ROWD does not describe any future solid waste disposal practices at the Concannon Winery property. Disposal of solid waste, including spreading of wine processing solids on the Discharger's property, is not authorized by this Order.

Basis of Requirements

33. Basin Plan

The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Water Board and approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law and the U.S. EPA, where required.

34. Basin Plan Implementation

The Basin Plan contains water quality objectives and beneficial uses for waters of the State within the San Francisco Bay Region, and an Implementation Plan. This Order implements the objectives and provisions of the Basin Plan. This Order includes effluent limits and discharge requirements intended to protect existing and potential beneficial uses of waters of the State, as well as to protect public health and the environment.

35. Beneficial Uses

The beneficial uses of waters of the State identified in the Basin Plan for groundwater in the Livermore Valley Groundwater Basin which includes the vicinity of the subject wastewater systems are:

- a. Municipal and domestic water supply;
- b. Industrial process and service water supply; and
- c. Agricultural water supply.

36. Antidegradation Policy

CFR Title 40, part 131.12, requires that State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy through State Water Board Resolution 68-16, which is deemed to incorporate the federal antidegradation policy where the federal policy applies. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. This Order is consistent with both the State and federal antidegradation policies, because it allows no net increase in nitrogen loading to the groundwater basin. This will be accomplished through Provision C.9, which requires the Discharger to cease discharges of nitrogen to the groundwater, either through connection to a municipal sanitary sewer with offsite treatment and discharge facilities or through implementation of alternative compliance actions.

Any nitrogen loading above net zero from this project will be temporally limited to the first two years, pending sewer connection or alternative actions. Therefore, based upon best professional judgment, any degradation caused by this project will be insignificant.

37. California Safe Drinking Water Act

It is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This order promotes that policy by requiring the Discharger to minimize or eliminate contribution of nitrogen from

the discharges to the aquifer, having the overall effect of reducing nitrate concentrations in the aquifer, which is used for drinking water. This Order includes waste discharge requirements intended to protect water quality to ensure that water is safe for domestic uses.

38. California Environmental Quality Act (CEQA)

- a. The ROWD identifies that an Initial Study, Environmental Checklist and draft Mitigated Negative Declaration were prepared for the project on behalf of Alameda County in September 2011. The draft Mitigated Negative Declaration includes as a mitigation measure compliance with the requirements in this Order and determined that, with incorporation of those measures, the project will not have a significant effect on the environment. Alameda County, as lead agency, circulated a Notice of Intent to adopt a Mitigated Negative Declaration for public comment on September 23, 2011. Minor modifications to the proposed Concannon Vineyards administration/warehouse building (aka "North Building") project, including the wastewater treatment systems permitted by this Order, were evaluated in a memo dated 29 December 2011. The memo concluded that the proposed changes would not result in new significant impacts. Subsequently, Alameda County approved construction of the proposed North Building and related infrastructure improvements including the three wastewater treatment and discharge systems for which waste discharge requirements are prescribed in this Order.
- b. The Water Board, as a responsible agency under CEQA, finds that all environmental effects have been identified for project activities that it is required to approve, and that the project will not have significant adverse impacts on the environment, provided that the Discharger operates the facilities as described in this Order and the mitigation measures are carried out as conditioned in this Order. In adopting the terms and mitigation required in this Order, the Water Board has avoided or mitigated the effects on water quality, and therefore approves the operation of the wastewater treatment and discharge systems.

39. Public Notice

The Water Board has notified the Discharger and interested persons of its intent to prescribe waste discharge requirements for the subject wastewater system and discharges and has provided them with an opportunity for a public hearing and to submit written views and recommendations.

40. Public Hearing

The Water Board, in a properly noticed public hearing, heard and considered all comments pertaining to these waste discharge requirements.

41. Fees

Facilities regulated under WDRs are subject to annual fees in accordance with California Water Code section 13260(d)(1)(A) and the associated Annual Fee Schedule given as California Code of Regulations, Title 23, section 2200 *et seq.* For purposes of determining the applicable fee, Concannon Winery is categorized as a discharge type 'Discharge to Land', and has been assigned a Threat to Water Quality rating of 2 and a Complexity rating of B. The Fee Schedule is a regulatory protocol subject to changes by the legislature and or the State Water Board. The applicable amount of the annual fee may change from year to year.

This Order requires the Discharger to pay annual fees in accordance with the annual fee schedule and protocol. Annual fees are invoiced and collected by the State Water Board. The Discharger paid a first year annual fee with the ROWD as required, a total of \$8,769 received September 25, 2012. Under the current (2013-2014) fee schedule, the annual fee for Concannon Winery is derived from a 'base' fee \$12,671, plus an Ambient Water Monitoring surcharge of 9.5 percent, or \$1,204, yielding a net annual fee of \$13,875. As previously noted, the applicable amount of the annual fee may change from year to year.

IT IS HEREBY ORDERED, that the Discharger, pursuant to the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. The treatment, storage, or discharge of wastes shall not create a nuisance or pollution as defined in the California Water Code.
2. Discharges of waste into or from the wastewater systems other than as described in and authorized by this Order are prohibited.
3. There shall be no bypass or overflow of waste to waters of the State from the Discharger's wastewater collection, treatment, storage or disposal facilities.
4. The discharge of waste shall not degrade the quality of any groundwater used for municipal or domestic purposes or cause an increase in any quality parameter that would make groundwater unsuitable for domestic use, industrial process and service water supply or agricultural supply.
5. Discharges of wastewater to the wastewater systems in excess of the operating hydraulic capacity or organic loading treatment capacity of each respective system are prohibited.
6. For discharges of stormwater, discharges of any material other than uncontaminated stormwater to waters of the state are prohibited.

B. DISCHARGE SPECIFICATIONS

1. Flows - North Domestic Wastewater System

a. Peak Daily Flow

Discharges into the North Domestic Wastewater System shall not exceed the design peak daily flow rate of 2,955 gallons per day.

b. Annual Average Daily Flow

Discharges into the North Domestic Wastewater System shall not exceed the design annual average daily flow rate of 810 gallons per day.

c. Discharge System

Discharges to land in the North Domestic Wastewater System shall not exceed either the Peak Daily Flow or Annual Average Daily Flow rates described above.

2. Flows - South Domestic Wastewater System

a. Peak Daily Flow

Discharges into the South Domestic Wastewater System shall not exceed the design peak daily flow rate of 2,010 gallon per day.

b. Annual Average Daily Flow

Discharges into the South Domestic Wastewater System shall not exceed the design annual average daily flow rate or 1,902 gallons per day.

c. Discharge System

Discharges to land in the South Domestic Wastewater System shall not exceed either the Peak Daily Flow or Annual Average Daily Flow rates described above.

3. Flows - Wine Bottling Wastewater

a. Peak Daily Flow

Discharges of bottling wastewater into the Winery Wastewater System shall not exceed the design peak daily flow rate of 20,000 gallons per day.

b. Annual Average Daily Flow

Discharges of bottling wastewater into the Winery Wastewater System shall not exceed the design annual average daily flow rate of 9,832 gallons per day.

c. Discharge System Flows

Discharges of bottling wastewater into the Winery Wastewater System shall not exceed either the Peak Daily Flow or Annual Average Daily Flow rates described above.

4. Flows - Winery Process Wastewater

a. Peak Daily Flow

Discharges of winery process wastewater into the Winery Wastewater System shall not exceed the design peak daily flow rate of 1,600 gallons per day.

b. Annual Average Daily Flow

Discharges of winery process wastewater into the Winery Wastewater System shall not exceed the design annual average daily flow of 762 gallons per day.

c. Discharge System Flows

Discharges of winery process wastewater into the Winery Wastewater System shall not exceed either the Peak Daily Flow or Annual Average Daily Flow rates described above.

5. Discharge Effluent Limits - Sanitary Wastewater

Treated sanitary wastewater discharged to land, in either the North or South Domestic Wastewater System, shall comply with the following quality limits:

- a. Biochemical Oxidation Demand 30 mg/L, maximum;
- b. Total Suspended Solids 30 mg/L, maximum;
- c. Total Nitrogen 20 mg/L as N, maximum; and
- d. Nitrogen Removal Rate 50 percent, minimum. In other words, the effluent concentration for Total Nitrogen shall be no more than 50 % of the influent concentration.

6. Discharge Effluent Limits - Winery Wastewater System

Treated winery wastewater discharged to land in the Winery Wastewater System shall comply with the following quality limits:

- a. Biochemical Oxidation Demand 30 mg/L, maximum;
- b. Total Suspended Solids 30 mg/L, maximum;
- c. Total Nitrogen
 - (1) Bottling Wastewater 5 mg/L as N, maximum;
 - (2) Process Wastewater 40 mg/L as N, maximum; and
- d. Total Nitrogen Load 188 pounds per year, maximum.

7. Discharge Discontinuation

Discharges of treated wastewater to the discharge areas shall be ceased during any period when the effluent limits specified above are not met. The discharges shall not resume until all conditions which caused the specified limits to be violated have been corrected.

8. Wastewater System Operation and Maintenance

- a. The wastewater systems shall be constructed and operated as described in this Order and in the Report of Waste Discharge, and in accordance with all requirements of this Order.
- b. The Discharger shall operate and maintain the wastewater systems as efficiently as possible, and shall maintain in good working order all wastewater system components, equipment and control systems installed to achieve compliance with this Order.
- c. The Discharger shall operate and maintain the wastewater systems in accordance with the requirements of this Order, the ROWD, and procedures to be described and documented in the Operations and Maintenance Manual required by this Order.

9. Pump Stations

- a. All pump stations shall be designed, constructed, operated and maintained to prevent the occurrence of spills or overflows resulting from mechanical breakdown or power failure.
- b. All pump stations shall be equipped with reserve hydraulic capacity sufficient to provide storage of wastewater during a pump failure condition for at least 24 hours, and water level monitoring and alarm system(s) to provide notification of high water level conditions.
- c. The alarm system shall include audible and visual alarms sufficient to notify operating personnel of an alarm condition. If operating personnel are not present at Concannon Winery, the alarm system shall include an automated telephone dialer system capable of notifying on-call operating personnel of the alarm condition.
- d. The power supply for alarm systems shall be independent of the normal power supply for the wastewater system.

10. Diversion Valves

a. Winery Process Area Stormwater Diversion Valve

This valve shall be operated as appropriate to direct the collected waters as follows:

- 1) Into the winery process wastewater system during all times when the winery process area is in use for grape handling or processing or other wine making activities.
- 2) Into the onsite subsurface stormwater infiltration chamber system during the wet weather season, when the winery process area tributary to the valve is not in active use for grape processing or wine making activities, and the collected water consists only of clean captured rainwater.

b. Winery Wastewater Discharge System Diversion Valve

This valve shall be operated as appropriate to direct the collected waters as follows:

- 1) Into one half of the winery wastewater subsurface discharge system's infiltration chamber gallery, for a time period of one half year (six calendar months plus or minus two weeks).
- 2) Into the other half of the winery wastewater subsurface discharge system's infiltration chamber gallery, for the next sequential time period of one half year (six calendar months plus or minus two weeks).

11. Wastewater Solids

All solid materials removed from the liquid waste stream of the wastewater systems, shall be disposed of at a legal point of disposal, and in accordance with the provisions of Title 27 of the California Code of Regulations. This includes solids accumulated in septic tanks, pump tanks, filters or other components of the wastewater systems. For the purpose of this requirement, a legal point of disposal is defined as a facility for which waste discharge requirements have been prescribed or waived by a regional water board and which facility is in full compliance therewith. This Order does not authorize disposal of wastewater

solids or any other solid wastes anywhere on the Concannon Winery property. If the Discharger desires to dispose of solid wastes on the property, the Discharger shall file with the Water Board a Report of Waste Discharge describing the proposed discharges, and methods of control, and the facility will need to be brought into compliance with applicable laws and regulations governing solid wastes, prior to any discharges of solid wastes.

C. PROVISIONS

1. Order Compliance

The Discharger shall comply with all sections of this Order immediately upon adoption.

2. Self-Monitoring Program

The Discharger shall comply with the Self-Monitoring Program for this Order as adopted by the Water Board and as may be amended by the Executive Officer.

3. Design Plans of Constructed Wastewater Systems

The Discharger shall submit to the Water Board a technical report, acceptable to the Executive Officer, no later than 30 calendar days from the date of adoption of this Order, of final design plans for the constructed wastewater systems, including "As-Built" drawings, and narrative descriptions as appropriate, of the completed-to-date wastewater treatment and discharge systems. All plan drawings shall be of scale at least one inch equals 40 feet, properly labeled, and legible.

4. Design Plans of Future Wastewater System Changes

In the event of any changes to wastewater system components in the future, updated as-built plans of the portion of the system(s) affected by such changes shall be submitted to the Water Board within 30 days of completion of those changes.

5. Operation and Maintenance Providers

- a.** The wastewater systems shall be operated and maintained by persons that are experienced in, and knowledgeable of, proper wastewater treatment and disposal practices. Such persons shall be wastewater treatment plant operators possessing a current and valid certification from the State of California, or other persons with similar knowledge and experience and valid professional registration or license.
- b.** The Discharger shall establish and maintain a valid contract, or contracts, with a qualified service provider, or qualified service providers, for operation and maintenance of the wastewater systems.
- c.** The Discharger shall submit to the Water Board, within 30 days of adoption of this Order, copies of completed service contracts with qualified service providers for operation and maintenance of the wastewater systems.
- d.** In the event of any changes in contracted service providers, the Discharger shall notify the Water Board in writing of such changes prior to the effective date of such changes, and submit copies of the new or revised contracts within ten working days from the effective date of those changes.

6. Operation and Maintenance Program

The Discharger shall develop and implement an Operations and Maintenance Program for the wastewater system, in accordance with the following:

a. Operation and Maintenance Program

The Operation and Maintenance Program shall include all procedures necessary to properly operate the wastewater system in accordance with design parameters, to achieve compliance with waste discharge requirements, and to maintain the system in good working condition.

b. Operation and Maintenance Manual

The Operation and Maintenance Program shall include an Operation and Maintenance Manual documenting all aspects of the program. The Operation and Maintenance Manual shall include, but not be limited to, the following:

- 1) Description of the overall wastewater system;
- 2) Scaled plan drawings of the wastewater system, including pipes, valves and control equipment;
- 3) Description of the wastewater flow through the system, from sources to final disposal;
- 4) Descriptions and specifications of all system components and equipment;
- 5) Routine procedures for operation of the wastewater system including all mechanical, electrical or or hydraulic control systems, grease traps, septic tanks, pumps, diversion valves, and the subsurface discharge systems;
- 6) Routine procedures for management and disposal of wastewater solids removed from the wastewater streams;
- 7) Procedures for maintenance of all system components;
- 8) Procedures for operation of the wastewater system during emergency conditions such as power outage, major equipment failure, extreme wet weather conditions or other emergencies; and
- 9) Copies of all applicable regulatory permits for the wastewater system, or specific references of those permits and identification of a location at Concannon Winery where those permit are available for review and reference by operating personnel, other service providers, or regulatory agency staff.

c. Operation and Maintenance Manual Submittal

The Discharger shall submit to the Water Board a technical report, acceptable to the Executive Officer, including a complete copy of the Operation and Maintenance Manual, identification of person(s) responsible for implementation of the Operation and Maintenance Program, and contact information for those persons.

Due Date: No later than 30 days after the date of adoption of this Order.

d. Operation and Maintenance Manual Review and Updates

The Discharger shall periodically review and update as necessary the Operation and Maintenance Manual in order to ensure that the manual remains current and applicable to the wastewater systems and their proper operation.

e. Operation and Maintenance Manual Review and Update Reports

Annually, the Discharger shall submit a report to the Water Board containing any revisions or updates of the Operation and Maintenance Manual that have been made, or a letter stating that the Operation and Maintenance Manual remains adequate and no revisions are necessary. This report shall be submitted as part of the Annual Monitoring Report.

7. Groundwater Monitoring Program

a. Groundwater Monitoring Required

In order to ensure compliance with Discharge Prohibition A.4 of this Order, the Discharger shall implement a program of groundwater monitoring in the vicinity of the discharges.

b. Groundwater Monitoring Plan Technical Report

The Discharger shall prepare a technical report acceptable to the Executive Officer documenting the proposed groundwater monitoring program, including locations and construction specifications of groundwater monitoring wells, protocol and schedule for sampling and analyses and persons responsible for sampling and reporting. The report shall include proposed monitoring sufficient to provide analytical data to characterize parameters and values used in the water balance and nitrogen loading analysis and groundwater model information presented in the ROWD that were assumed or estimated based on generic sources.

Due Date: This report shall be submitted to the Water Board no later than 60 days after the date of adoption of this Order.

c. Monitoring Requirements

The Self-Monitoring Program for this Order includes minimum monitoring requirements for groundwater. The Discharger shall implement these monitoring requirements. Requirements include monitoring parameters and frequencies, and reporting requirements. The requirements may be modified by the Executive Officer, as may be necessary or appropriate with respect to the Groundwater Monitoring Plan report or other new information about groundwater monitoring related to the discharges.

Due Date: The monitoring requirements shall be in effect as of the date of adoption of this Order.

8. Stormwater Management Plan

a. Stormwater Management Plan

The Discharger shall develop and maintain a Stormwater Management Plan that includes Operation Maintenance and Monitoring procedures for all stormwater management systems at Concannon Winery.

Due Date: This Plan shall be developed and placed into active use no later than 30 days after the date of adoption of this Order.

b. Plan Implementation

The Discharger shall properly operate and maintain the stormwater systems in accordance with the above Plan.

9. Groundwater Impairment Mitigation Measures

The Discharger shall comply with the following:

a. Documentation of Application for Sewer Service

The Discharger shall complete and submit a report to the Water Board, acceptable to the Executive Officer, documenting the Dischargers' completed application to the City of Livermore for sewer service for Concannon Winery, via either an Out-Of-Area Agreement or Annexation request, or other applicable legal process.

Due Date: This report is to be submitted to the Water Board no later than 6 months from the date of adoption of this Order.

b. Quarterly Status Reports

The Discharger shall submit status reports to the Water Board, documenting progress toward obtaining a sewer connection. A copy of each report shall be submitted to the Alameda County Zone 7 Water Agency. A report shall be prepared and submitted for each calendar quarter, in accordance with the due date schedule below.

Due Date: Quarterly reports shall be submitted by the last day of the month following the calendar quarter reporting period. In other words, due dates of April 30, July 31, October 31 and January 31, respectively. The first report shall be submitted by October 31, 2014, and the first report period will be more than a full calendar quarter.

c. Alternative Compliance Actions

In the event the Discharger is unable to cease discharges of nitrogen from Concannon Winery wastewaters to groundwater through completion of a sanitary sewer connection to the City of Livermore municipal sanitary sewer system within one year from the date of adoption of the Order, then the Discharger shall implement alternative compliance actions in accordance with the following.

(1) Objectives

The objective is to reduce and minimize contributions of nitrogen (nitrogen load) from wastewater to groundwater in the vicinity of the Concannon Winery facility. The alternative compliance actions must reduce the nitrogen load from existing wastewater discharge sources in the vicinity of Concannon Winery. The amount of nitrogen reduction shall be equivalent to the maximum permitted or highest documented total nitrogen load, whichever is higher, from all of Concannon Winery's wastewater sources combined. The applicable vicinity is unincorporated Alameda County in Livermore Valley within one half mile distance from the the Concannon Winery wastewater system discharges, in areas where groundwater is impaired due to nitrate nitrogen levels greater than the water quality objective of 10 mg/L as Nitrogen (45 mg/L as Nitrate). The intent is that the Discharger shall implement these additional nitrogen load reductions and also continue to operate as efficiently as practicable the onsite wastewater treatment systems installed to date and described in this Order, including nitrogen reduction technology for domestic wastewater.

(2) Action Plan

The Discharger shall submit a report to the Water Board acceptable to the Executive Officer describing a proposed plan of alternative compliance actions and time schedules for implementation and completion of the actions. The report shall include relevant current water quality data of sources to be modified and groundwater quality in the area of the sources to be modified and discharge analyses documenting anticipated nitrogen discharge reductions.

Due Date: This Action Plan report shall be submitted to the Water Board no later than one year and three months after the date of adoption of this Order.

(3) Implementation

The Discharger shall initiate implementation of the alternative compliance actions no later than thirty days after receiving the Executive Officer's response to the Action Plan.

(4) Completion

If initiated actions are at any time unsuccessful, then the Discharger shall implement additional actions to achieve equivalent nitrogen load reductions.

d. Termination of Waste Discharge Authorization after Two Years

If the Discharger has not ceased the discharges of nitrogen from Concannon Winery wastewater sources to groundwater by a completed connection to the municipal sanitary sewer or by initiated implementation of alternative compliance actions as described in this Order within two years from the date of adoption of this Order, then the authorization for discharges of nitrogen from Concannon Winery wastewater sources to groundwater given by this Order shall terminate and any further such discharges shall be considered violations of this Order and subject to enforcement as unauthorized discharges.

e. Investigations of Water Management Options

- (1) The Discharger shall investigate whether irrigation and fertilization practices on the vineyards may be modified to reduce nitrate loading to the groundwater.
- (2) The Discharger shall investigate the feasibility of reusing winery bottling wastewater for vineyard irrigation water or for other uses, to reduce nitrogen loading to groundwater and to afford beneficial use of this valuable resource other than direct discharge to subsurface soils.
- (3) The Discharger shall prepare and submit a report to the Water Board acceptable to the Executive Officer documenting the investigation and results of the investigations described in parts (1) and (2) above.

Due Date: This report shall be submitted to the Water Board no later than six (6) months after adoption of this Order.

10. Non-Compliance Reporting

a. Notification Required

The Discharger shall notify the Water Board of any time or event when any non-compliance with any of the conditions of this Order occurs. Such non-compliance may include:

- (1) Breakdown of wastewater transport or treatment equipment;
- (2) Accidents caused by human error or negligence; or
- (3) Other causes such as acts of nature.

b. Initial Notification

The Discharger shall provide initial notification to the Water Board by telephone as soon as the Discharger or the Discharger's agents have knowledge of the incident.

c. Written Notification

The Discharger shall provide written notification to the Water Board within five work days of the initial notification.

d. Written Notification Content

The written notification shall include pertinent information explaining reasons for the non-compliance and shall indicate what steps were taken to correct the problem and the dates thereof, and what steps are being taken to prevent the problem from recurring.

11. Entry, Access and Inspection

The Discharger shall permit the Water Board or its authorized representatives, in accordance with section 13267(c) of the California Water Code:

a. Entry

Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order;

b. Access

Access to and copy of, at reasonable times, any records required by conditions of this Order;

c. Inspection

Inspection, at reasonable times, of any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and

d. Monitoring

To photograph, sample or monitor, at reasonable times, for the purpose of assuring compliance with this Order.

12. Annual Fees

The Discharger must pay annual fees in accordance with the fee schedule given in California Code of Regulations Title 23, section 2200 and annual fee invoices issued by the State Water Board.

13. Change in Control or Ownership

In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the Water Board of such changes in writing, and shall also notify the succeeding owner or operator of the existence of this Order and current compliance status in writing. The succeeding owner or operator, in order to obtain authorization for discharges regulated by this Order, must apply in writing to the Executive Officer, requesting transfer of the Order. This request must include complete identification of the new owner or operator, the reasons for the change, and effective date of the change. Discharges conducted without submittal of this request will be considered discharges without waste discharge requirements, violations of the California Water Code.

14. Report of Waste Discharge

The Discharger shall file with the Water Board a Report of Waste Discharge at least 180 days before making any material change in the character, location, or volume of the discharges or discharge facilities as described in this Order, except for emergency conditions. In the event of changes implemented in response to emergency conditions, the Water Board shall be notified immediately by telephone, and in writing or by facsimile transmission within five calendar days of such changes.

15. Order Review and Update

The Water Board will review this Order periodically and may revise the requirements as necessary to comply with changing State and Federal laws, regulations, policies, or guidelines; changes in this Water Board's Basin Plan; or changes in the discharge characteristics.

16. Order Termination

After notice and public meeting, this Order may be terminated or modified by the Water Board for any reason.

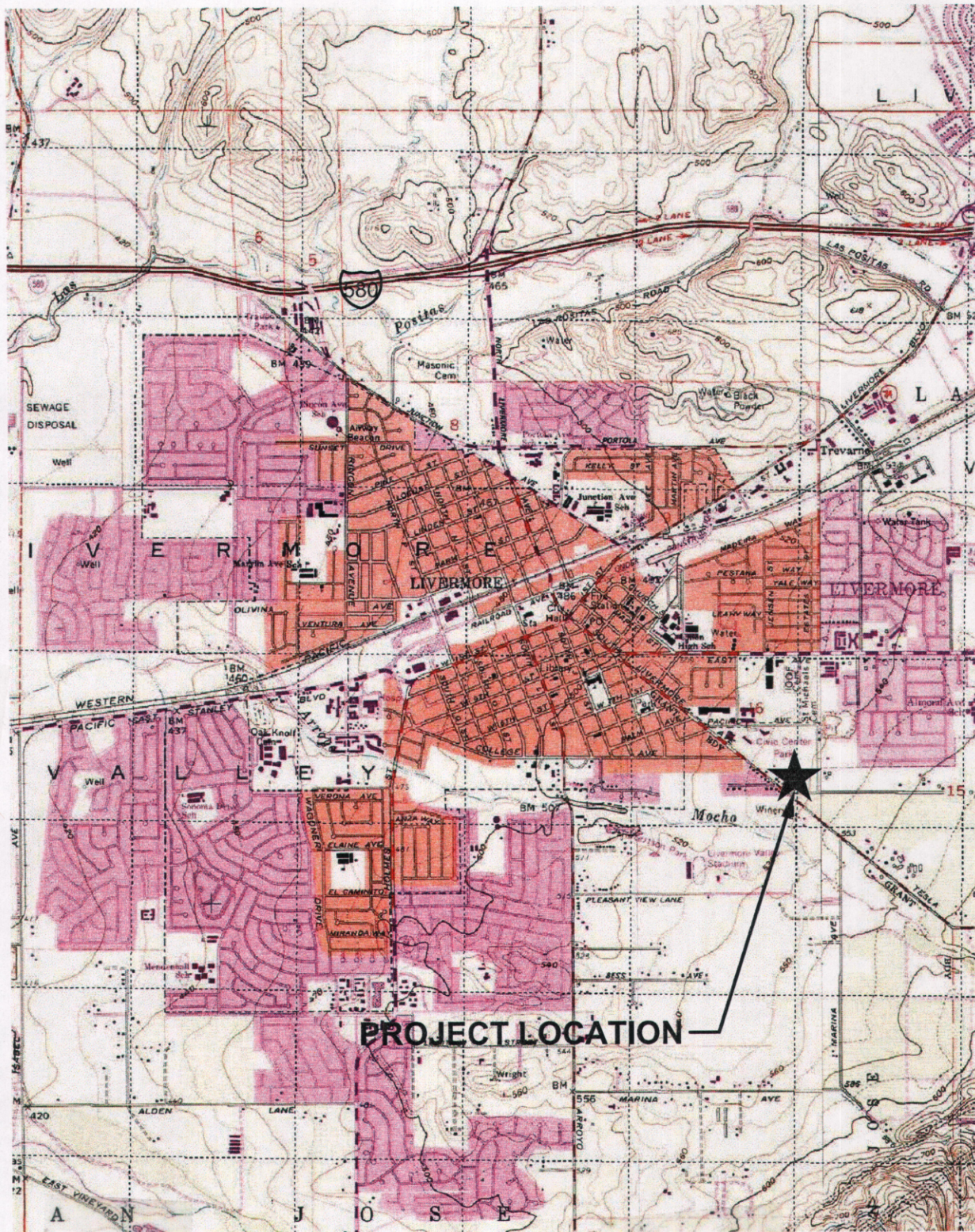
I, Bruce H. Wolfe, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region on << date of adoption >> .

BRUCE H. WOLFE
Executive Officer

Attachments:

- A. Figure 1 - Site Location Map
- B. Figure 2 – Concannon Winery Site Plan of Main Building Complex
- C. Figure 2B - Entire Concannon Winery Property and Parcel Numbers
- D. Figure 3 - Concannon Winery Building Envelope Site Plan - Aerial View
- E. Figure 4 - Existing Treatment System Plan Layout
- F. Figure 5 - Winery Wastewater System Schematic
- G. Figure 6 - Domestic Wastewater Systems Schematic
- H. Figure 7 - Groundwater Model Diagram
- I. Figure 8 - Stormwater Infiltration System Plan View
- J. Self-Monitoring Program

[CIWQS Place Number 771359]



0 1000 FEET 0 500 1000 METERS



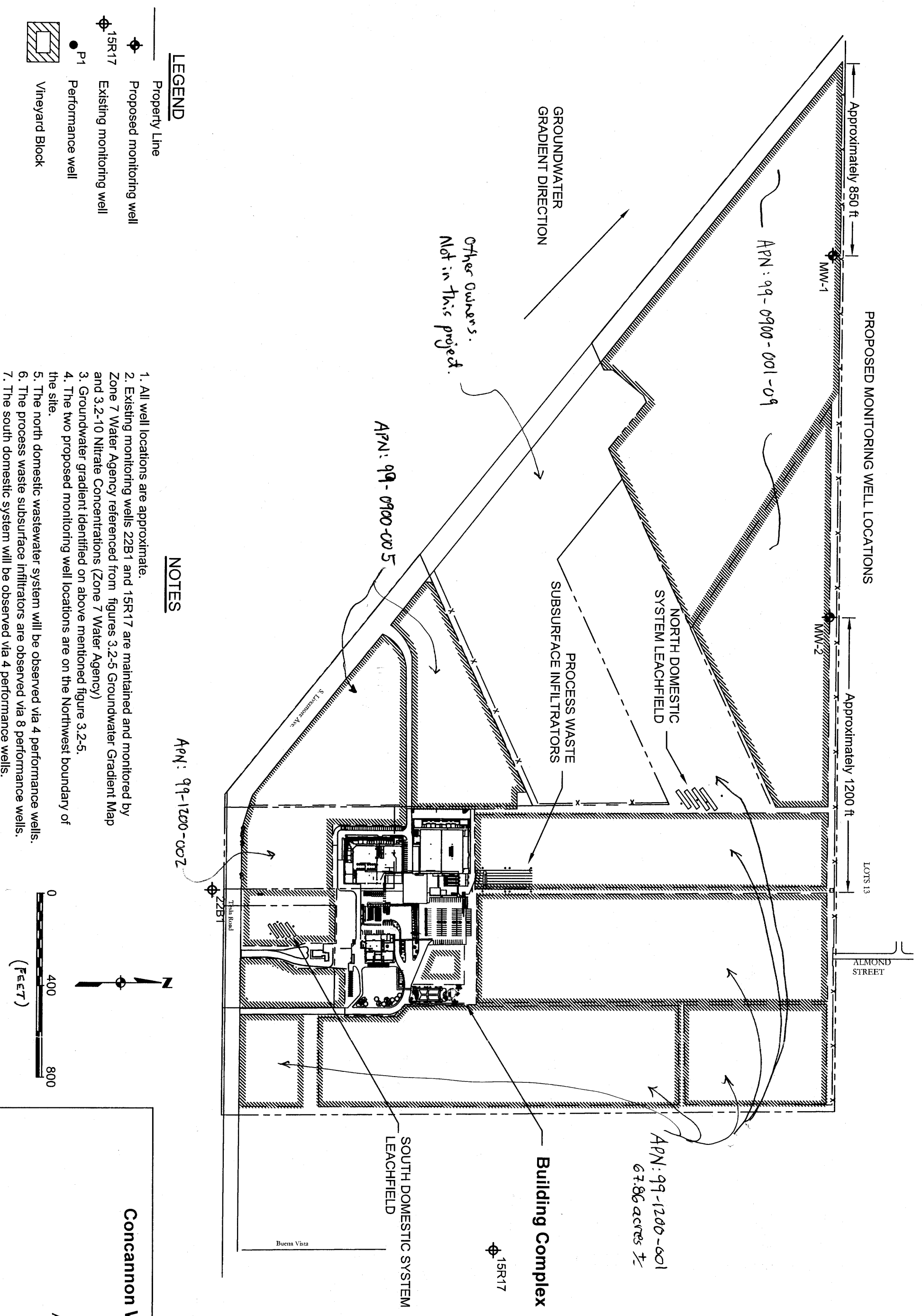
Concannon Winery

Site Location Map

August 2012

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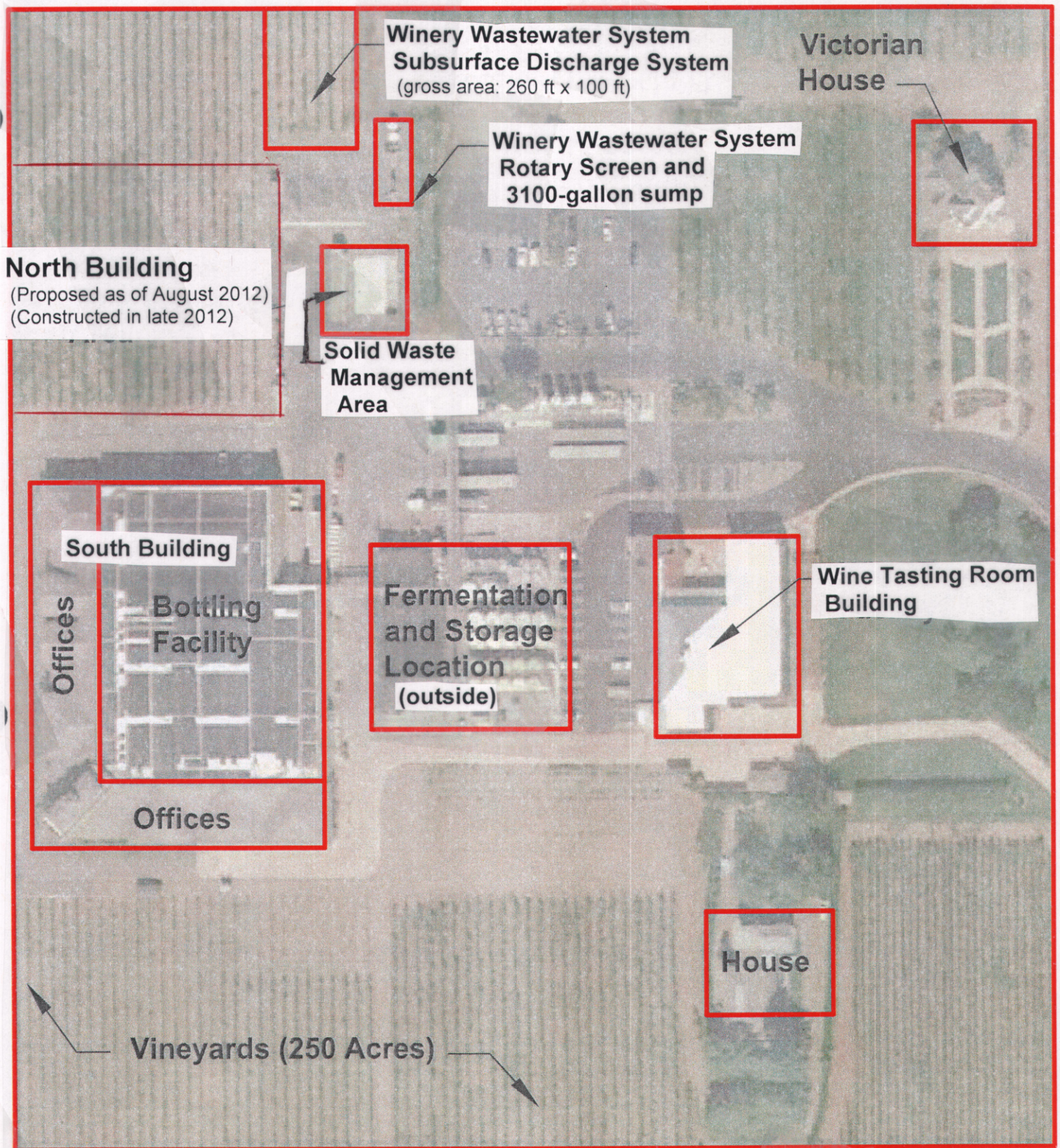
Figure 1





(Source: Concannon Winery staff, email to Water Board, September 2013)

Concannon Winery
Aerial View of Entire Property
Figure 2 B

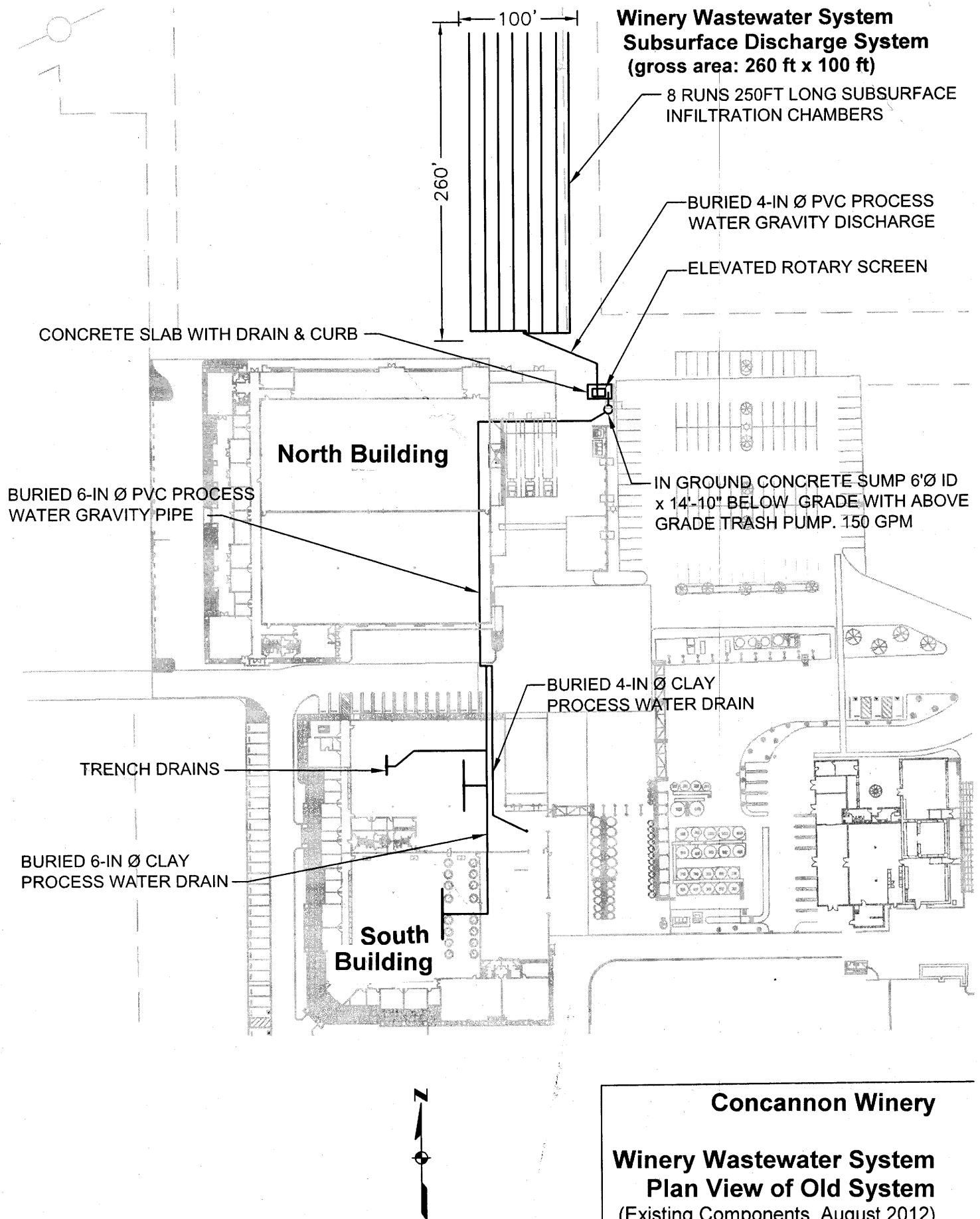


Concannon Winery
Aerial View of Concannon Winery Building Complex

Figure 3

(Source: August 2012 ROWD Technical Report, Figure 3)

August 2012

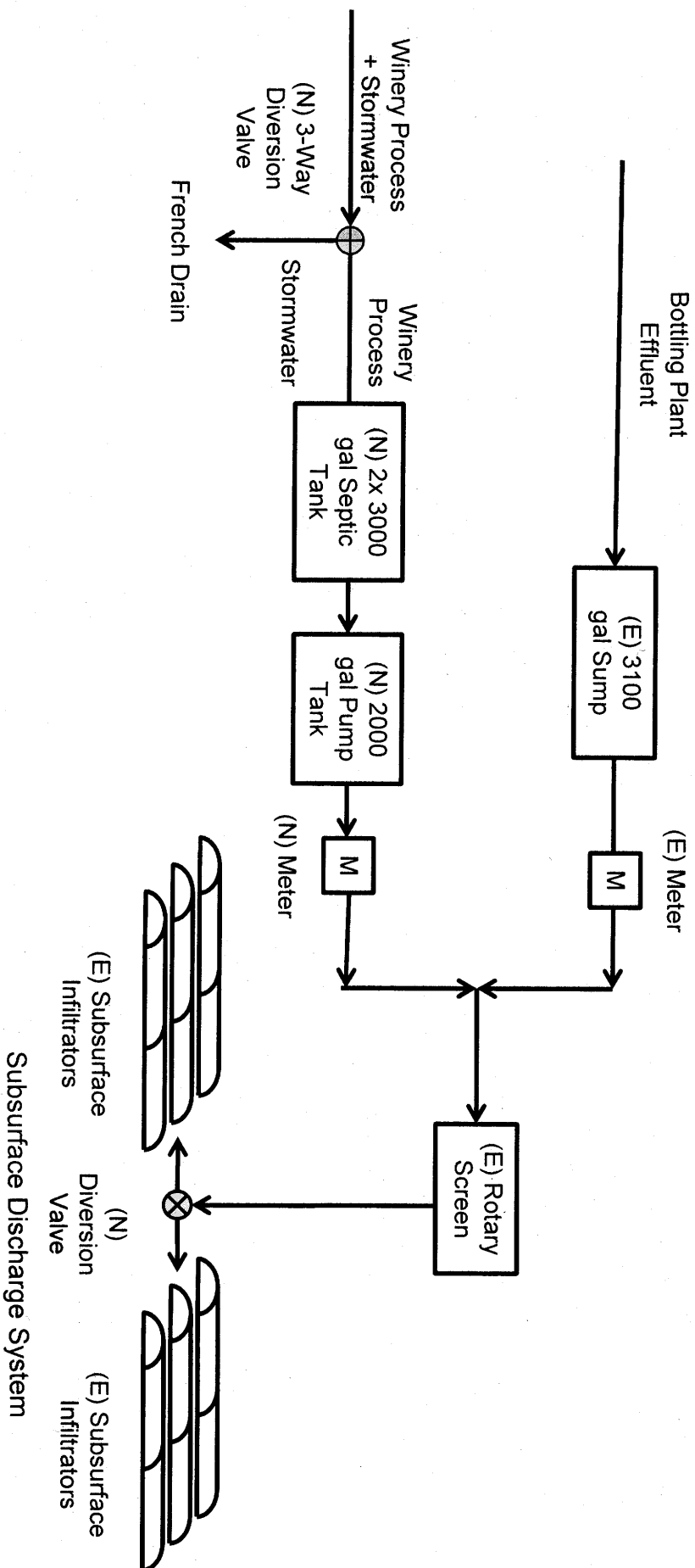


Concannon Winery

**Winery Wastewater System
Plan View of Old System**
(Existing Components, August 2012)

Figure 4

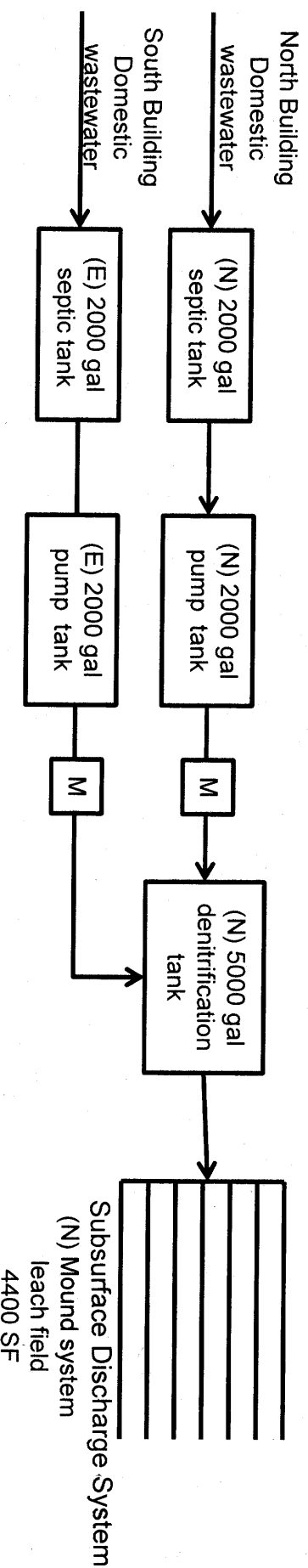
(Source: August 2012 ROWD Technical Report, Figure 4)



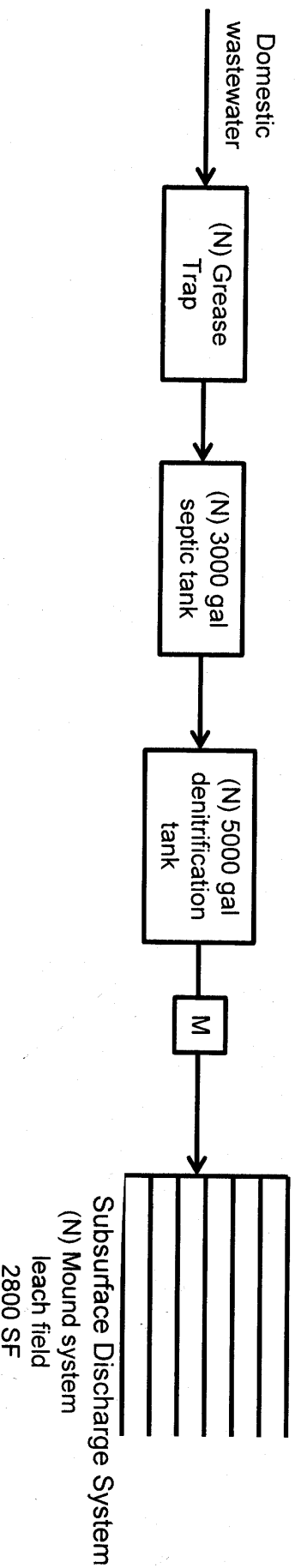
(Source: August 2012 ROWD Technical Report, Figure 5)

Figure 5

North Domestic Wastewater System



South Domestic Wastewater System



Legend

(E)	Existing
(N)	New
gal	Gallons
SF	Square Feet
M	Meter

Concannon Winery

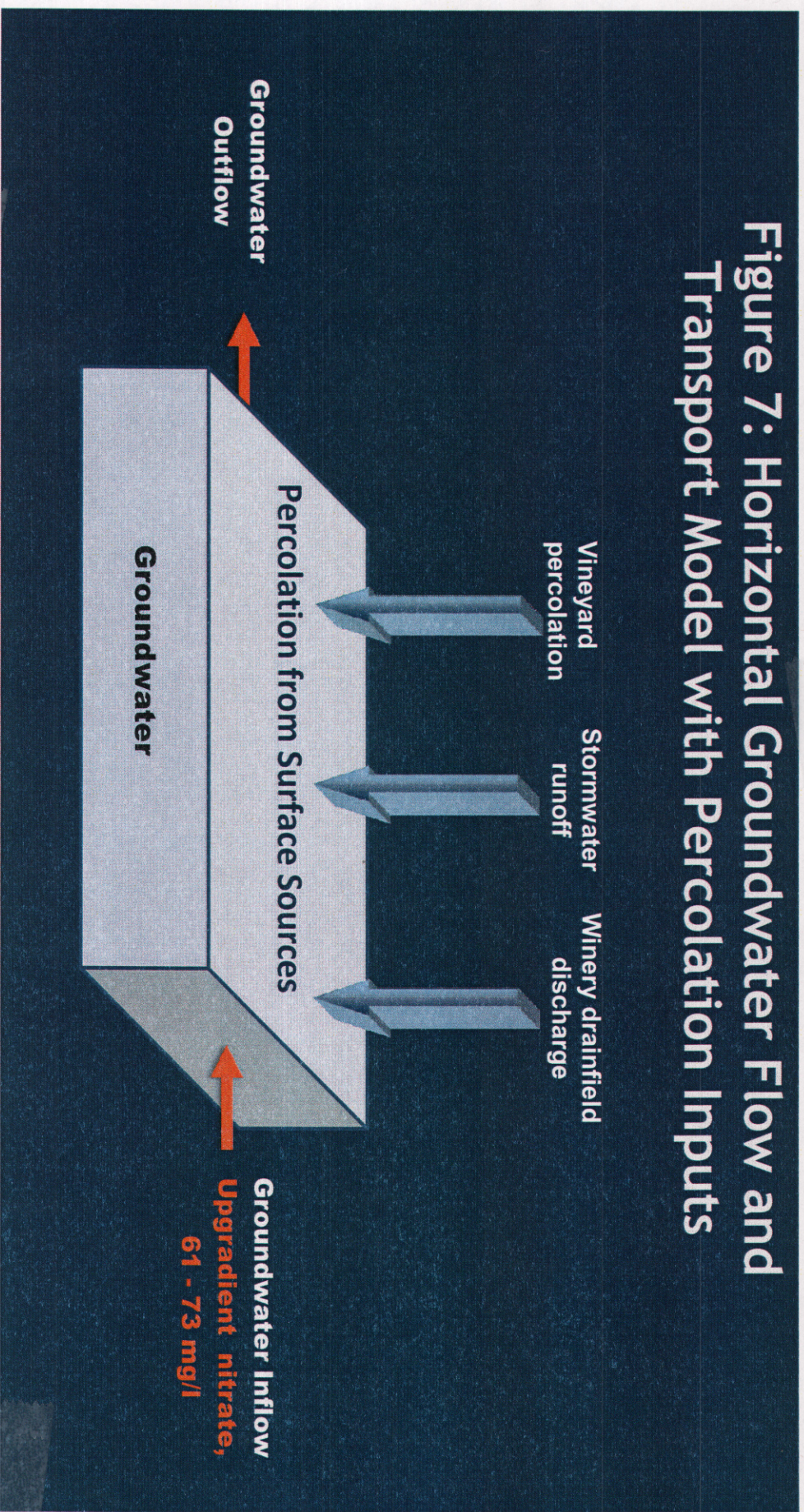
Domestic Wastewater Systems Schematic Diagram of New Systems

(Existing and Planned New
Components as of August 2012)

(Source: August 2012 ROWD Technical Report, Figure 6)

Figure 6

Figure 7: Horizontal Groundwater Flow and Transport Model with Percolation Inputs



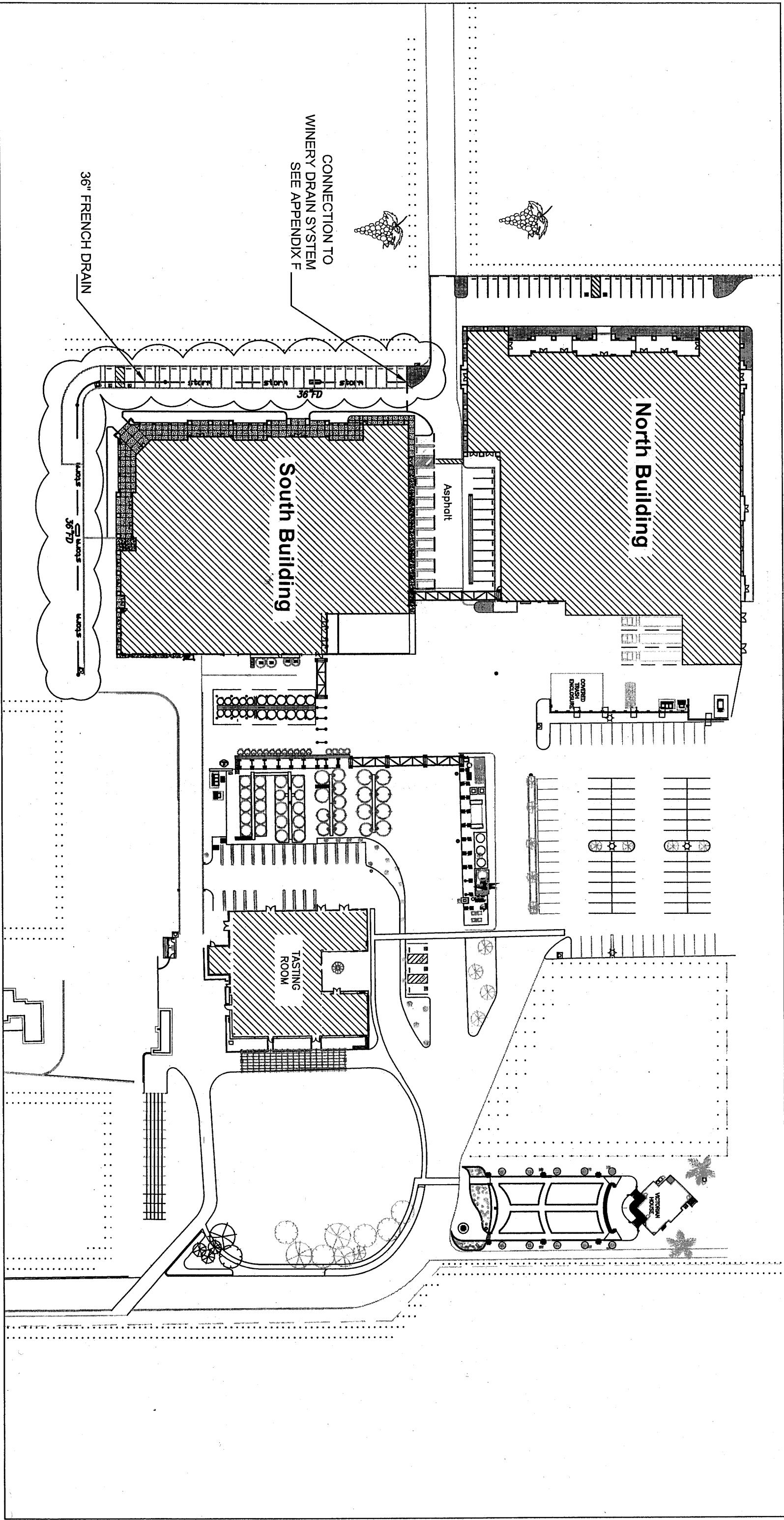
Concannon Winery

Groundwater Model Diagram

August 2012

Figure 7

(Source: August 2012 ROWD Technical Report, Figure 7)



(Source: August 2012 ROWD Technical Report, Figure 8)

Concannon Winery
Stormwater Infiltration System
("French Drain")
Plan View

Figure 8
August 2012

Monitoring Program for Wastewater Treatment and Discharge Systems at 4596 Tesla Road, Livermore, Alameda County

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

**TENTATIVE
SELF-MONITORING PROGRAM**

for

**THE WINE GROUP, LLC;
THE WINE GROUP, LLC-CONCANNON WINERY;
and
WASTEWATER TREATMENT AND DISCHARGE SYSTEMS
at
4596 TESLA ROAD, LIVERMORE, ALAMEDA COUNTY**

for

ORDER NO. R2-2014-XXXX

CONTENTS:

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I. PURPOSE

A. GENERAL

1. This monitoring program is for waste discharge requirements adopted by the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board).
2. The principal purposes of a monitoring program by a waste discharger, also referred to as a self-monitoring program (SMP), are:
 - a. To document compliance with waste discharge requirements and prohibitions established by the Water Board; and
 - b. To facilitate self-policing by the waste discharger in the prevention and abatement of pollution or potential threats to water quality arising from waste discharges.
3. Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13268, 13383, and 13387(b) of the California Water Code, and Water Board Resolution No. 73-16.

II. SAMPLING and ANALYTICAL METHODS

1. Sample collection, storage, and analyses shall be performed according to Code of Federal Regulations Title 40, Section 136 (40 CFR 136), or other methods approved and specified by the Executive Officer of the Water Board (Executive Officer).
2. Water and waste analyses shall be performed by a laboratory approved for these analyses by the California Department of Public Health (CDPH), or by a laboratory waived by the Executive Officer from obtaining a CDPH certification for these analyses, or as otherwise specified in this SMP.
3. The director of the laboratory whose name appears on the certification, or his/her laboratory supervisor who is directly responsible for the analytical work performed shall supervise all analytical work including appropriate quality assurance/quality control procedures in his/her laboratory and shall sign all reports of such work submitted to the Water Board.
4. Measurements by use of portable analytical equipment (field instruments) is acceptable for selected parameters, given the following conditions:
 - a. The analytical equipment is appropriate for the given analysis and water or waste;
 - b. The analytical equipment is properly maintained and calibrated;
 - c. The equipment user is knowledgeable of proper sampling and equipment use practices; and
 - d. Written notification of the intended use has been provided in advance to the Board, and no the Water Board has not stated any objections.
5. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

III. DEFINITION of TERMS

The following are definitions and explanations of terms used in this monitoring program. Additional descriptions are given in the findings of this Order.

A. FACILITY AND WASTEWATER SYSTEM.

1. **Facility Site.** The facility site is the land on which the facility identified as The Wine Group, LLC- Concannon Winery (Concannon Winery) is located. This land consists of Alameda County Assessors Parcel Numbers 99-1200-1, 99-1200-2, and 99-1200-3.
2. **Wastewater System.** The wastewater system is all equipment at the facility site used for collection, conveyance, treatment, storage, dispersal and management of wastewater and wastewater solids from the Concannon Winery facility, and includes both the sanitary wastewater and process wastewater systems.
3. **Sanitary Wastewater - North Domestic Wastewater System.** The North Domestic Wastewater System is the wastewater treatment and discharge system serving the north office building, wine tasting building and public bathroom building. The system is located on Parcel 99-1200-1, 1000 feet north of the building complex. The system includes collection in watertight pipes, primary treatment in a septic tank, secondary treatment and nutrient removal in a proprietary treatment unit, and subsurface dispersal by uniform distribution through pressurized pipe networks in a set of four elevated mound structures.
4. **Sanitary Wastewater - South Domestic Wastewater System.** The South Domestic Wastewater System is the wastewater treatment and discharge system serving the south office building, the wine tasting facility, wine bar, and three-bedroom residence. The system is located on Parcel 99-1200-2, 400 feet southeast of the south building, to the west of the entrance roadway at 4596 Tesla Road. The system includes collection in watertight pipes, primary treatment in a septic tank, secondary treatment and nutrient removal in a proprietary treatment unit, and subsurface dispersal by uniform distribution through pressurized pipe networks in a set of four elevated mound structures.
5. **Winery Process Wastewater System.** The winery process wastewater system collects and treats wastewater from wine manufacturing processes. The treated wastewater is discharged to land in the winery wastewater discharge system (see description under III.A.7. below).
6. **Winery Bottling Wastewater System.** The bottling wastewater system manages wastewater from the wine bottling operations. The treated wastewater from this system is discharged to land in the winery wastewater discharge system.
7. **Winery Wastewater Discharge System.** The winery wastewater discharge system is the portion of the facility wastewater systems used to convey and discharge combined treated winery process and bottling wastewater to land, by means of a subsurface dispersal system. The dispersal system is located on Parcel 99-1200-1, twenty feet north of the north building and extending north about 250 feet. The dispersal system includes sixteen trenches three-feet deep by three feet wide by 120 feet long, in two zones of eight trenches each, with a total of 1,920 lineal feet of trench and 5,760 square feet of trench bottom infiltrative surface within a gross dispersal system area of 260 feet by 100 feet or 26,000 square feet total.

B. TYPES OF SAMPLES.

1. **Flow Measurement.** Flow measurement is the accurate measurement of the flow volume over a given period of time using a properly calibrated and maintained flow measuring device. Flow determination from a properly calibrated and maintained automated pump-use recording device, such as a pump dose event counter, for a properly calibrated and maintained pump, is acceptable.
2. **Grab Sample.** A grab sample is defined as an individual sample collected in a short period of time not exceeding 15 minutes. Grab samples are used primarily in determining compliance with instantaneous maximum or minimum limits, and also for bacteriological limits. Grab samples represent only the condition that exists at the time the sample is collected.
3. **Composite Sample.** A composite sample is defined as a sample composed of individual grab samples, typically of uniform volumes obtained at specified time intervals evenly distributed over the sampling period. The sampling period for all composite samples is 24 hours, unless specified otherwise.
4. **Groundwater Level.** Groundwater level is the water surface of observed groundwater. For reporting, groundwater level shall be reported as both (a) depth below ground surface - the vertical distance between the groundwater level and the overlying ground surface, and (b) groundwater elevation - the elevation of the groundwater level with respect to a single common reference elevation for which there is an identified fixed stable elevation reference station at the facility site.
5. **Groundwater Sample.** A groundwater sample is a sample of groundwater obtained from a groundwater monitoring well for analytical characterization. Sampling of groundwater shall be conducted in accordance with current accepted standard practices for groundwater sampling.
6. **Observations.** Observations are primarily visual observations and inspection of conditions. Observations may include recording measurements from monitoring devices such as freeboard determined from a water level staff gauge, or precipitation determined from a rain gauge.

C. SAMPLING FREQUENCY.

1. **Continuous.** Continuous monitoring.
2. **Daily.** One time each calendar day.
3. **Weekly.** One time per calendar week, with sampling interval of at least five days.
4. **Monthly.** One time per calendar month, with sampling intervals of at least three weeks.
5. **Quarterly.** One time per calendar quarter, at intervals of about three months.
6. **Semiannual.** Two times per calendar year, with sampling intervals of about six months.
7. **Annual.** One time per calendar year.

D. MONITORING PERIODS.

For purposes of monitoring, reporting and compliance determinations relevant to requirements specified in this Order and SMP, the following time periods apply:

1. **Daily.** The Daily time period is a 24-hour period associated with a calendar day. The 24-hour period may overlap calendar days (e.g., 8 am of one day to 8 am of the next), but shall be consistent from one sampling event to the next.
2. **Weekly.** The Weekly period is a 7-day calendar week.
3. **Monthly.** The Monthly time period is each respective calendar month.
4. **Annual.** The Annual time period is the calendar year.
5. **Wine Grape Crush Season.** The calendar period of August 1 through December 31.

E. ABBREVIATIONS USED IN TABLE 1, SCHEDULE FOR MONITORING.

1. Type of Sample Abbreviations.

C = Composite Sample
F = Flow measurement
G = Grab Sample
GL= Ground water level measurement.
O = Observation.

2. Parameter Abbreviations.

BOD₅ 20°C = Biochemical Oxygen Demand, 5-day, at 20 °C
TSS = Total Suspended Solids

3. Unit Abbreviations.

F or C = Fahrenheit or Celsius
mg/L = milligrams per liter
MPN/100 ml = Most Probable Number, per 100 milliliters
N = Nitrogen

4. Sampling Frequency Abbreviations.

D = Daily
W = Weekly
M = Monthly
Q = Quarterly
D&M = Continuous monitoring; Record and Report Daily & Monthly values
A = Annual
Cont. = Continuous
Event = Each service or discharge event
2/M = Twice per Month

5. Other Abbreviations.

WW = Wastewater
PW = Wine-making Process Wastewater
BW = Wine Bottling Operation Bottling Wastewater
SW = Sanitary Wastewater
Crush = Wine Grape Crush Season
Noncrush = All time other than Wine Grape Crush Season

IV. DESCRIPTION of MONITORING STATIONS

A. GENERAL

- 1. Monitoring Station Definitions.** Stations to be used for sampling and observations in this SMP are described in this section. Each station is identified by a station code, and station description. The Station Code is a reference code for station identification in this SMP, and in recording and reporting of monitoring data. The Station Description is a description of the water, wastewater, point of the wastewater system, or land area where specified monitoring is to be conducted.
- 2. Monitoring Station Changes.** Changes to the monitoring stations defined in this SMP may be authorized by the Executive Officer, in order to accommodate changes in the wastewater system or wastewater system operations or to provide improved monitoring. Requests for changes to the

monitoring stations must be submitted to the Water Board in writing, with a detailed explanation of the purpose of the proposed station changes. Proposed changes to monitoring stations must be approved in writing from the Executive Officer, prior to implementation.

3. **Site Plan Showing All Monitoring Stations.** The Discharger shall develop a scaled and legible plan view drawing of the facility site which clearly shows the locations of all major components of the wastewater system, all monitoring stations identified in this SMP, and relevant land use features such as buildings, access roads, property boundaries and surface water drainage systems. A copy of this drawing shall be included with all reports submitted in response to this SMP.

B. WASTEWATER SYSTEM MONITORING STATIONS

Sanitary Wastewater

1. North Domestic Wastewater System - Influent.

- a. Station Code: 1
- b. Station Description: Wastewater at a point in the sanitary wastewater system where all sanitary wastewater from the Concannon Winery tributary to the North Domestic Wastewater System is present.
- c. Purpose. The purpose of this station is for sampling and analytical characterization, and flow measurement as necessary, to monitor and evaluate system performance.

2. North Domestic Wastewater System - Effluent.

- a. Station Code: 2
- b. Station Description: Wastewater at a point in the sanitary wastewater system where all treatment is complete, prior to discharge to land.
- c. Purpose. The purpose of this station is for sampling and analytical characterization, and flow measurement as necessary, to monitor and evaluate system performance.

3. North Domestic Wastewater System - Discharge System.

- a. Station Code: 3
- b. Station Description: The wastewater discharge system and the included land area used for discharges of treated wastewater to land.
- c. Purpose. The purpose of this station is for standard observations of discharge system conditions.

4. South Domestic Wastewater System - Influent.

- a. Station Code: 4
- b. Station Description: Wastewater at a point in the sanitary wastewater system where all sanitary wastewater from the Concannon Winery tributary to the South Domestic Wastewater System is present.
- c. Purpose. The purpose of this station is for sampling and analytical characterization, and flow measurement as necessary, to monitor and evaluate system performance.

5. South Domestic Wastewater System - Effluent.

- a. Station Code: 5
- b. Station Description: Wastewater at a point in the sanitary wastewater system where all treatment is complete, prior to discharge to land.
- c. Purpose. The purpose of this station is for sampling and analytical characterization, and flow measurement as necessary, to monitor and evaluate system performance.

6. South Domestic Wastewater - Discharge System.

- a. Station Code: 6
- b. Station Description: The wastewater discharge system and the included land area used for discharges of treated wastewater to land.
- c. Purpose. The purpose of this station is for standard observations of discharge system conditions.

Winery Wastewater

7. Winery Process Wastewater.

- a. Station Code: 7
- b. Station Description: Wastewater at a point in the winery process wastewater system following all treatment units and prior to subsurface discharge where all wastes tributary to the discharges are present. The ROWD identifies this station as the 2,000-gallon capacity pump tank prior to the rotary screen.
- c. Purpose. The purpose of this station is for sampling and analytical characterization, and flow measurement, of winery process wastewater discharged to land in the winery wastewater system.

8. Bottling Plant Wastewater.

- a. Station Code: 8
- b. Station Description: Wastewater at a point in the bottling plant wastewater system following all treatment units and prior to subsurface discharge where all wastes tributary to the discharges are present. The ROWD identifies this station as the 3,100-gallon capacity pump tank prior to the rotary screen.
- c. Purpose. The purpose of this station is for sampling and analytical characterization, and flow measurement, of bottling plant wastewater discharged to land in the winery wastewater system.

9. Winery Wastewater After Rotary Screen.

- a. Station Code: 9
- b. Station Description: Wastewater at a point in the winery wastewater system after, downstream from, all treatment units including the rotary screen, prior to subsurface discharge, where all wastes tributary to the discharges are present.
- c. Purpose. The purpose of this station is for sampling and analytical characterization of the quality of the final treated winery wastewater discharged to land.

10. Winery Wastewater System Discharge Area.

- a. Station Code: 10
- b. Station Description: Points within and around the perimeter of the winery wastewater system discharge area suitable for observation of discharge area conditions.
- c. Purpose. The purpose of these stations is for standard observations of the subject discharge area.

11. Winery Process Area Stormwater Diversion Valve.

- a. Station Code: 11
- b. Station Description: The diversion valve and related control equipment used to direct winery process wastewater discharges in the outdoor process area to either the winery wastewater discharge system or to the onsite stormwater subsurface discharge system.
- c. Purpose. The purpose of this station is for monitoring which specific subsurface dispersal system is in active use for the winery process wastewater collected in the outdoor processing area.

12. Winery Wastewater Discharge System Diversion Valve.

- a. Station Code: 12
- b. Station Description: The diversion valve and related control equipment used to direct winery wastewater discharges to one part or the other of the subsurface dispersal system.

- c. Purpose. The purpose of this station is for monitoring which specific infiltrator chambers of the subsurface dispersal system are in active use for discharges, and all dates and times when the flow stream is changed.

13. Wastewater Tanks (Septic Tanks, Pump Tanks, Holding Tanks).

- a. Station Description:
Each tank within the facility used for control of wastewater.
- b. Inventory.
All tanks within the facility shall be inventoried. The inventory shall include as-built, installed, tank location and characteristics. Location information shall description with respect to a current facility site plan drawing or map, and map coordinates of each tank access port. Characteristics shall include dimension and capacities, inlets and outlets, origin, manufacturer, purpose, and date of installation, and dates and purposes of any changes.
- c. Monitoring.
Each tank shall be monitored for tank use and service. Monitoring and reporting will include all service events, purpose, date and time, service provider, waste hauler, volume of material removed, and final point of discharge destination.
- d. Purpose.
The primary purpose of these stations is for monitoring conditions and use of all tanks within the wastewater system and the proper operation and maintenance of these wastewater system components.

14. Wastewater Fixtures and Drains.

- a. Station Description:
Each plumbing fixture or drain within the facility used for control of wastewater.
- b. Inventory.
All plumbing fixtures and drains within the facility used for control of wastewater shall be inventoried. The inventory shall include as-built, installed, tank location and characteristics. Location information shall be described with respect to a current facility site plan drawing or map. Characteristics shall include dimension and capacities, inlets and outlets, origin, manufacturer, purpose, date of installation, and dates and purposes of any changes.
- c. Monitoring.
Each fixture and drain system shall be monitored for use and service. Monitoring and reporting will include all service events, purpose, date and time, service provider, waste hauler, volume of material removed, and final point of discharge destination.
- d. Purpose.
The primary purpose of these stations is for monitoring condition and use of all points of wastewater entry into the wastewater system and the proper operation and maintenance of these wastewater system components.

C. GROUNDWATER MONITORING STATIONS.

1. Performance Wells.

- a. Station Code: PW- n (n = 1,2,3,4, etc.)
- b. Station Description: Performance wells installed around the area of each wastewater system subsurface discharge system.

2. Upgradient Wells.

- a. Wells owned and maintained by Zone 7 Water Agency, identified as Well 15R17 and Well 22B1.
- b. Station Description: Groundwater monitoring wells located upgradient from the wastewater system discharge areas.

3. Downgradient Well 1.

- a. Station Code: MW-1
- b. Station Description: Groundwater at a monitoring well located downgradient from the Winery Wastewater System and South Domestic Wastewater System, along the northern boundary of the facility Site and about 850 feet east from the western corner of the Facility Site.
- c. Purpose.
The purpose of these stations is for observation and measurement of groundwater levels and for obtaining samples of groundwater for analytical characterization of groundwater quality.
- d. Location and Construction.
The location and construction characteristics of this well shall be as specified in the technical report, "Monitoring Well Installation Work Plan, The Wine Group, Concannon Winery, Livermore, California, 4 October 2012", prepared for The Wine Group by Kennedy Jenks Consultants of San Francisco.

4. Downgradient Well 2.

- a. Station Code: MW-2
- b. Station Description: Groundwater at a monitoring well located downgradient from the North Domestic Wastewater system, along the northern boundary of the Facility Site and about 2,800 feet east from the western corner of the Facility Site.
- c. Purpose.
The purpose of this station is for observation and measurement of groundwater levels and for obtaining samples of groundwater for analytical characterization of groundwater quality.
- d. Location and Construction.
The location and construction characteristics of this well shall be as specified in the technical report, "Monitoring Well Installation Work Plan, The Wine Group, Concannon Winery, Livermore, California, 4 October 2012", prepared for The Wine Group by Kennedy Jenks Consultants of San Francisco.

V. MONITORING SCHEDULE and SPECIFICATIONS

A. MONITORING SCHEDULE.

- 1. **Table 1.** The Discharger is required to perform sampling, analyses and observations according to the schedule tabulated in **Table 1 - Schedule for Monitoring**, given at the last page of this SMP, and the associated Monitoring Specifications given in Section V.B. below.
- 2. **Table 1 References.** Table 1 includes references given in parentheses to the right of the Parameter name. These references correspond to monitoring specifications given below in Section V.B. or V.C below.

B. WASTEWATER MONITORING.

1. Flow Monitoring and Reporting.

All flows shall be monitored continuously in a manner sufficient to measure, record and report the daily flow volume for each day of operation, and the monthly flow volume for each calendar month. Flows shall be reported as Daily Flow, in gallons, for each day when flow occurs, and Monthly Flow, in gallons, for each calendar month.

2. Additional Monitoring May be Needed.

The monitoring requirements established in this SMP are minimum requirements. Additional monitoring for any parameter may be necessary and prudent to assure proper wastewater system performance and compliance with WDRs.

3. Winery Process Wastewater Monitoring.

- a. During the non-wine grape crush season, winery process wastewater monitoring frequency shall be Monthly for BOD, TSS and Nitrogens.
- b. During the wine grape crush season, winery process wastewater monitoring frequency shall be conducted Weekly, for BOD and TSS, and Twice per Month, for Nitrogens.

4. Nitrogens.

- a. The parameter 'Nitrogens' in this SMP means all of the following parameters:
 - (1) Ammonia Nitrogen,
 - (2) Nitrate Nitrogen,
 - (3) Total Kjeldahl Nitrogen (TKN), and
 - (4) Total Nitrogen.
- b. Analytical results for the above nitrogen parameters shall be reported as: mg/L as nitrogen.
- c. Determination of compliance with the limit specified in this Order for Total Nitrogen shall be made against the sum of the analytical results for Nitrate Nitrogen, and Total Kjeldahl Nitrogen (TKN).

5. Precipitation. Precipitation (rainfall) monitoring shall be continuous, and recorded and reported, as total rainfall for each calendar day and as the total for each calendar month. Precipitation monitoring shall be representative of precipitation falling on the discharge areas.

6. Winery Process Area Stormwater Diversion Valve Operation.

For each event when the valve is operated, for any reason, the following shall be reported:

- a. Calendar date and time of the event;
- b. Actions taken;
- c. Person that made the change and Operator in charge; and
- e. New status, after changes are completed, e.g., final destination of wastewater passing through the valve -- either to the winery wastewater system or to the stormwater system.

7. Winery Wastewater Discharge System Diversion Valve Operation.

For each event when the valve is operated, for any reason, the following shall be reported:

- a. Calendar date and time of the event;
- b. Actions taken;
- c. Person that made the change and Operator in charge; and
- e. New status, after changes are completed, e.g., which discharge system area is in active use, and which area is in no-discharge/ "rest" mode.

8. Tank Service Event Data.

- a. For each service event involving inspection of and/or service of a wastewater system tank, the following shall be reported:
 - b. Calendar date of the service event;
 - c. Times of day when service started and stopped;
 - d. Component serviced (equipment code, name or narrative description);
 - e. Purpose of service event;
 - f. Service Provider;
 - g. Total volume of material removed; and
 - h. Final destination point of disposal (e.g., specific municipal wastewater treatment plant).
 - i. Total water depth.
 - j. Scum (floating) and solids (settled) thickness.
 - k. Inspection of tank for structural and watertight integrity.

9. Standard Observations - Domestic Wastewater System.

- a. Check (smell) area for odors.
- b. Check area for evidence of any standing water or surfacing wastewater.
- c. Check area perimeter for proper hydraulic containment of wastewater. During dry season, note any seepage. During wet season, note any concentrated runoff flows.
- d. Check all visible distribution system components for proper condition and hydraulic integrity.
- e. Check grass for proper maintenance (mowing). Record approximate height of grass.
- f. Check perimeter for integrity and proper condition of all discharge control and monitoring systems.

10. Standard Observations - Winery Wastewater System.

- a. Check (smell) area for odors.
- b. Check area for evidence of any standing surface water (ponded water).
- c. Check for evidence of mosquitoes breeding within the area due to standing water.
- d. Check all visible distribution system components for proper condition and hydraulic integrity.
- e. Check discharge area runoff containment systems (berms and/or subsurface drains) for proper condition and integrity. Note and record any evidence of any wastewater escaping the discharge area.
- f. Check perimeter for integrity and proper condition of all discharge control and monitoring systems.

- 11. "Start-Up" Monitoring.** Monitoring frequencies shown in Table 1 are intended to indicate routine standard monitoring frequencies. Additional monitoring may be necessary or appropriate for any parameter depending on conditions at the time. During any time when a wastewater system routine operation is changed, including partial or complete shut-down for equipment or process operation and maintenance, and subsequently returned to routine operation, monitoring shall be conducted in the "Start-Up" mode. "Start-Up" mode includes (a) Increased Monitoring Frequency as given in section D below, and (b) continuing for at least two months after system re-start, or continuing longer if necessary until stable operations are achieved.

12. Wastewater System Tank, Fixture and Drain Inventory

- a. Inventory.
The Discharger shall complete an inventory of all tanks, drains, and plumbing fixtures within the facility used for control of wastewater. The inventory shall include as-built, installed, tank location and characteristics. Location information shall description with respect to a current facility site plan drawing or map, and map coordinates of each tank access port. Characteristics shall include dimension and capacities, inlets and outlets, origin, manufacturer, purpose, and date of installation, and dates and times of any changes.
- b. Report.
The Discharger shall submit a technical report to the Water Board with the complete results of the inventory described in 12.a. above.
- c. Report Schedule.
The report described in b above shall be submitted to the Water Board no later than 30 days after adoption of this Order.

C. GROUNDWATER MONITORING PROGRAM.

The Discharger is required to implement a program of groundwater monitoring in the vicinity of the wastewater discharge areas, in accordance with the following. The groundwater monitoring system consists of performance wells and groundwater monitoring wells.

1. Performance Wells

Performance Wells are installed around the leachfields for the process water and domestic wastewater systems.

- a. Water level measurements shall be measured in the performance wells quarterly.
- b. If water is present in a performance well downgradient of wastewater system, samples shall be taken by the Discharger. Samples shall be taken after the well has been properly purged. The samples shall be analyzed for the same set of parameters identified for downgradient monitoring wells, in 2.c. below.

2. Groundwater Monitoring Wells

- a. Groundwater is monitored at two upgradient and two downgradient monitoring wells:

- i. Upgradient wells: Wells 15R17 and 22B1, owned and maintained by Zone 7.
- ii. Downgradient wells: Wells MW-1 and MW-2, owned and maintained by the Discharger.

- b. Upgradient monitoring wells are owned and maintained by Zone 7. Water levels are measured by Zone 7 semiannually and water quality analysis samples are collected by Zone 7 annually.

- c. Downgradient monitoring wells shall be monitored by the Discharger as follows:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency (a)</u>
Depth to Groundwater	0.01 feet	Measurement	Quarterly
Groundwater Elevation	0.01 feet	Calculation	Quarterly
Gradient	feet/feet	Calculation	Semiannual
Nitrate as Nitrogen	mg/L	Grab	Quarterly
Total Dissolved Solids	mg/L	Grab	Quarterly
Total Kjeldahl Nitrogen	mg/L	Grab	Quarterly
Specific Conductivity	umhos/cm	Grab	Quarterly
pH	pH units	Grab	Quarterly
General Minerals (b)	mg/L	Grab	Annually

- (a) Sample dates shall coincide with upgradient monitoring events.

- (b) The parameter General Minerals includes the following: calcium, magnesium, sodium, chloride, potassium, sulfate, total alkalinity (including alkalinity series), and total hardness.

D. INCREASED MONITORING FREQUENCY.

If any monitoring indicates a violation of waste discharge requirements or unstable wastewater system operation or performance, OR, if any specified samplings or analyses are not completed as required, then the monitoring for the parameter(s) and monitoring station(s) in concern shall immediately and henceforth be conducted at twice the frequency identified in Table 1 of this SMP. This increased monitoring frequency shall be maintained for at least two sampling events, and until such time as the results of monitoring indicate violations are no longer occurring or the problem has been corrected and the wastewater system has returned to stable operation and performance.

E. MONITORING BY USE OF AUTOMATED INSTRUMENTS.

Selected parameters may be monitored by the use of automated analytical instruments, provided such instruments are properly maintained and calibrated to ensure accurate measurements, and that these instruments and their use is documented in the Operation and Maintenance Program Manual, and written approval by the Executive Officer has been provided.

F. MODIFICATION OF MONITORING PRACTICES.

Modifications of the monitoring practices specified in this SMP may be authorized by the Executive Officer, in consideration of acceptable accumulated data and acceptable alternate means of monitoring. Factors to be considered include: data quality, adequate characterization of the identified water or wastewater system process, consistency of system performance, compliance with waste discharge requirements, and acceptable means for providing equivalent and adequate monitoring of the identified water or wastewater system process. Requests for modification of monitoring practices must be submitted to the Water Board in writing, with a technical report which includes evaluation of accumulated data, and a complete description of proposed alternate means of monitoring. Proposed modifications of monitoring practices must be approved in writing from the Executive Officer, prior to implementation.

VI. REPORTS to be SUBMITTED to the WATER BOARD

A. MONITORING REPORTS.

The Discharger shall submit to the Water Board monitoring reports documenting the wastewater system operation and performance, and compliance with waste discharge requirements, in accordance with the following:

1. Report Schedule.

- a. Monthly Reports.** Written reports shall be prepared for each calendar month and shall be submitted to the Water Board by the last day of the month following the monitoring period.
- b. Annual Reports.** Written reports shall be prepared for each year and shall be submitted to the Water Board by the last day of the second month following the monitoring period.
- c. Future Quarterly Reports.** The Discharger may request that the monthly report schedule be changed to a quarterly report schedule, after a period of at least two years of successful demonstration of wastewater system operation maintenance and monitoring in accordance with this SMP and monthly reporting schedule. The request shall be made by letter to the Executive Officer. Approval, if warranted, shall be made by written correspondence from the Executive Officer. Quarterly reports shall be submitted for each calendar quarter, and submitted to the Water Board by the last day of the month following the monitoring period.

2. Transmittal Letter.

A letter of transmittal shall accompany each monitoring report submitted to the Water Board. The transmittal letter shall include the following:

- a. Identification.** Identification of the following:
 - (1) The discharge facility by name and address;
 - (2) The monitoring period being reported;
 - (3) The name and telephone number of a person familiar with the report and the current status of the wastewater system, for follow-up discussions as may be needed; and
 - (4) The name of the Water Board staff case handler.

- b. Operation and Maintenance Activities.** Discussion of all significant wastewater system operation and maintenance activities that occurred during the reporting period (e.g., pumping of septic tanks; repair or replacement of system equipment), including dates and reasons for such activities.
- c. Violations or Problems.** Discussion of any violations of waste discharge requirements, and any problems or unusual conditions, that occurred during the reporting period. This shall include reporting of the following information:
- (1) Date and time of occurrence;
 - (2) Location of occurrence, shown on a scaled plan drawing of the facility site;
 - (3) Description of the violation, problem or unusual condition;
 - (4) Corrective actions taken or planned to correct the violation, problem, or unusual condition and a time schedule for implementation of these actions. Actions may include increased monitoring and any changes to wastewater system equipment or operations.

If a report describing corrective actions and/or a time schedule for implementation of those actions was previously submitted to the Water Board, then reference to that report is satisfactory. References to other reports shall include the Date, Title or subject, and Author of the referenced report.

- d. Transmittal Letter Signature(s).** The transmittal letter shall be signed by: (1) the Discharger's principal executive officer, ranking elected official or duly authorized representative, and (2) the wastewater system chief plant operator, with the following certification statement:

"I certify under penalty of law that this document and all attachments have been prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

3. Results of Analyses and Observations.

Each report shall include results of analyses and observations in accordance with the following:

- a. Monitoring Results.** Each monitoring report shall include tabulations of results from all required analyses, measurements and observations specified in this SMP for the reporting period, including:
- (1) Date of sampling or observation;
 - (2) Location of sampling or observation (sample station);
 - (3) Parameter of analysis (e.g., pH, Dissolved Oxygen, etc.); and
 - (4) The result of the analysis, measurement or observation.
- b. Data Presentation.** In reporting monitoring data, the data shall be arranged in tabular form so that the data are clearly discernible. The data shall be summarized in a manner to illustrate clearly whether the discharge is in compliance with waste discharge requirements and this SMP. Reporting shall include maximum, minimum and monthly average values for each parameter for which more than one sample result is obtained during the monitoring period.
- c. Sample Analysis Data.** For all sample analyses, include the following:
- (1) Date of analysis;
 - (2) Individual or contract laboratory conducting the analysis;
 - (3) Analytical procedure or method used, and test method detection level; and
 - (4) Copies of laboratory analysis result reports for all analyses conducted by a contract laboratory.

- d. Reporting Results Below Detection Limits.** For all analytical characterizations (laboratory tests) for which results are identified as below limits of detection of the test procedure, data reporting shall include the limit of detection. In other words, reporting a sample test result as only “ND”, or “not detected” or similar, is not acceptable; the actual numeric value of the detection limit must also be reported. It is acceptable to use notations of non-detection - “ND” or similar - in data tables, provided that the corresponding limit of detection is clearly identified elsewhere in the table, or as a footnote of the table.
- e. Additional Monitoring Results.** If any parameter is monitored more frequently than is required by this SMP, then the results of such monitoring shall be included in the monitoring reports, and in any calculations of statistical values.

4. Identification of Monitoring Stations.

Each report shall include a scaled and legible plan view drawing of the facility site which shows the locations of all monitoring stations at which monitoring is required by this SMP.

5. Monitoring During Wastewater System Modifications.

Whenever any modifications to the wastewater system occur, the monitoring report shall include a description of work that has occurred during the monitoring period, any impacts to the wastewater system operations and, if work is incomplete, anticipated completion schedule.

6. Annual Monitoring Reports.

The annual monitoring report shall include the following:

- a.** Tabular and graphical summaries of the monitoring data obtained during the period being reported.
- b.** A discussion of wastewater system performance and record of compliance with the requirements specified by this Order, including monitoring and reporting requirements.
- c.** A complete discussion of groundwater monitoring results, including evaluation of groundwater movement, changes in groundwater levels and quality, and evaluation of any observed changes with respect to the wastewater discharges.
- d.** For any event of non-compliance with requirements specified by this Order, including monitoring and reporting requirements, the report shall include description of corrective actions taken or planned to achieve full compliance, and a time schedule of when those actions were or will be taken.

B. REPORTS OF VIOLATIONS.

If the Discharger violates or threatens to violate waste discharge requirements or this SMP due to:

- 1.** Maintenance work, power failure, or breakdown of wastewater system equipment;
- 2.** Accidents caused by human error or negligence; or
- 3.** Other causes such as acts of nature, then:

the Discharger or Discharger’s agent(s) shall notify the Water Board office by telephone as soon as the Discharger or Discharger’s agent(s) have knowledge of the incident. Written notification shall be submitted within two weeks of the date of the incident, unless directed otherwise by Water Board staff. The written notification shall include pertinent information explaining reasons for the non-compliance and what steps were taken to correct the problem and the dates thereof, and what steps are being taken to prevent the problem from recurring.

C. REGIONAL WATER BOARD ADDRESS and PHONE NUMBER.

This Water Board's current office mailing address and phone number is given below. This is the address to be used for submittal of reports and correspondence to the Water Board.

1. **Address:** California Regional Water Quality Control Board, San Francisco Bay Region
1515 Clay Street, Suite 1400, Oakland, CA 94612
2. **Phone number:** (510) 622 - 2300; Fax: (510) 622 - 2460.

VII. REPORTS to be SUBMITTED to OTHER ENTITIES.

A. Alameda County.

The north and south domestic wastewater systems were designed and permitted via the Alameda County (County) Onsite Wastewater Treatment System and Individual/Small Water System Regulations. The two systems will be maintained and regulated in accordance with the County ordinance, including but not limited to the following:

1. The property owner must conduct a visual and operational inspection of the System once every six months to monitor the performance of the Systems. The County may inspect the System and/or sample performance and monitoring wells. The County may require the Discharger to sample monitoring and performance wells. At a minimum, samples taken by the Discharger and/or the County from the performance wells must be tested for total and fecal coliform. Test results from such annual samples must be provided to the County. Additional testing may be required by the County. Analysis must be paid for by the Discharger and must be conducted by a California State Approved Water Testing Laboratory.
2. The Discharger or Registered Professional or Licensed Contractor authorized by the Discharger must submit an annual written report to the County with the following information for the Systems.
 - a. Water flow readings, every 6 months of the wastewater flow into the System. Appropriate flow measurement devices must be installed.
 - b. Findings of the annual inspections of the sump and pump system must include:
 - 1) Proper operation water-tightness
 - 2) Proper function of the alarm System
 - 3) Pump run cycle time
 - 4) Verification of the flow measurement device performance, and calibration as necessary, to ensure accurate flow measurement data.
 - c. Findings of the inspection of the System must include:
 - 1) Breakout or surfacing of wastewater on the ground
 - 2) Testing and condition of the adjusting and purge valves
 - 3) Testing and condition of the performance wells
 - 4) Any repairs, modifications, additions or deletions to any component of the System and any significant alterations to the ground surface in the area of the System which may affect the System including but not limited to grading, paving or installing structures.
 - d. Test results from annual nitrate samples shall be provided from the point of discharge of the pretreatment unit.

- e. The Discharger or Registered Professional or Licensed Contractor authorized by the Discharger must submit a written report, every 2 years, to the County detailing that the System continues to function as designed and is functioning properly.

VIII. MONITORING PROGRAM CERTIFICATION

I, Bruce H. Wolfe, Executive Officer, hereby certify that this Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in the Water Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements for the subject wastewater systems.
2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the Discharger, and revisions will be ordered by the Executive Officer.
3. Is effective on the following date: _____.

BRUCE H. WOLFE
Executive Officer

[Water Board electronic file number (CIWQS Place Number) for this facility is: 771359.]
[Water Board staff author is Blair Allen.]

TABLE 1 - SCHEDULE for MONITORING

Monitoring Stations:	1	2	4	5	7	7	8	9	11& 12	3, 6, 10	13	14	MW-1 & MW-2
	North Domestic. Influent	North Domestic. Effluent	South Domestic. Influent	South Domestic. Effluent	Process WW- Non-Crush	ProcessWW - Crush Season	Bottling WW	Combined Winery WW	Diversio n Valves	Discharge Areas	WW Tanks	WW Drains, etc.	Ground Water Wells
Type of Sample:	F	F, G	F, G	F, G	F, C	F, C	F, C	F, G	O & M	O	F, O	O	G, GL
Parameter (units) [Reference]													
Flow Volume (gallons) [V.B.1]	D&M	D&M	D&M	D&M	D&M	D&M	D&M	D&M	Event		Event	Event	
BOD ₅ 20°C (mg/L) [V.B.3]		M		M	M	2/M	M	M					
TSS (mg/L) [V.B.3]		M		M	M	2/M	M	M					
Temperature (degrees F or C)		M		M				M					
pH (pH units)		M		M	M	2/M	M/Q	M					Q
Dissolved Oxygen (mg/L)		M		M				M					
Nitrogens (mg/L as N) [V.B.3 & 4]	M	2/M	M	2/M	M	2/M	M/Q	M					Q
Total Dissolved Solids (mg/L)		M		M		2/M	M/Q	M					Q
Specific Conductivity (micromhos/cm)		M		M		2/M	M/Q	M					Q
General Minerals [V.C.2]													A
Ground Water Level (feet) [V.C.2]													Q
Precipitation (inches) [V.B.5]										D & M			
Diversion Valve Operation [V.B.6 & 7]									Event				
Service Event Data (Date, Time, etc.) [V.B.8]								Event	Event	Event	Event	Event	
Standard Observations [V.B.9 & 10]										M			