

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER R5-2016-0031

WASTE DISCHARGE REQUIREMENTS

FOR  
GOLDSTONE LAND COMPANY, LLC  
KURT AND SANDRA KAUTZ  
BEAR CREEK WINERY  
SAN JOAQUIN COUNTY

The California Regional Water Quality Control Regional Board, Central Valley Region, (hereafter Central Valley Water Board) finds that:

1. On 29 December 2014, Goldstone Land Company, LLC submitted a Report of Waste Discharge (RWD) to apply for revised Waste Discharge Requirements (WDRs) for Bear Creek Winery. An amended RWD was submitted on 30 April 2015.
2. Goldstone Land Company, LLC owns and operates Bear Creek Winery, and Kurt and Sandra Kautz (Kautz Family Vineyards) own Vineyards 4, 5 and 6. Therefore, Goldstone Land Company, LLC, and Kurt and Sandra Kautz are jointly referred to as "Discharger" and are responsible for compliance with the WDRs.
3. The winery is located at 11900 North Furry Road in Lodi (Section 29, T3N, R7E, MDB&M), as shown on Attachment A, which is attached hereto and made part of this Order by reference. The winery currently discharges approximately 21.4 million gallons (MG) of wastewater per year to 9.2 acres of rapid infiltration basins and 38 acres of vineyard land application areas (LAAs). The Discharger proposed to apply wastewater to additional 150 acres of LAAs at Vineyards 3 through 6, as shown on Attachment B, which is attached hereto and made part of this Order by reference. The ownership of these parcels is summarized below.

Name	Parcel Number (APN)	Owner	Acreage (acres)
Winery Impervious Area Rapid Infiltration Basins, Existing LAAs (Vineyard 1, Vineyard 2)	061-160-26	Goldstone Land Company, LLC	72.7
Proposed LAAs Vineyard 3	061-150-14	Goldstone Land Company, LLC	19.8
Proposed LAAs Vineyard 4	061-140-54	Kautz Family Vineyards	34.7
Proposed LAAs Vineyard 5	061-160-06	Kautz Family Vineyards	57.0
Proposed LAAs Vineyard 6	061-160-02 061-160-25	Kautz Family Vineyards	38.5
Total Area			222.7

4. WDRs Order 71-037, adopted by the Central Valley Water Board on 21 August 1970, prescribes requirements for the discharge. The Discharger proposed to install a wastewater treatment system and to increase vineyard LAAs by 31 August 2018. Therefore, Order 71-037 is rescinded and replaced by this Order.

### Existing Facility and Discharge

5. The winery has been in operation since 1934. Activities at the winery including grape crushing, fermentation, storage and distribution. The facility currently operates as a bulk winery, with no barrel storage or bottling occurring at the plant. The winery's current crush production level is approximately 50,000 tons of grapes annually, and wine storage capacity is approximately 12.6 million gallons.
6. A distillery had been in operation historically, but has been discontinued since 1995 and was removed from the site. A small water softener used in the laboratory is regenerated off site. Other water softening activities, including ion exchange, are no longer practiced and/or in use.
7. A variety of chemicals are used in the winemaking process for sanitizing tanks and other process equipment, filtering, clarifying and preserving wine chemicals, such as tri-sodium phosphate, hypochlorite, chlorine dioxide, detergents, and ozone, etc.
8. The winery operates two deep wells to supply industrial water demand at the facility. Irrigation and domestic water is supplied by separate wells. Water quality for supply water is characterized in the table below based on one sampling event conducted on 2 April 2015:

Constituent	Units	Supply Well 1	Supply Well 2	Irrigation Well	Domestic Well
Nitrate as Nitrogen	mg/L	17	4.4	1.1	3.4
Total Kjeldahl Nitrogen	mg/L	<1	<1	<1	<1
Total Dissolved Solids	mg/L	530	250	190/160 <sup>1</sup>	140
Calcium	mg/L	79	33	19	17
Chloride	mg/L	65	23	7	6
Electrical Conductivity	µmhos/cm	867	383	232	215
Iron	µg/L	<30	830	110	<30
Magnesium	mg/L	32	13	<10	8
Manganese	µg/L	<10	20	<10	<10
pH	std	7.04	7.39	7.69	7.63
Sodium	mg/L	37	17	14	9
Sulfate	mg/L	35	14	7	8

Constituent	Units	Supply Well 1	Supply Well 2	Irrigation Well	Domestic Well
Total Hardness as CaCO <sub>3</sub>	mg/L	329	136	72	75

<sup>1</sup>. Fixed Dissolved Solids(FDS)

9. Wastewater and storm water runoff are collected by north and south collection systems within the facility. The winery process wastewater generated in the crush pad area and storm water runoff in north area are collected in the north collection system and is screened before it flows to the main sump. Wastewater generated from the warehouse and the tank pad area and storm water runoff in the south area are collected in the south collection system and are conveyed to the main sump by gravity without screening. From the main sump, the wastewater is discharged into the rapid infiltration basins manually or the vineyard LAAs by flood irrigation. Storm water flow is estimated to be approximately nine percent of total influent flow.
10. Five un-lined rapid infiltration basins totaling 9.2 acres serve as the primary disposal site for combined process wastewater and storm water collected on the site. Each basin has an approximately one to two-foot depth sidewall. Each basin is disked, deep-rippled, and re-leveled annually. Berms are constructed of compacted earth with a width of approximately 12 feet. The existing rapid infiltration basins provide approximately three million gallons of emergency storage volume based on one foot of freeboard.
11. Historically, the winery discharged wastewater from wine making process and distillery operation to over 45 acres of land disposal area. In the early 1990's when the distillery was closed, the winery continued to discharge process wastewater to 9.2 acres of rapid infiltration basins. The balance of the 45 acres was converted to Vineyards 1 and 2, which seasonably received process wastewater as irrigation water for the grape vines. Over the past several years, organic loading rates to the rapid infiltration basins have been excessive and have exceeded generally accepted loading rates for land disposal systems, especially during the crush season.
12. The following table summarizes annual influent flow rates from 2012 through 2014. The flows are combined winery process wastewater and storm water collected onsite.

Year	Annual Total (MG)	Annual Average (MGD)	Crush Season (Aug. through Oct.) Average Daily Flow (MGD)
2012	25.3	0.07	0.12
2013	18.5	0.05	0.09
2014	21.4	0.06	0.12

13. Based on the monthly monitoring data collected from January 2012 through October 2014 , the wastewater quality is summarized below:

Effluent Quality				
Constituent	Unit	Minimum	Maximum	Flow Weighted Average
Biological Oxygen Demand	mg/L	302	10,400	2,070
Total Dissolved Solids	mg/L	630	8,910	2,058
Fixed Dissolved Solids	mg/L	260	5,320	916
Chloride	mg/L	35	196	85
Sodium	mg/L	39	231	71
Sulfate	mg/L	<2	1,480	151
Nitrate as Nitrogen	mg/L	<0.1	19.5	8.6
Total Kjeldahl Nitrogen	mg/L	2	75	15

14. Seeds, stems, pomace from processed wine grapes are sent offsite for animal feed. Filtered solids such as lees and diatomaceous earth captured from fermentation tanks and filtration processing (estimated 300 cubic yards per year on dry volume) are currently stored on a concrete pad adjacent to the rapid infiltration basins and spread and disked into the vineyards on a routine basis. The concrete pad does not have a leachate collection system.

### Planned Changes in the Facility and Discharge

15. The Discharger plans to install a wastewater treatment system and to increase vineyard LAAs to accommodate a production increase from 50,000 to 60,000 tons of grapes annually over the next ten years. The proposed modifications will be completed in phases as shown in the following table:

Proposed Improvement				
Phase	Production Capacity, tons/year	Peak Month Flow (MGD)	Annual Total Flow (MG)	Completion Schedule
Phase I	50,000	0.144	25	August 2016
Phase II	60,000	0.171	30	August 2018

Phase I: Vineyard LAAs will be expanded from 38.3 to 92.8 acres by adding Vineyards 3, and 4. The untreated wastewater will be applied to the LAAs by flood irrigation.

Phase II: The winery will increase production from 50,000 tons to 60,000 tons.

- a. Vineyard LAAs will be expanded from 92.8 to 185.3 acres by adding Vineyards 5 and 6.
- b. The Discharger has proposed to install a treatment system consisting of a new main sump, two aerated lined ponds, an effluent pump and a trickling filter system.

Each pond will have a total depth of ten feet. The total capacity of two ponds will be 1.8 million gallons with two-foot of freeboard. High-density polyethylene liners and leak detection piping will be installed in the ponds. Trickling filters are biological filters that use passive aeration and naturally occurring organisms to treat wastewater. The trickling filter system will be sized based on an organic loading rate of 35 lb BOD/1000 cf/day and the number and size of trickling filters will be determined and presented in the final engineering plans and construction documents as part of the *Pond Design Work Plan and Construction Quality and Assurance Plan* submitted pursuant to Provision H.1.f. A pressurized sand filter system will be installed to screen effluent prior to vineyard irrigation via drip systems.

- c. The Discharger will review the existing filtered solids storage area and may install a new storage area with liner and berm.
- d. Storm water runoff from warehouse roofs (77,300 square feet) will be diverted to the nearby drainage Pixley Slough in order to reduce storm water contribution to the wastewater collection system. It is estimated that approximately 0.7 million gallons of storm water runoff will be discharged to surface water during an average rainfall year. The Discharger has applied a separated storm water permit for this discharge.
- e. In the 29 February 2016 Comments on Tentative WDRs, the Discharger requested to use treated wastewater for other beneficial uses, such as dust control on farm roads around the existing and proposed vineyard LAAs, and additional 1,004 acres of agricultural lands as listed below, which are owned by Kautz's family.

Parcel Number	Acreage (acres)	Parcel Number	Acreage (acres)	Parcel Number	Acreage (acres)
061-100-36,37,38	29.7	063-020-10	39.8	063-050-62,63	104.1
059-110-04,05	78.3	063-020-12	38.9	059-040-39,41	33.5
061-100-19,22,31,32	20.3	063-020-11	74.1	061-132-32	32.4
059-260-09	38.9	059-140-35,36	75.5	061-132-31	17.8

Parcel Number	Acreage (acres)	Parcel Number	Acreage (acres)	Parcel Number	Acreage (acres)
061-100-06	3.1	059-140-02	60.5	059-140-17	23.3
061-100-26,27,35,	19.4	061-160-11,12	49.6	061-140-32	31.6
061-160-09	74.3	063-090-13	40.1	061-140-04	31.7
061-140-37	22.7	063-080-43	44.3	061-090-41,42,50	20.2
Total Area: 1004.1 acres					

This Order requires the Discharger to submit an *Effluent Reuse Plan* for the beneficial uses.

16. This Order requires the Discharger to install a leachate collection system in the solids storage area for the planned changes. After completion of proposed improvements, all leachate must be directed to the wastewater treatment system for further treatment.
17. After completion of the proposed improvements, the treated wastewater is projected to have a flow weighted average BOD concentration of 207 mg/L, compared to current level of 2,070 mg/L; total nitrogen concentration will also decrease from current flow weighted average of 24 to 7 mg/L. The projected effluent FDS concentrations are expected to be similar to the current levels. Based on the RWD, anticipated waste constituent loading rates are tabulated below for the treated wastewater, supplemental irrigation water and solid waste applied to the LAAs.

Description	Units	Current Operations <sup>2</sup>	Projected Rates after Improvements <sup>3</sup>
FDS Loading <sup>1</sup>	lb/acre/yr	4,170	1,800
TDS Loading <sup>1</sup>	lb/acre/yr	8,950	2,000
Total Nitrogen Loading <sup>1</sup>	lb/acre/yr	110	13
Max BOD Loading <sup>1</sup>	lb/acre/day	260	10
Blended FDS <sup>1</sup>	mg/L	600	400

<sup>1</sup>. Based on treated wastewater, supplemental irrigation water and filtered residual solids applied to the vineyards.

<sup>2</sup>. Based on total areas of 47.5 acres including 9.2 acres of rapid infiltration basins and 38.3 acres of Vineyards 1 and 2.

<sup>3</sup>. Based on total areas of 194.5 acres including 9.2 acres of rapid infiltration basins and 185.3 acres of vineyards.

**Site-Specific Conditions**

- 18. The topography of the surrounding area is relatively flat. The elevation at the site is approximately 50 feet above mean sea level. The winery parcel is entirely located within a moderate flood hazard area Zone X considered between the limits of the 500-year flood and areas of the 100-year flood, with average flood depths of less than one foot.
- 19. The USGS Soil Survey shows the majority of the rapid infiltration basins are mainly Tokay fine sandy loam with an estimated average percolation rate of 0.28 inches per day. A soil survey is summarized below.

Soil Survey		
Description	Areas	Soils
Main Parcel	APN 061-160-26	Stockton clay, Tokay fine sandy loam
Vineyard 3	APN 061-150-14	Stockton clay, Tokay fine sandy loam
Vineyard 4	APN 061-140-54	Tokay fine sandy loam
Vineyard 5	APN 061-160-06	Stockton clay
Vineyard 6	APN 061-160-02, 061-160-25	Galt clay, Hollenbeck silty clay, Stockton clay, Tokay fine, sandy loam

- 20. Domestic wastewater is disposed separately from the winery process wastewater in a septic leachfield system, which is regulated by the San Joaquin County Environmental Health Department.
- 21. Annual precipitation in the vicinity averages approximately 17.35 inches. The mean pan evaporation rate is approximately 50.3 inches per year. The 100-year, 365-day precipitation event is approximately 31.38 inches.
- 22. The winery site is bordered on the south by Pixley Slough, a tributary of the San Joaquin River. Pixley Slough, an intermittent stream, flows across the site from east to west.
- 23. Surrounding land uses are agriculture and residential.

**Groundwater Conditions**

- 24. Generally, groundwater flows from north to south with a gradient range from 0.0013 to 0.0017 feet/foot. The depths to water range from 90 to 108 feet below ground surface (bgs).
- 25. Six groundwater monitoring wells MW1 through MW6 were installed between 2001 and 2003, including two background wells MW2 and MW4 and four downgradient wells MW1, MW3, MW5, and MW6, as shown on Attachment B. The depths of these

wells ranged from 90 to 95 feet bgs. However, in recent years groundwater levels have dropped and several of these wells were dry. All six monitoring wells were replaced with deeper wells MW2D through MW7D in September and October 2014.

26. The existing upgradient monitoring wells MW2D and MW4D are located in Vineyard 3 and on the northeast corner of Vineyard 4, respectively. After completion of Phase I improvements, Vineyards 3 and 4 will be used as LAAs, and MW2D will be a compliance well and MW4D may be affected by the discharge. This Order requires the Discharger to install at least one additional monitoring well that will be located upgradient of all existing or planned LAAs.
27. A summary of historical groundwater monitoring data is presented in the table below based on data collected during 2001 through July 2013 prior to the abandonment of wells MW1 through MW6.

Groundwater Average Concentration						
Potential Water Quality Objective		TDS (mg/L)	Sodium (mg/L)	Chloride (mg/L)	Nitrate as N (mg/L)	Sulfate (mg/L)
		500-1,500 <sup>1</sup>	69 <sup>2</sup>	250-600 <sup>3</sup>	10 <sup>4</sup>	250 <sup>5</sup>
Destroyed Background Well	MW2 <sup>6</sup>	622	56	30	20	55
	MW4 <sup>7</sup>	625	54	85	18	69
Destroyed Down-gradient Wells	MW1 <sup>6</sup>	925	65	76	29	84
	MW3 <sup>6</sup>	1,056	70	39	38	74
	MW5 <sup>7</sup>	881	71	62	13	67
	MW6 <sup>7</sup>	789	54	97	9	50

1. Secondary Maximum Contaminant Level range, Recommended level = 500; Upper level = 1000 mg/L; Short-term level = 1,500 mg/L.
2. Lowest Agricultural Water Quality Goal.
3. Secondary Maximum Contaminant Level range, Recommended level = 250; Upper level = 500 mg/L; Short term level = 600 mg/L.
4. Primary Maximum Contaminant Level.
5. Secondary Maximum Contaminant Level.
6. Data collected quarterly from June 2001 through May 2010.
7. Data collected quarterly from 3<sup>rd</sup> Quater 2003 through July 2013.

28. The average TDS concentrations in the downgradient wells MW1, MW 3, MW 5 and MW6 range from 789 to 1,056 mg/L, which were greater than the average TDS concentration of 623 mg/L in the background monitoring wells. The discharge has degraded groundwater for TDS. Downgradient well MW3, which is located downgradient of the repaid infiltration basins, contained the highest TDS

concentration of 1,056 mg/L that exceeded the secondary maximum concentration limit (MCL) of 1,000 mg/L for TDS.

29. The average nitrate concentrations in the upgradient wells MW2 and MW4 exceeded the Primary MCL of 10 mg/L for nitrate as nitrogen. The average nitrate nitrogen concentrations in the downgradient wells MW5 and MW6 were less than that in the upgradient monitoring wells. This indicated that high levels of organic matter in the wastewater may cause denitrification in groundwater.
30. Sodium, chloride and sulfate concentrations in the downgradient wells have not shown significant exceedance of their water quality objectives respectively.
31. Reducing conditions in the groundwater beneath the LAAs have occurred due to discharge of high concentrations of organic waste in wastewater, promoting the dissolution of minerals that are naturally present in the soil. The RWD stated that the most notable impact of wastewater infiltration on the underlying groundwater has been a substantial increase in the concentrations of calcium, magnesium, and bicarbonate in the groundwater based on 2013 groundwater monitoring data for the downgradient monitoring well MW5. Calcium, magnesium, potassium, and bicarbonate concentrations in MW5 have over twice the typical concentrations of background, and the same pattern of increased groundwater concentrations of calcium, magnesium, and bicarbonate was observed in the downgradient wells MW1, MW3, and MW6.
32. The RWD states that during periods of intense infiltration, the water level in MW5 was observed to be higher than that in the upgradient well MW4 indicating mounding occurred beneath the rapid infiltration basins.
33. In September and October 2014, MW1 through MW6 were replaced with six new wells MW2D through MW7D with deeper depths ranged from 120.5 to 122.5 feet bgs. Three new wells (MW4D, MW5D, and MW6D) are located in close proximity to existing monitoring wells with the same number. Wells MW3D and MW7D are considered downgradient monitoring wells. From October 2014 to May 2015, the depths to water from top of casing ranged from 95 to 108 feet bgs. Groundwater monitoring data provided by the Discharger in its 29 February 2016 Comments on Tentative WDRs are summarized below.

Groundwater Average Concentration

		EC (µmhos /cm)	Bicarbo -nate	Sodium (mg/L)	Nitrate Nitrogen (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Dissolved Iron (µg/L)	Dissolved Manganese (µg/L)
Potential Water Quality Objective		900 <sup>2</sup>	--	69 <sup>3</sup>	10 <sup>4</sup>	250- 600 <sup>5</sup>	250 <sup>4</sup>	300 <sup>2</sup>	50 <sup>2</sup>
Background Well <sup>1</sup>	MW2D	1,244	334	62	32	96	68	157	25
	MW4D	1,034	291	82	19	102	64	78	14

Groundwater Average Concentration

	EC (µmhos /cm)	Bicarbo -nate	Sodium (mg/L)	Nitrate Nitrogen (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Dissolved Iron (µg/L)	Dissolved Manganese (µg/L)	
Potential Water Quality Objective	900 <sup>2</sup>	--	69 <sup>3</sup>	10 <sup>4</sup>	250- 600 <sup>5</sup>	250 <sup>4</sup>	300 <sup>2</sup>	50 <sup>2</sup>	
Down- gradient Wells <sup>1</sup>	MW3D	1,238	306	70	44	75	95	98	25
	MW5D	1,790	886	73	5.4	87	57	142	127
	MW6D	1,075	424	51	16	79	56	88	17
	MW7D	836	276	48	16	59	56	98	16

1. Data were collected in eight sampling events during October 2014 through November 2015; 11 sets of outlier data for iron and manganese were not included in the calculation.
2. Secondary Maximum Contaminant Level.
3. Agricultural water quality goal.
4. Primary Maximum Contaminant Level.
5. Secondary Maximum Contaminant Level range, Recommended level = 250; Upper level = 500 mg/L; Short term level = 600 mg/L.

34. The Discharger's 29 February 2016 Comments on Tentative WDRs states that *"Downgradient well MW5D has the highest electrical conductivity concentration attributed primarily to the high concentration of bicarbonates. Elevated levels of iron and manganese are also observed in MW5D, immediately adjacent to the rapid infiltration basins as a result of the reduced groundwater conditions resulting from the long-term discharge of high organic loading rates to the basins"*.

### Basin Plan, Beneficial Uses, and Regulatory Considerations

35. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Board. Pursuant to Water Code section 13263(a), waste discharge requirements must implement the Basin Plan.
36. Local drainage is to Pixley Slough, a tributary of the San Joaquin River. The beneficial uses of the San Joaquin River are municipal and domestic supply; agricultural supply; industrial process supply; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; and wildlife habitat.
37. The beneficial uses of underlying groundwater as set forth in the Basin Plan are municipal and domestic supply, agricultural supply, industrial service supply and industrial process supply.
38. The Basin Plan establishes narrative water quality objectives for chemical constituents, tastes and odors, and toxicity in groundwater.

39. The Basin Plan's narrative water quality objectives for chemical constituents, at a minimum, require waters designated as domestic or municipal supply to meet the MCLs specified in Title 22 of the California Code of Regulations (hereafter Title 22). The Basin Plan recognizes that the Central Valley Water Board may apply limits more stringent than MCLs to ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses.
40. The narrative toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, animal, plant, or aquatic life associated with designated beneficial uses.
41. Quantifying a narrative water quality objective requires a site-specific evaluation of those constituents that have the potential to impact water quality and beneficial uses. The Basin Plan states that when compliance with a narrative objective is required to protect specific beneficial uses, the Central Valley Water Board will, on a case-by-case basis, adopt numerical limitations in order to implement the narrative objective.
42. In the absence of specific numerical water quality limits, the Basin Plan methodology is to consider any relevant published criteria. General salt tolerance guidelines, such as *Water Quality for Agriculture* by Ayers and Westcot and similar references indicate that yield reductions in nearly all crops are not evident when irrigation water has an EC less than 700  $\mu\text{mhos/cm}$ . There is, however, an eight- to ten-fold range in salt tolerance for agricultural crops and the appropriate salinity values to protect agriculture in the Central Valley are considered on a case-by-case basis. It is possible to achieve full yield potential with waters having EC up to 3,000  $\mu\text{mhos/cm}$  if the proper leaching fraction is provided to maintain soil salinity within the tolerance of the crop.

### **Antidegradation Analysis**

43. State Water Resources Control Board Resolution 68-16 ("Policy with Respect to Maintaining High Quality Waters of the State") (hereafter Resolution 68-16) prohibits degradation of groundwater unless it has been shown that:
  - a. The degradation is consistent with the maximum benefit to the people of the state.
  - b. The degradation will not unreasonably affect present and anticipated future beneficial uses.
  - c. The degradation does not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives, and
  - d. The discharger employs best practicable treatment or control (BPTC) to minimize degradation.

44. Degradation of groundwater by some of the typical waste constituents associated with discharges from a winery, after effective source control, treatment, and control measures are implemented, is consistent with the maximum benefit to the people of the state. The economic prosperity of valley communities and associated industry is of maximum benefit to the people of the State, and provides sufficient justification for allowing the limited groundwater degradation that may occur pursuant to this Order.
45. The Discharger has been monitoring groundwater quality at the site since 2001. Based on the data available, it is not possible to determine pre-1968 groundwater quality. Therefore, determination of compliance with Resolution 68-16 for this facility must be based on existing background groundwater quality.
46. Constituents of concern that have the potential to degrade groundwater include salts and nutrients. For the purpose of this evaluation, TDS is representative of overall salinity. Salts and nutrients as discussed below are based on data collected during 2001 through July 2013 prior to the abandonment of wells MW1 through MW6:

Constituent	Average Concentrations			
	Effluent <sup>1</sup>	Background Groundwater <sup>2</sup>	Downgradient Groundwater <sup>3</sup>	Potential Water Quality Objective
TDS (mg/L)	2,058 (FDS 916)	622 to 625	789 to 1,056	500-1,500 <sup>5</sup>
Nitrate Nitrogen (mg/L)	8.6	18 to 20	9 to 38	10 <sup>4</sup>

<sup>1</sup> Flow weighted average from January 2012 through October 2014.

<sup>2</sup> Compiled from MW2 and MW4; data collected from June 2001 through May 2010.

<sup>3</sup> Compiled from MW1, MW3, MW5 and MW6; data collected from June 2001 through July 2013.

<sup>4</sup> Primary Maximum Contaminant Level.

<sup>5</sup> Secondary Maximum Contaminant Level range, Recommended level = 500; Upper level = 1000 mg/L; Short term level = 1500 mg/L.

- a. **Total Dissolved Solids.** The average TDS concentrations in the downgradient wells ranged from 789 to 1,056 mg/L, which are greater than the average TDS concentration of 623 mg/L in the background wells. The discharge has degraded groundwater for TDS and has caused exceedance of the secondary MCL of 1,000 mg/L in the downgradient well MW3.

After completion of the proposed improvements, the wastewater FDS concentration is expected to be similar to the current level. The current effluent FDS of 916 mg/L is still greater than the background groundwater average TDS concentration. However, the FDS loading rate will be reduced from current 4,170 to 1,800 lbs/acre/year due to increased land application areas. This Order includes a time schedule in the Provisions that requires the Discharger to submit and implement a *Salinity Evaluation and Minimization Plan*. The Plan shall include proposals for influent salinity reduction.

- b. **Nitrate.** For nutrients such as nitrate, the potential for groundwater degradation depends on wastewater quality; crop uptake, and the ability of the vadose zone below the LAAs to support nitrification and denitrification to convert the nitrogen to nitrogen gas before it reaches the water table. Most of the nitrogen in the process wastewater is present as TKN, which can readily mineralize and convert to nitrate (with some loss via ammonia volatilization) in the LAAs. Background groundwater quality is poor with respect to nitrogen and exceeds the primary MCL of 10 mg/L. Nitrate nitrogen concentrations in the downgradient wells ranged from 9 to 38 mg/L. After completion of proposed improvements, the effluent total nitrogen concentration is expected to decrease from current 24 to 7 mg/L, which will be less than the Primary MCL of 10 mg/L for nitrate as nitrogen; the total nitrogen loading rate is projected to be 13 lb/acre/year, which is less than crop demand for vineyards. Therefore, the discharge is not likely to degrade groundwater quality for nitrogen in the future.
- c. **Manganese.** Based on the character of water supply and nature of typical winery operations, wastewater at the site is not expected to contain elevated manganese concentrations. However as noted in previous findings, excessive BOD loading rates can deplete oxygen, resulting in anoxic conditions that can solubilize naturally occurring metals in soil. Groundwater manganese concentrations had not been monitored in wells MW1 through MW6. Since October 2014, manganese data have been collected in the replacement monitoring wells MW2D through MW7D and elevated manganese concentrations have been observed in some downgradient wells, especially in MW5D immediately downgradient of the rapid infiltration basins. The Discharger's 29 February 2016 Comments on Tentative WDRs states that the past eight rounds of groundwater monitoring (from October 2014 through November 2015) clearly indicate that the ongoing discharge of untreated wastewater has degraded groundwater quality for manganese in the immediate vicinity of the rapid infiltration basins.

Based on the planned improvements to the wastewater management system and expanded LAAs, groundwater quality with respect to manganese is expected to improve over time. Therefore, this Order sets a groundwater limitation that prohibits any statistically significant increase in manganese concentrations in any compliance well; includes a time schedule in the Provisions that requires the Discharger to complete the proposed improvements; and requires monitoring of manganese in the groundwater monitoring wells.

- d. **Iron.** Based on the character of water supply and nature of typical winery operations, wastewater at the site is not expected to contain elevated iron concentrations. However, excessive BOD loading rates can deplete oxygen, resulting in anoxic conditions that can solubilize naturally occurring metals in soil. Groundwater iron concentrations had not been monitored in the monitoring wells MW1 through MW6. Since October 2014, iron data have been collected in the

new wells MWD2 through MWD7 and elevated iron concentrations have been observed in some downgradient wells, especially in MW5D immediately downgradient of the rapid infiltration basins. The Discharger's 29 February 2016 Comments on Tentative WDRs states that the past eight rounds of groundwater monitoring (from October 2014 through November 2015) clearly indicate that the ongoing discharge of untreated wastewater has degraded groundwater quality for iron in the immediate vicinity of the rapid infiltration basins.

Based on the planned improvements to the wastewater management system and expanded LAAs, groundwater quality with respect to iron is expected to improve over time. Therefore, this Order sets a groundwater limitation that prohibits any statistically significant increase in iron concentrations in any compliance well; includes a time schedule in the Provisions that requires the Discharger to complete the proposed improvements; and requires monitoring of iron in the groundwater monitoring wells.

47. The Discharger provides treatment and control of the discharge that incorporates:
  - a. Proposed wastewater treatment system. Process wastewater will receive some treatment prior to discharge. Reduced BOD loading rates will also alleviate potentially reducing conditions in the LAAs.
  - b. Proposed additional LAAs that will reduce the salinity and nutrient loading rates.
48. With respect to TDS, an unacceptable degree of groundwater degradation has occurred. Therefore this Order does not authorize any continued degradation as a result of the discharge or other activity at the winery beyond that which exists today for those constituents. The Groundwater Limitations are effective immediately and allow no degradation beyond existing groundwater quality in any compliance monitoring well and this Order requires intra-well analysis of compliance well groundwater monitoring data to determine compliance with the Groundwater Limitations.
49. This Order also requires implementation of upgrades and any additional measures that will be required to comply with the Groundwater Limitations of this Order, and which are expected to result in significant improvements in the shallow groundwater quality beneath the site. This Order imposes effluent and mass loading rate limitations and contains a time schedule for the implementation of additional treatment or control to ensure that the highest water quality consistent with the maximum benefit to the people of the State will be achieved while minimizing any degradation that may occur pending completion of the required tasks. Following completion of the time schedule, this Order will be reopened if necessary to reconsider effluent limitations and other requirements to comply with Resolution 68-16. Based on the existing record, the discharge authorized by this Order is consistent with the antidegradation provisions of Resolution 68-16.

### Other Regulatory Considerations

50. In compliance with Water Code section 106.3, 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 discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.
51. Based on the threat and complexity of the discharge, the facility is determined to be classified as 2B as defined below:
- a. Category 2 threat to water quality: "Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance."
  - b. Category B complexity, defined as: "Any discharger not included [as Category A] that has physical, chemical, or biological treatment systems (except for septic systems with subsurface disposal) or any Class 2 or Class 3 waste management units."
52. Title 27 of the California Code of Regulations (hereafter Title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste. However, Title 27 exempts certain activities from its provisions. Discharges regulated by this Order are exempt from Title 27 pursuant to provisions that exempt domestic sewage, wastewater, and reuse. Title 27, section 20090 states in part:

The following activities shall be exempt from the SWRCB-promulgated provisions of this subdivision, so long as the activity meets, and continues to meet, all preconditions listed:

(b) Wastewater - Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields if the following conditions are met:

- (1) the applicable RWQCB has issued WDRs, reclamation requirements, or waived such issuance;
- (2) the discharge is in compliance with the applicable water quality control plan;  
and
- (3) the wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22 of this code as a hazardous waste.

(f) Soil Amendments - Use of nonhazardous decomposable waste as a soil amendment pursuant to applicable best management practices, provided that RWQCBs may issue waste discharge or reclamation requirements for such use.

53. The discharge authorized herein, and the treatment and storage facilities associated with the discharge, are exempt from the requirements of Title 27. The current unlined wastewater ponds, future aerated ponds and LAAs are exempt pursuant to Title 27, section 20090(b) because they are discharges of wastewater to land and:
- a. The Central Valley Water Board is issuing WDRs;
  - b. This Order prescribes requirements that will ensure compliance with the Basin Plan; and
  - c. The wastewater discharged to the LAAs does not need to be managed as hazardous waste.
54. Although the discharge is exempt from Title 27, the statistical data analysis methods of Title 27, section 20415(e) are appropriate for determining whether the discharge complies with Groundwater Limitations specified in this Order.
55. The State Water Board adopted Order 97-03-DWQ (NPDES General Permit CAS000001) specifying waste discharge requirements for discharges of storm water associated with industrial activities, and requiring submittal of a Notice of Intent by all affected industrial dischargers. Because storm water that falls on outdoor processing areas is directed to the wastewater system, the Discharger is not required to obtain coverage under Order 97-03-DWQ.
56. Water Code section 13267(b) states:  
In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposes to discharge within its region ... shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

The technical reports required by this Order and the attached Monitoring and Reporting Program (MRP) R5-2016-0031 are necessary to ensure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

57. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells (hereafter DWR Well Standards), as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 94-81* (December 1981). These standards, and any more stringent standards adopted by the state or county pursuant to Water Code section

13801, apply to all monitoring wells used to monitor the impacts of wastewater storage or disposal governed by this Order.

58. Construction of the wastewater treatment system, expansion of the existing land application areas, and the land application of waste thereto constitutes an expansion of the discharge that triggers the CEQA environmental review process. The Central Valley Water Board, as lead agency, developed an Initial Study and Negative Declaration based on information provided by the Discharger in the RWD. The Board determined that the project would not cause any significant environmental impacts if operated in compliance with this Order and adopted a Negative Declaration on 21 April 2016.
59. Pursuant to Water Code section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.
60. The Central Valley Flood Protection Board requires encroachment permits for any work done in in a "regulated stream," designated floodway, and/or on any federal flood control project levee, including the placement, construction, reconstruction, removal, or abandonment of any landscaping, culvert, bridge, conduit, fence, projection, fill, embankment, building, structure, obstruction, encroachment or works of any kind, and including the planting, excavation, or removal of vegetation, and any repair or maintenance that involves cutting into the levee, wholly or in part, within an area for which there is an adopted plan of flood control. Pixley Slough between 8 Mile Road and Bear Creek is a regulated stream, as identified in California Code of Regulations, title 23, article 8, Table 8.1. Though Pixley Slough runs through the facility regulated by this Order, the portion of Pixley Slough that is considered a "regulated stream" under the jurisdiction of the Central Valley Flood Protection Board is well downstream of the facility.

### **Public Notice**

61. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.
62. The Discharger and interested agencies and persons have been notified of the Central Valley Water Board's intent to prescribe waste discharge requirements for this discharge, and they have been provided an opportunity to submit written comments and an opportunity for a public hearing.
63. All comments pertaining to the discharge were heard and considered in a public hearing.

**IT IS HEREBY ORDERED** that Order 71-037 is rescinded and, pursuant to Water Code sections 13263 and 13267, the Goldstone Land Company, LLC, and Kurt and Sandra Kautz,

their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted hereunder, shall comply with the following:

### A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. Discharge of waste classified as 'hazardous', as defined in the California Code of Regulations, title 23, section 2510 et seq., is prohibited.
3. Discharge of waste classified as 'designated', as defined in CWC Section 13173, in a manner that causes violation of groundwater limitations, is prohibited.
4. Effective on the date of Executive Officer approval of *Wastewater System Improvement Phase II Completion Report* submitted pursuant to Provision H.1.g, bypass around, or overflow from the wastewater treatment system is prohibited, except as allowed by Standard Provision E.2 of the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*.
5. Discharge of waste at a location or in a manner different from that described in the Findings is prohibited.
6. Discharge of toxic substances into any wastewater treatment system or land application areas such that biological treatment mechanisms are disrupted is prohibited.
7. Discharge of domestic wastewater to the process wastewater treatment system is prohibited.
8. Discharge of process wastewater to the domestic wastewater septic system is prohibited.

### B. Flow Limitations

1. **Effectively immediately**, the blend of winery process wastewater and storm water entering into the influent flow meter shall not exceed the following limits:

<u>Flow Measurement</u>	<u>Flow Limit</u>
Total Annual Flow <sup>1</sup>	25 MG
<u>Maximum Average Daily Flow <sup>2</sup></u>	0.144 MGD

<sup>1</sup> As determined by the total flow for the calendar year.

<sup>2</sup> As determined by the total flow during the calendar month divided by the number of days in that month.

2. Effective on the date of Executive Officer approval of *Wastewater System Improvement Phase II Completion Report* submitted pursuant to Provision H.1.g, the blend of winery process wastewater and storm water entering into the influent flow meter shall not exceed the limits specified in the following table. Approval is dependent on submittal of a water balance capacity analysis demonstrating that the as-built hydraulic capacity of the facility is consistent with the flow limits.

Influent Flow Measurement	Flow Limit
Total Annual Flow <sup>1</sup>	30 MG
Maximum Average Daily Flow <sup>2</sup>	0.171 MGD

<sup>1</sup> As determined by the total flow for the calendar year.

<sup>2</sup> As determined by the total flow during the calendar month divided by the number of days in that month.

**C. Effluent and Mass Loading Limitations**

1. **Effective immediately**, the blend of treated wastewater, storm water, and supplemental irrigation water applied to the vineyard LAAs shall not exceed the following concentration and mass loading limits:

Constituent	Units	Daily Maximum	Annual Average
BOD Mass Loading	lb/ac/day	300	--
Flow-Weighted Average Fixed Dissolved Solids Concentration	mg/L	--	700 <sup>1</sup>

<sup>1</sup> Based on total flow and concentration for each source of water discharged.

Compliance with the above requirements shall be determined as specified in the Monitoring and Reporting Program.

2. Effective on the date of Executive Officer approval of *Wastewater System Improvement Phase II Completion Report* submitted pursuant to Provision H.1.g, the treated wastewater applied to the rapid infiltration basins shall not exceed the following concentration and mass loading limits:

Constituent	Units	Daily Maximum	Annual Average
BOD Mass Loading	lb/ac/day	100	--
Flow-Weighted Average Fixed Dissolved Solids Concentration	mg/L	--	800
Flow-Weighted Average Nitrate as Nitrogen Concentration	mg/L	--	10

Compliance with the above requirements shall be determined as specified in the Monitoring and Reporting Program.

- Effective on the date of Executive Officer approval of *Wastewater System Improvement Phase II Completion Report* submitted pursuant to Provision H.1.g, the blend of treated wastewater, storm water, and supplemental irrigation water applied to the vineyard LAAs shall not exceed the following concentration and mass loading limits:

Constituent	Units	Daily Maximum	Annual Average
BOD Mass Loading	lb/ac/day	50	--
Flow-Weighted Average Fixed Dissolved Solids Concentration	mg/L	--	500 <sup>1</sup>

<sup>1</sup> Based on total flow and concentration for each source of water discharged.

Compliance with the above requirements shall be determined as specified in the Monitoring and Reporting Program.

#### D. Discharge Specifications

- No waste constituent shall be released, discharged, or placed where it will cause a violation of the Groundwater Limitations of this Order.
- Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
- The discharge shall remain within the permitted waste treatment/containment structures and land application areas at all times.
- The Discharger shall operate all systems and equipment to optimize the quality of the discharge.
- All conveyance, treatment, storage, and disposal systems shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
- Objectionable odors shall not be perceivable beyond the limits of the property where the waste is generated, treated, and/or discharged at an intensity that creates or threatens to create nuisance conditions.
- As a means of discerning compliance with Discharge Specification 6, the dissolved oxygen (DO) content in the upper one foot of any wastewater pond shall not be less than 1.0 mg/L for three consecutive sampling events. If the DO in any single

pond is below 1.0 mg/L for three consecutive sampling events, the Discharger shall report the findings to the Regional Water Board in writing within 10 days and shall include a specific plan to resolve the low DO results within 30 days.

8. The Discharger shall operate and maintain all treatment ponds and rapid infiltration basins sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. Unless a California-registered civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard in any treatment pond shall never be less than two feet (measured vertically from the lowest possible point of overflow). As a means of management and to discern compliance with this requirement, the Discharger shall install and maintain in each treatment pond a permanent staff gauge with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.
9. Wastewater treatment, storage, and disposal ponds or structures shall have sufficient capacity to accommodate allowable wastewater flow, design seasonal precipitation, and ancillary inflow and infiltration during the winter while ensuring continuous compliance with all requirements of this Order. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.
10. On or about **1 October** of each year, available capacity shall at least equal the volume necessary to comply with Discharge Specifications 8 and 9.
11. All ponds including the treatment ponds and the rapid infiltration basins and open containment structures shall be managed to prevent breeding of mosquitoes. Specifically:
  - a. An erosion control program shall be implemented to ensure that small coves and irregularities are not created around the perimeter of the water surface.
  - b. Weeds shall be minimized through control of water depth, harvesting, or herbicides.
  - c. Dead algae, vegetation, and debris shall not accumulate on the water surface.
  - d. The Discharger shall consult and coordinate with the local Mosquito Abatement District to minimize the potential for mosquito breeding as needed to supplement the above measures.
12. Newly constructed or rehabilitated berms or levees (excluding internal berms that separate ponds or control the flow of water within a pond) shall be designed and constructed under the supervision of a California Registered Civil Engineer.

13. Effective on the date of Executive Officer approval of *Wastewater System Improvement Phase II Completion Report* submitted pursuant to Provision H.1.g, storage of residual solids, including pomace and/or diatomaceous earth on an area not equipped with means to prevent storm water infiltration is prohibited. All solids must be stored in a paved area with a leachate collection system. All leachate from the solid storage area shall be directed to the wastewater treatment system for further treatment. Discharge of leachate from the solid storage area to the rapid infiltration basins is prohibited.
14. The Discharger shall maintain the integrity of all pond liners and repair all significant leaks as needed. Every five years beginning on the date of Executive Officer approval of *Wastewater System Improvement Phase II Completion Report* submitted pursuant to Provision H.1.g, the Discharger shall test the integrity of all pond liners and repair all significant leaks in accordance with an approved workplan pursuant to Provision H.1.f.
15. The Discharger may use treated wastewater for other beneficial uses, such as dust control on farm roads around the existing and proposed vineyard LAAs, and additional 1,004 acres of agricultural lands upon approval of *Effluent Reuse Plan* submitted pursuant to Provision H.1.h.
16. Discharge of any of the following wastewater streams to the process wastewater treatment system or land application areas is prohibited:
  - a. Neutralization brine;
  - b. Flotation brine;
  - c. Boiler blowdown, and
  - d. Water softener regeneration brine.

### E. Groundwater Limitations

Release of waste constituents from any portion of the facility shall not cause groundwater to:

1. Contain any of the specified constituents in a concentration statistically greater than the maximum allowable concentration tabulated below. The wells to which these requirements apply are specified in the Monitoring and Reporting Program.

Constituent	Maximum Allowable Concentration <sup>1</sup>
TDS	Current groundwater quality or 1,000 mg/L, whichever is greater
Dissolved Iron	Current groundwater quality or 300 µg/L, whichever is greater

Constituent	Maximum Allowable Concentration <sup>1</sup>
Dissolved Manganese	Current groundwater quality or 50 µg/L, whichever is greater
Nitrate as Nitrogen	Current groundwater quality or 10 mg/L, whichever is greater

<sup>1</sup> "Current groundwater quality" means the quality of groundwater as evidenced by monitoring completed as of the date of this Order for each downgradient well.

2. For all compliance monitoring wells, except as specified in 1 above, contain constituents in concentrations that exceed either the Primary or Secondary MCLs established in Title 22 of the California Code of Regulations.
3. For all compliance monitoring wells, exhibit a pH of less than 6.5 or greater than 8.4 pH units.
4. For all compliance monitoring wells, except as specified in 1 above, contain taste or odor-producing constituents, toxic substances, or any other constituents in concentrations that cause nuisance or adversely affect beneficial uses.

Compliance with these limitations shall be determined annually using approved statistical methods.

**F. Vineyard Land Application Area Specifications**

1. Wastewater shall be mainly applied to the vineyard LAAs. Wastewater shall only be applied to the rapid infiltration basins as a backup disposal method.
2. Application of waste constituents to LAAs shall be at reasonable agronomic rates to preclude creation of a nuisance or degradation of groundwater, considering the crop, soil, climate, and irrigation management system. The annual nutritive loading of the LAAs, including the nutritive value of organic and chemical fertilizers and of the wastewater and diatomaceous earth, shall not exceed the annual crop demand.
3. Any irrigation runoff (tailwater) shall be confined to the LAAs and shall not enter any surface water drainage course or storm water drainage system.
4. Discharge of process wastewater to any LAA not having a fully functional tailwater/runoff control system is prohibited.
5. Irrigation of the LAAs shall occur only when appropriately trained personnel are monitoring the system.

6. LAAs shall be inspected as frequently as necessary to ensure continuous compliance with the requirements of this Order.
7. Discharge to the LAAs shall not be performed during rainfall or when the ground is saturated after rainfall.
8. Discharge of storm water runoff from the LAAs to off-site land or surface water drainage courses is allowed if the Discharger complies with Specification F.7 above.
9. The LAAs shall be managed to prevent breeding of mosquitoes. In particular:
  - a. There shall be no standing water 48 hours after irrigation ceases;
  - b. Tailwater ditches shall be maintained essentially free of emergent, marginal, and floating vegetation; and
  - c. Low-pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store recycled water.

#### **G. Solids Disposal Specifications**

Solids refer to screenings, pomace, diatomaceous earth and other residual or separable waste solids associated with the winemaking process.

1. Winery sludge and other solids shall be removed from sumps, screens, wastewater ponds, etc. as needed to ensure optimal operation and adequate hydraulic capacity. Winery solids drying operations, if any, shall be designed and operated to prevent leachate generation and will include provisions to return leachate to the wastewater system.
2. Any handling and storage of waste solids at the facility shall be temporary and controlled and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate the groundwater limitations of this Order.
3. Diatomaceous earth may be discharged to vineyard LAAs in accordance with the Vineyard Land Application Area Specifications of this Order.
4. If removed from the site (excluding residual solids removal as animal feed), sludge, solid waste, and residual solids shall be disposed of in a manner approved by the Executive Officer and consistent with Title 27, division 2.
5. Any proposed change in solids use or disposal practice shall be reported in writing to the Executive Officer at least 90 days in advance of the change.

## H. Provisions

1. The following reports shall be submitted pursuant to CWC section 13267 and shall be prepared as described in Provision H4:
  - a. By **1 July 2016**, the Discharger shall submit a *Groundwater Monitoring Well Installation Workplan* that describes plans to install at least one new background monitoring well upgradient of all existing or planned LAAs. The workplan shall be prepared in accordance with, and include the items listed in, the first section of Attachment D: "*Requirements for Monitoring Well Installation Workplans and Monitoring Well Installation Reports*", which is attached hereto and made part of this Order by reference. The groundwater monitoring wells shall be designed to yield samples representative of the uppermost portion of the first aquifer.
  - b. By **1 July 2016**, the Discharger shall submit a *Groundwater Limitations Compliance Assessment Plan*. The plan shall describe and justify the statistical methods that are proposed to determine compliance with the Groundwater Limitations of this Order for the constituents listed in the Monitoring and Reporting Program. As described in the MRP, compliance shall be determined annually based on intra-well statistical analysis that evaluates temporal trends based on all historic data collected at each compliance well that uses methods prescribed in Title 27, Section 20415(e)(7 and 8).
  - c. By **1 October 2016**, the Discharger shall submit a *Wastewater System Improvement Phase I Completion Report* that certifies that the Vineyards 3 and 4 are fully functional and ready to receive wastewater in compliance with the requirements of this Order. The report shall include as-built drawings of the new LAAs and tailwater collection systems.
  - d. By **1 January 2017**, the Discharger shall submit a *Groundwater Monitoring Well Installation Report* that describes the installation of the new groundwater monitoring wells required by Provision H.1.a. The report shall be prepared in accordance with, and including the items listed in, the second section of Attachment D: "Monitoring Well Workplan and Monitoring Well Installation Report Guidance," which is attached hereto and made part of this Order by reference. The report shall describe the installation and development of all new monitoring wells, and explain any deviation from the approved workplan.
  - e. By **1 March 2017**, the Discharger shall submit and implement a *Salinity Evaluation and Minimization Plan* to address the sources of salinity discharged to the wastewater treatment system. The Plan shall include proposals for influent salinity reduction. At a minimum, the plan shall meet the following requirements outlined in CWC Section 13263.3(d)(3):

- i. An estimate of all of the sources of pollutants contributing, or potentially contributing, to the loadings of salinity in the treatment plant influent including water supply, water softeners, and other residential, commercial and industrial salinity sources.
  - ii. An analysis of the methods that could be used to prevent the discharge of salinity into the facility, including application of local limits to industrial or commercial dischargers regarding pollution prevention techniques, public education and outreach, or other innovative and alternative approaches to reduce discharges of the pollutant to the facility. The analysis shall also identify sources, or potential sources, not within the ability or authority of the Discharger to control.
  - iii. An estimate of salinity load reductions that may be identified through the methods identified in CWC Section 13263.3(d)(3)(ii).
  - iv. A plan for monitoring the results of the salinity pollution prevention program.
  - v. A description of the tasks, costs, and time required to investigate and implement various elements in the salinity pollution prevention plan.
  - vi. A statement of the Discharger's salinity pollution prevention goals and strategies, including priorities for short-term and long-term action, and a description of the Discharger's intended pollution prevention activities for the immediate future.
  - vii. A description of the Discharger's existing salinity pollution prevention programs.
  - viii. An analysis, to the extent feasible, of any adverse environmental impacts, including cross-media impacts or substitute chemicals that may result from the implementation of the pollution prevention program.
  - ix. An analysis, to the extent feasible, of the costs and benefits that may be incurred to implement the pollution prevention program.
  - x. Progress to date in reducing the concentration and/or mass of salinity in the discharge.
  - xi. Progress in implementation of the plan shall be reported each year in the Annual Monitoring Report required pursuant to Monitoring and Reporting Program R5-2016-0031.
- f. By **1 April 2017**, the Discharger shall submit a *Pond Design Work Plan and Construction Quality and Assurance Plan*. The Pond Design Work Plan shall specify the number and size of trickling filters. The Pond Design Work Plan shall also specify the final design of the new wastewater storage ponds and liner systems, including complete pond geometry, liner materials, liner

thickness, seaming methods, and details of anchorage and typical penetrations. The Construction Quality and Assurance Plan shall describe the specific construction quality assurance procedures and test methods that the Discharger proposes to ensure and verify that the liner subgrade preparation, installation and seaming will comply with the specifications; the entire liner is tested following installation to verify that all seams and liner penetrations are leak-free at the time of acceptance; and the entire liner is inspected for visible material defects and construction damage such as holes or tears prior to acceptance. The Construction Quality and Assurance Plan shall also specify the means and methods to evaluate integrity of all geosynthetic liner systems for future maintenances.

- g. By **1 February 2019**, the Discharger shall submit a *Wastewater System Improvements Phase II Completion Report* that documents the construction of the two aeration ponds and certifies that the ponds are fully functional and ready to receive wastewater in compliance with the requirements of this Order. The report shall also certify that improvements have been completed as described in Finding 15 and that the LAAs are fully functional and ready to receive wastewater in compliance with the requirements of this Order. The report shall include as-built drawings of the wastewater treatment systems. The report shall include final dimensions and liner specifications of the two aeration ponds and a Liner Construction Quality Assurance Report that documents all construction observation, testing, and test results for the pond lining system.
  - h. At least **60 days** prior to use of treated wastewater for other beneficial uses, such as dust control on farm roads around the existing and proposed vineyard LAAs, and additional 1,004 acres of agricultural lands, the Discharger shall submit an *Effluent Reuse Plan*. The Plan shall describe how and where water will be reused and for what purposes, and how it will be managed to prevent discharge of the water off site or into surface water drainage courses. The Plan shall include a map delineating the areas that treated wastewater will be reused on the site.
2. At least **180 days** prior to any sludge removal and disposal from the wastewater treatment ponds, the Discharger shall submit a *Sludge Monitoring and Cleanout Plan*. The plan shall include a detailed plan for sludge removal, drying, and disposal. The plan shall specifically describe the phasing of the project, measures to be used to control runoff or percolate from the sludge as it is drying, and a schedule that shows how all dried sludge will be land applied to the LAAs or removed from the site prior to the onset of the rainy season (1 October).
  3. A discharger whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment, collection, and disposal facilities. The projections shall be made in

January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the discharger shall notify the Central Valley Water Board by **31 January**.

4. In accordance with California Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall bear the professional's signature and stamp.
5. The Discharger shall submit the technical reports and work plans required by this Order for consideration by the Executive Officer, and incorporate comments the Executive Officer may have in a timely manner, as appropriate. Unless expressly stated otherwise in this Order, the Discharger shall proceed with all work required by the foregoing provisions by the due dates specified.
6. The Discharger shall comply with Monitoring and Reporting Program R5-2016-0031, which is part of this Order, and any revisions thereto as ordered by the Executive Officer. The submittal dates of Discharger self-monitoring reports shall be no later than the submittal date specified in the MRP.
7. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements", dated 1 March 1991, which are attached hereto and made part of this Order by reference. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."
8. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports. On or before each report due date, the Discharger shall submit the specified document to the Central Valley Water Board or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, then the Discharger shall state the reasons for such noncompliance and provide an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board in writing when it returns to compliance with the time schedule. Violations may result in enforcement action, including Central Valley Water Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.

9. The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by the Discharger when the operation is necessary to achieve compliance with the conditions of this Order.
10. The Discharger shall use the best practicable cost-effective control technique(s) including proper operation and maintenance, to comply with this Order.
11. As described in the Standard Provisions, the Discharger shall report promptly to the Central Valley Water Board any material change or proposed change in the character, location, or volume of the discharge.
12. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."
13. At least **90 days** prior to termination or expiration of any lease, contract, or agreement involving disposal or recycling areas or off-site reuse of effluent, used to justify the capacity authorized herein and assure compliance with this Order, the Discharger shall notify the Central Valley Water Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.
14. In the event of any change in control or ownership of the facility, the Discharger must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.
15. To assume operation as Discharger under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Central Valley Water Board, and a statement. The statement shall comply with the signatory paragraph of Standard Provision B.3 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the CWC. If approved by the Executive Officer, the transfer request will be submitted to the Central Valley Water Board for its consideration of transferring the ownership of this Order at one of its regularly scheduled meetings.

16. A copy of this Order including the MRP, Information Sheet, Attachments, and Standard Provisions, shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
17. The Central Valley Water Board will review this Order periodically and will revise requirements when necessary.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

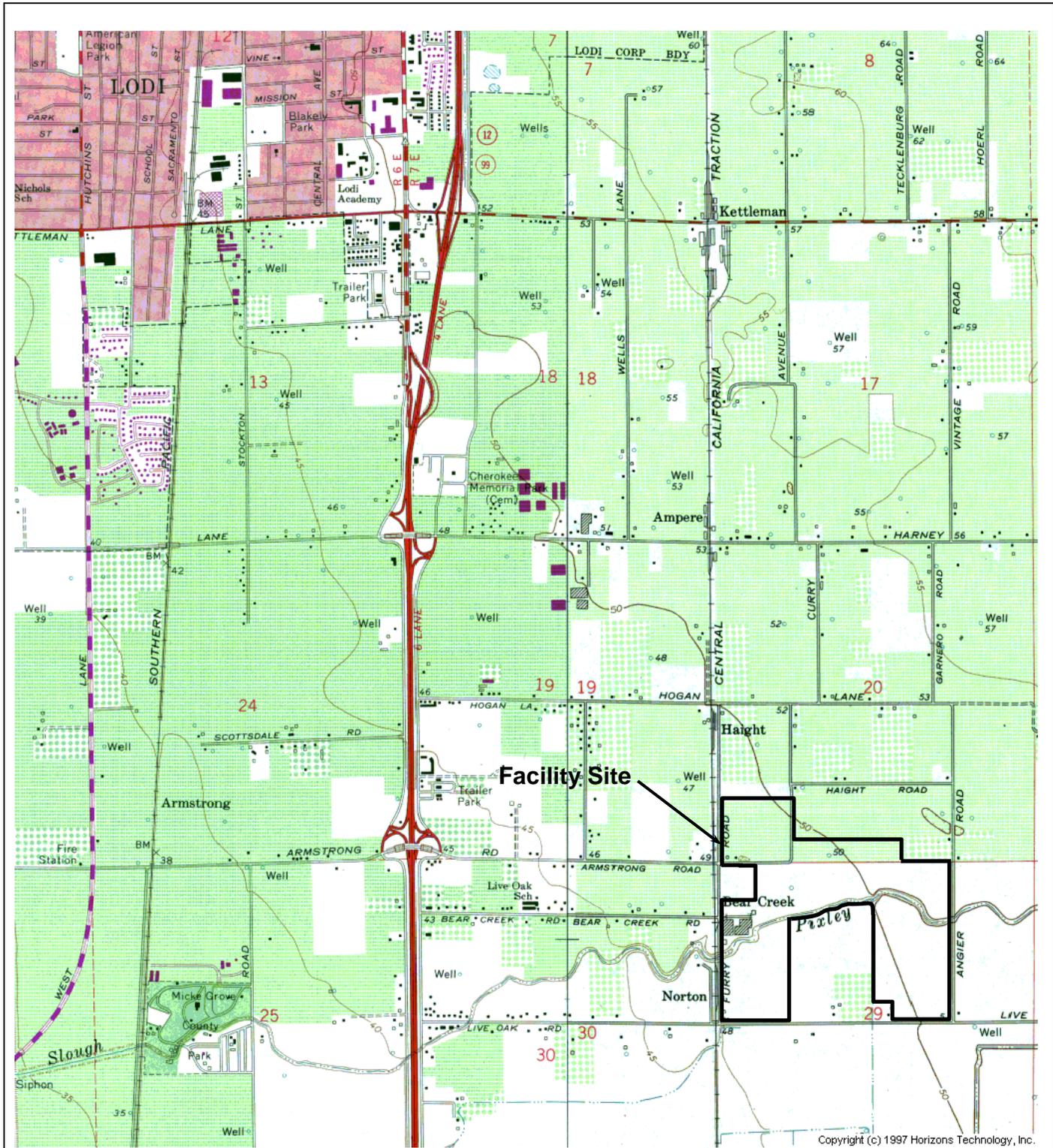
[http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality](http://www.waterboards.ca.gov/public_notices/petitions/water_quality)

or will be provided upon request.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full true, and correct copy of an Order adopted by the California Regional Water Quality Control Board on 21 April 2016.



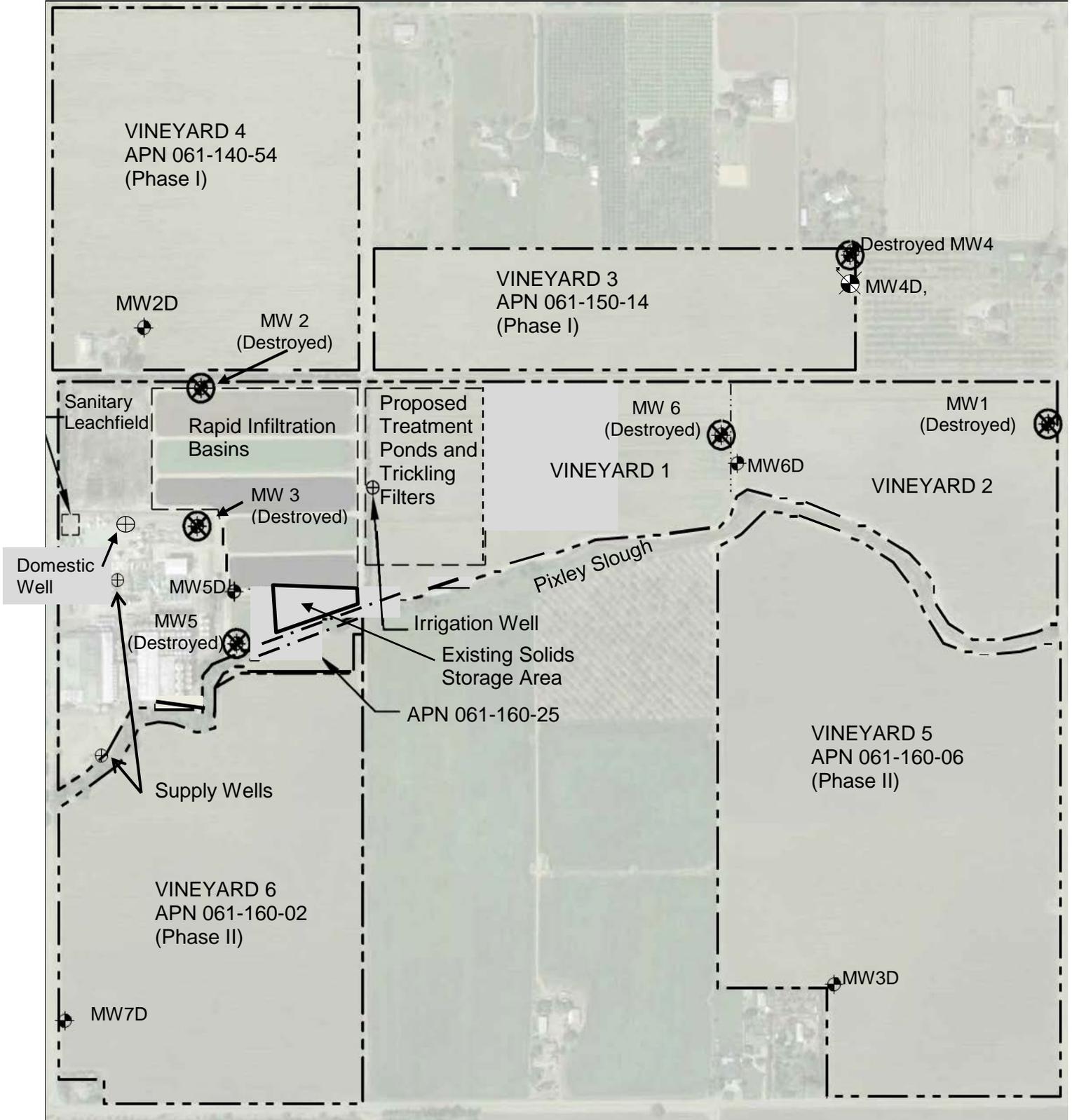
PAMELA C. CREEDON, Executive Officer



Drawing Reference:  
 LODI SOUTH  
 U.S.G.S TOPOGRAPHIC MAP  
 7.5 MINUTE QUADRANGLE

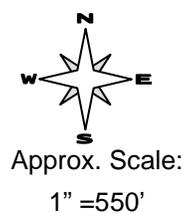
**SITE LOCATION MAP**  
 GOLDSTONE LAND COMPANY, LLC  
 KURT AND SANDRA KAUTZ  
 BEAR CREEK WINERY  
 SAN JOAQUIN COUNTY

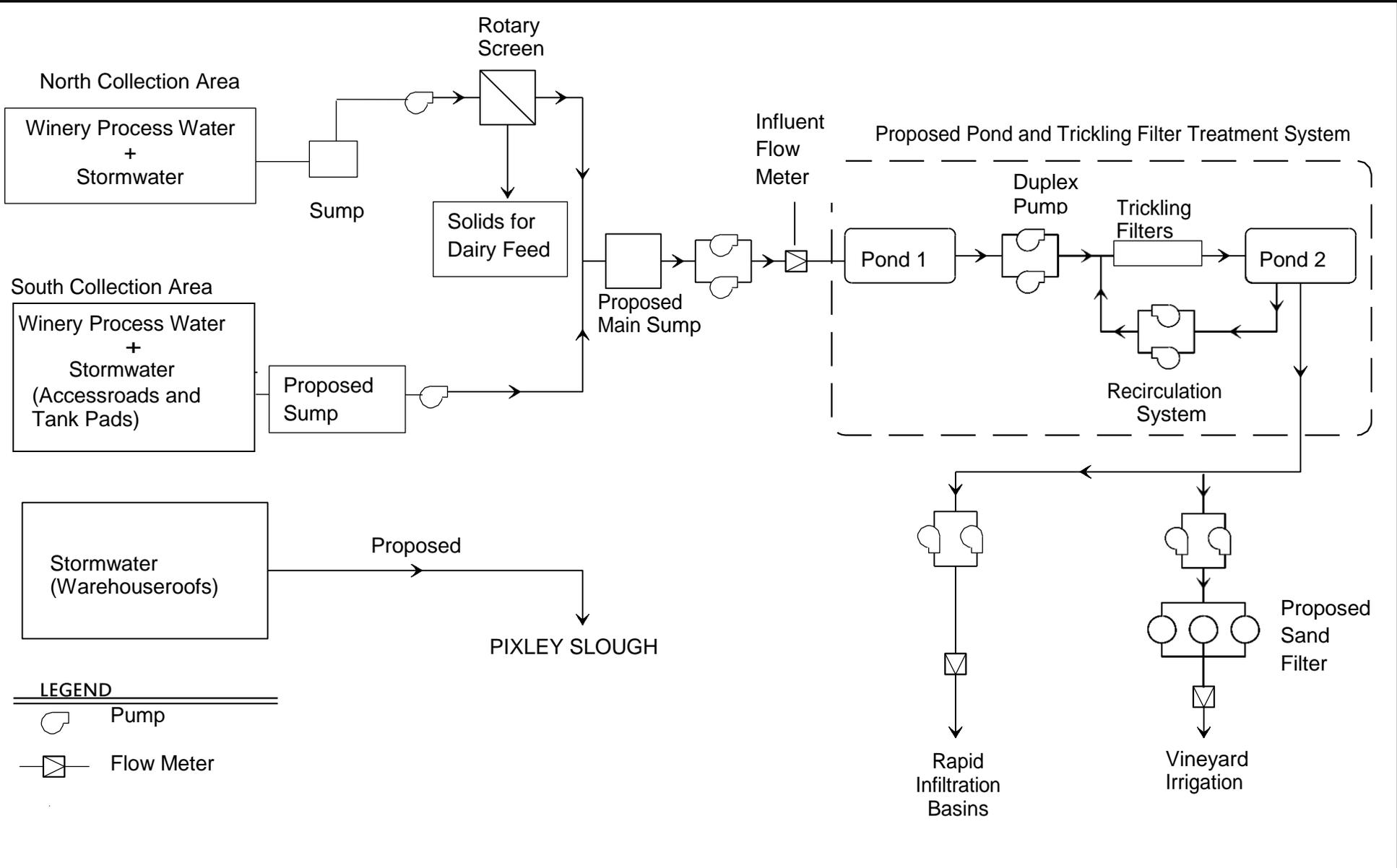
approx. scale  
 1 in. = 1/2 mi.



Drawing Reference:  
RWD, Bear Creek Winery, December  
2014

**LOCATION MAP**  
GOLDSTONE LAND COMPANY, LLC  
KURT AND SANDRA KAUTZ  
BEAR CREEK WINERY  
SAN JOAQUIN COUNTY





**LEGEND**  
 Pump  
 Flow Meter

Drawing Reference:  
 RWD, December 2014

**PROPOSED WASTEWATER SYSTEM SCHEMATIC**  
 GOLDSTONE LAND COMPANY, LLC, KURT AND SANDRA KAUTZ  
 BEAR CREEK WINERY

**ORDER R5-2016-0031**  
**ATTACHMENT D**  
**REQUIREMENTS FOR MONITORING WELL INSTALLATION WORKPLANS AND**  
**MONITORING WELL INSTALLATION REPORTS**

Prior to installation of groundwater monitoring wells, the Discharger shall submit a workplan containing, at a minimum, the information listed in Section 1, below. Wells may be installed after staff approve the workplan. Upon installation of the monitoring wells, the Discharger shall submit a well installation report which includes the information contained in Section 2, below. All workplans and reports must be prepared under the direction of, and signed by, a registered geologist or civil engineer licensed by the State of California.

**SECTION 1 - Monitoring Well Installation Workplan and**  
**Groundwater Sampling and Analysis Plan**

The monitoring well installation workplan shall contain the following minimum information:

- A. General Information:
- Purpose of the well installation project
  - Brief description of site specific geologic and hydrogeologic conditions
  - Proposed monitoring well locations and rationale for well locations
  - Topographic map showing facility location, roads, and surface water bodies
  - Large scaled site map showing all existing on-site wells, proposed wells, surface drainage courses, surface water bodies, buildings, waste handling facilities, utilities, and major physical and man-made features
- B. Drilling Details:
- On-site supervision of drilling and well installation activities
  - Description of drilling equipment and techniques
  - Equipment decontamination procedures
  - Soil sampling intervals (if appropriate) and logging methods
- C. Monitoring Well Design (in narrative and/or graphic form):
- Diagram of proposed well construction details
    - Borehole diameter
    - Casing and screen material, diameter, and centralizer spacing (if needed)
    - Type of well caps (bottom cap either screw on or secured with stainless steel screws)
    - Anticipated depth of well, length of well casing, and length and position of perforated interval
    - Thickness, position and composition of surface seal, sanitary seal, and sand pack
    - Anticipated screen slot size and filter pack
- D. Well Development (not to be performed until at least 48 hours after sanitary seal placement):
- Method of development to be used (i.e., surge, bail, pump, etc.)
  - Parameters to be monitored during development and record keeping technique
  - Method of determining when development is complete
  - Disposal of development water
- E. Well Survey (precision of vertical survey data shall be at least 0.01 foot):
- Identify the Licensed Land Surveyor or Civil Engineer that will perform the survey
  - Datum for survey measurements

List well features to be surveyed (i.e. top of casing, horizontal and vertical coordinates, etc.)

F. Schedule for Completion of Work

G. Appendix: Groundwater Sampling and Analysis Plan (SAP)

The Groundwater SAP shall be included as an appendix to the workplan, and shall be utilized as a guidance document that is referred to by individuals responsible for conducting groundwater monitoring and sampling activities.

Provide a detailed written description of standard operating procedures for the following:

- Equipment to be used during sampling
- Equipment decontamination procedures
- Water level measurement procedures
- Well purging (include a discussion of procedures to follow if three casing volumes cannot be purged)
- Monitoring and record keeping during water level measurement and well purging (include copies of record keeping logs to be used)
- Purge water disposal
- Analytical methods and required reporting limits
- Sample containers and preservatives
- Sampling
  - General sampling techniques
  - Record keeping during sampling (include copies of record keeping logs to be used)
  - QA/QC samples
- Chain of Custody
- Sample handling and transport

## **SECTION 2 - Monitoring Well Installation Report**

The monitoring well installation report must provide the information listed below. In addition, the report must also clearly identify, describe, and justify any deviations from the approved workplan.

A. General Information:

Purpose of the well installation project

Brief description of local geologic and hydrogeologic conditions encountered during installation of the wells

Number of monitoring wells installed and copies of County Well Construction Permits

Topographic map showing facility location, roads, surface water bodies

Scaled site map showing all previously existing wells, newly installed wells, surface water bodies, buildings, waste handling facilities, utilities, and other major physical and man-made features.

B. Drilling Details (in narrative and/or graphic form):

On-site supervision of drilling and well installation activities

Drilling contractor and driller's name

Description of drilling equipment and techniques

Equipment decontamination procedures

Soil sampling intervals and logging methods

## Well boring log

- Well boring number and date drilled
- Borehole diameter and total depth
- Total depth of open hole (same as total depth drilled if no caving or back-grouting occurs)
- Depth to first encountered groundwater and stabilized groundwater depth
- Detailed description of soils encountered, using the Unified Soil Classification System

## C. Well Construction Details (in narrative and/or graphic form):

## Well construction diagram, including:

- Monitoring well number and date constructed
- Casing and screen material, diameter, and centralizer spacing (if needed)
- Length of well casing, and length and position of perforated interval
- Thickness, position and composition of surface seal, sanitary seal, and sand pack
- Type of well caps (bottom cap either screw on or secured with stainless steel screws)

## E. Well Development:

Date(s) and method of development

How well development completion was determined

Volume of water purged from well and method of development water disposal

Field notes from well development should be included in report

## F. Well Survey (survey the top rim of the well casing with the cap removed):

Identify the coordinate system and datum for survey measurements

Describe the measuring points (i.e. ground surface, top of casing, etc.)

Present the well survey report data in a table

Include the Registered Engineer or Licensed Surveyor's report and field notes in appendix

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2016-0031

FOR

GOLDSTONE LAND COMPANY, LLC  
KURT AND SANDRA KAUTZ  
BEAR CREEK WINERY  
SAN JOAQUIN COUNTY

This monitoring and reporting program (MRP) incorporates requirements for monitoring of the process wastewater, wastewater ponds, land application areas, solid waste, and groundwater. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer.

All wastewater samples should be representative of the volume and nature of the discharge. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form. Wastewater flow monitoring shall be conducted continuously using a flow meter and shall be reported in cumulative gallons per day.

Field test instruments (such as pH and dissolved oxygen) may be used provided that:

1. The operator is trained in the proper use of the instrument;
2. The instruments are field calibrated prior to each use;
3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. Field calibration reports are submitted as described in the "Reporting" section of this MRP.

Analytical procedures shall comply with the methods and holding times specified in the following: Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater (EPA); Test Methods for Evaluating Solid Waste (EPA); Methods for Chemical Analysis of Water and Wastes (EPA); Methods for Determination of Inorganic Substances in Environmental Samples (EPA); Standard Methods for the Examination of Water and Wastewater (APHA/AWWA/WEF); and Soil, Plant and Water Reference Methods for the Western Region (WREP 125). Approved editions shall be those that are approved for use by the United States Environmental Protection Agency or the California Department of Public Health's Environmental Laboratory Accreditation Program. The Discharger may propose alternative methods for approval by the Executive Officer. Where technically feasible, laboratory reporting limits shall be lower than the applicable water quality objectives for the constituents to be analyzed.

### **INFLUENT FLOW MONITORING**

The monitoring shall be performed at the headworks. Influent BOD concentration shall be monitored after the wastewater treatment system is installed. Influent monitoring shall include the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Daily Flow	gallons	Continuous	Daily <sup>1</sup>	Monthly
Monthly Average Flow	gpd	Calculated	Monthly	Monthly
BOD <sup>2</sup>	mg/L	Grab	Weekly	Monthly

<sup>1</sup> Continuous monitoring requires daily meter reading or automated data collection.

<sup>2</sup> 5-day biochemical oxygen demand.

### WASTEWATER TREATMENT POND MONITORING

Effective on the date of Executive Officer approval of *Wastewater System Improvement Phase II Completion Report* submitted pursuant to Provision H.1.g, the Discharger shall monitor the treatment ponds. Freeboard shall be measured vertically from the surface of the pond water to the lowest elevation of the surrounding berm and shall be measured to the nearest 0.1 foot. The Discharger shall monitor each of the ponds as specified below:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Dissolved Oxygen <sup>1</sup>	mg/L	Grab	Weekly	Monthly
Freeboard	feet (±0.1)	Measurement	Weekly	Monthly
pH	Std.	Grab	Weekly	Monthly
Berm Condition <sup>2</sup>	--	Observation	Weekly	Monthly
Odors	--	Observation	Weekly	Monthly

<sup>1</sup> Samples shall be collected at a depth of one foot, opposite the inlet.

<sup>2</sup> Pond containment berms shall be observed for signs of seepage or surfacing water along the exterior toe.

### WINERY WASTEWATER MONITORING

Prior to installation of wastewater treatment system, wastewater samples shall be collected prior to discharge to the rapid infiltration basins and vineyards used as Land Application Areas (LAAs). Effective on the date of Executive Officer approval of *Wastewater System Improvement Phase II Completion Report* submitted pursuant to Provision H.1.g, the effluent shall be monitored after the trickling system prior to discharge to the rapid infiltration basins and the vineyard LAAs. Monitoring shall include, at a minimum, the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
pH	Std.	Grab	Weekly	Monthly
BOD <sub>5</sub> <sup>1</sup>	mg/L	Grab	Monthly	Monthly
Total Dissolved Solids	mg/L	Grab	Monthly	Monthly
Fixed Dissolved Solids	mg/L	Grab	Monthly	Monthly
Chloride	mg/L	Grab	Monthly	Monthly

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Sodium	mg/L	Grab	Monthly	Monthly
Nitrate as Nitrogen	mg/L	Grab	Monthly	Monthly
Total Kjeldahl Nitrogen	mg/L	Grab	Monthly	Monthly
Standard Minerals <sup>2,3</sup>	mg/L	Grab	Annually	Annually

<sup>1</sup> Five-day, 20° Celsius Biochemical Oxygen Demand.

<sup>2</sup> Standard Minerals shall include at least the following compounds: arsenic, boron, calcium, dissolved iron, dissolved manganese, magnesium, potassium, sulfate, total alkalinity (including alkalinity series), and hardness.

<sup>3</sup> Samples shall be filtered prior to preservation using a 0.45µ filter.

### **RAPID INFILTRATION BASIN AND LAND APPLICATION AREA MONITORING**

Wastewater shall be mainly applied to the vineyard LAAs. Wastewater shall only be applied to the rapid infiltration basins as a backup disposal method.

The Discharger shall monitor the discharge to the rapid infiltration basins and vineyard LAAs. Monitoring of the rapid infiltration basins and LAAs shall be conducted daily during operation and the results shall be included in the monthly monitoring report. Evidence of erosion, runoff, or the presence of nuisance conditions shall be noted in the report. Wastewater and supplemental irrigation water monitoring data shall be used, as applicable, to calculate loading rates at the rapid infiltration basins and vineyard LAAs. Monitoring shall include, at a minimum, the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Total wastewater flow to Rapid Infiltration Basins	Gallons	Continuous <sup>1</sup>	Daily	Monthly
BOD <sub>5</sub> loading rate for Rapid Infiltration Basins <sup>5</sup>	Lbs/acre/day	Calculated	Monthly	Monthly
Total wastewater flow to vineyard LAAs	Gallons	Continuous <sup>1</sup>	Daily	Monthly
Total supplemental irrigation flow to vineyard LAAs	Gallons	Run Time	Daily	Monthly
Applied acreage <sup>2</sup>	Acres	Calculated	Daily	Monthly
Combined wastewater and supplemental irrigation application rate for vineyard LAAs	Inches	Calculated	Daily	Monthly
Total nitrogen loading rate for vineyard LAAs <sup>3</sup>	Lbs/acre	Calculated	Monthly	Monthly
Flow weighted FDS concentration for vineyard LAAs <sup>4</sup>	mg/L	Calculated	Monthly	Monthly

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
BOD <sub>5</sub> loading rate for vineyard LAAs <sup>5</sup>	Lbs/acre/day	Calculated	Monthly	Monthly

- <sup>1</sup> Continuous monitoring requires daily meter reading or automated data collection.
- <sup>2</sup> Land application areas used shall be identified. If a portion of the area is used, the acreage used in the calculation shall be estimated.
- <sup>3</sup> Total nitrogen applied from all sources, including wastewater, fertilizers, supplemental irrigation water, lees and diatomaceous applied to the vineyard LAAs.
- <sup>4</sup> From wastewater and supplemental irrigation water.
- <sup>5</sup> Report application cycle average and maximum daily loading.

### SUPPLEMENTAL IRRIGATION WATER MONITORING

The Discharger shall monitor the supplemental water used to irrigate vineyard LAAs. Monitoring shall include, at a minimum, the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling and Reporting Frequency</u>
Total Dissolved Solids	mg/L	Grab	Annually
Fixed Dissolved Solids	mg/L	Grab	Annually
Chloride	mg/L	Grab	Annually
Sodium	mg/L	Grab	Annually
Nitrate as Nitrogen	mg/L	Grab	Annually

### GROUNDWATER MONITORING

Prior to construction and/or sampling of any groundwater monitoring wells, the Discharger shall submit plans and specifications to the Board for review and approval. Once installed, all new wells shall be added to the MRP and shall be sampled and analyzed according to the schedule below. All samples shall be collected using EPA approved methods and water table elevations shall be calculated and used to determine groundwater gradient and direction of flow.

Prior to wastewater discharge to Vineyard 3 and Vineyard 4, the following table designates the compliance wells:

MW3D, MW5D, MW6D, MW7D

After land application of wastewater to Vineyard 3 and Vineyard 4, the following table designates the compliance wells:

MW2D, MW3D, MW5D, MW6D, MW7D

The Groundwater Limitations set forth in Section E of the WDRs shall apply to the specific compliance monitoring wells in the table above.

Prior to sampling, depth to groundwater elevations shall be measure and the wells shall be purged at least three well volumes until temperature, pH, and electrical conductivity have stabilized. Low or no-purge sampling methods are acceptable, if described in an approved Sampling and Analysis Plan. Depth to groundwater shall be measured to the nearest 0.01 feet. Groundwater monitoring for all monitoring wells shall include, at a minimum, the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling and Reporting Frequency</u>
Depth to Groundwater	±0.01 feet	Measurement	Quarterly
Groundwater Elevation <sup>1</sup>	±0.01 feet	Calculated	Quarterly
Gradient	feet/feet	Calculated	Quarterly
Electrical Conductivity	µmhos/cm	Grab	Quarterly
Total Dissolved Solids	mg/L	Grab	Quarterly
Bicarbonate	mg/L	Grab	Quarterly
Nitrate as Nitrogen	mg/L	Grab	Quarterly
pH	mg/L	Grab	Quarterly
Chloride	mg/L	Grab	Quarterly
Sodium	mg/L	Grab	Quarterly
Dissolved Iron <sup>2</sup>	µg/L	Grab	Quarterly
Dissolved Manganese <sup>2</sup>	µg/L	Grab	Quarterly
Standard Minerals <sup>2,3</sup>	mg/L	Grab	Annually

<sup>1</sup> Groundwater elevation shall be determined based on depth-to-water measurements from a surveyed measuring point elevation on the well.

<sup>2</sup> Samples shall be filtered prior to preservation using a 0.45µ filter.

<sup>3</sup> Standard Minerals shall include at least the following compounds: arsenic, boron, calcium, magnesium, potassium, sulfate, total alkalinity (including alkalinity series), and hardness.

### SLUDGE AND/OR BIOSOLIDS MONITORING

Lees and diatomaceous earth applied to the vineyard LAAs shall be analyzed annually to determine the total nitrogen loading rate.

Sludge and/or biosolids samples shall be analyzed to determine the total concentration in mg/Kg for the following constituents each time sludge is removed from any pond:

Arsenic	Lead	Nickel
Cadmium	Mercury	Selenium
Copper	Molybdenum	Zinc
Total Nitrogen	Total Solids	

Sludge and/or biosolids monitoring records shall be retained for a minimum of five years in accordance with 40 CFR, Part 503.17. A log shall be kept of sludge quantities generated and of handling, application, and disposal activities. The frequency of entries is discretionary; however, the log should be complete enough to serve as a basis to report sludge monitoring.

### EFFLUENT AND MASS LOADING CALCULATIONS

- a. The mass of BOD applied to each LAA on a daily basis shall be calculated using the following formula:

$$M = \frac{8.345(CV)}{A}$$

Where:  $M$  = mass of BOD applied to an LAA in lb/ac/day  
 $C$  = concentration of BOD in mg/L based on most recent monitoring result  
 $V$  = volume of wastewater applied to the LAA in millions of gallons per day  
 $A$  = area of the LAA irrigated in acres  
8.345 = unit conversion factor

- b. The mass of total nitrogen applied to each LAA on an annual basis shall be calculated using the following formula and compared to published crop demand for the crops actually grown:

$$M = \sum_{i=1}^{12} \frac{(8.345(C_i V_i) + M_x)}{A}$$

Where:  $M$  = mass of nitrogen applied to LAA in lb/ac/yr  
 $C_i$  = Monthly average concentration of total nitrogen for month  $i$  in mg/L  
 $V_i$  = volume of wastewater applied to the LAA during calendar month  $i$  in million gallons  
 $A$  = area of the LAA irrigated in acres  
 $i$  = the number of the month (e.g., January = 1, February = 2, etc.)  
 $M_x$  = nitrogen mass from other sources (e.g., fertilizer and compost) in pounds  
8.345 = unit conversion factor

- c. The flow-weighted average annual FDS concentration shall be calculated using the following formula:

$$C_a = \frac{\sum_{i=1}^{12} [(C_{Pi} \times V_{Pi}) + (C_{Si} \times V_{Si})]}{\sum_{i=1}^{12} (V_{Pi} + V_{Si})}$$

- Where:  $C_a$  = Flow-weighted average annual FDS concentration in mg/L  
 $i$  = the number of the month (e.g., January = 1, February = 2, etc.)  
 $C_{Pi}$  = Monthly average wastewater FDS concentration for calendar month  $i$  in mg/L  
 $C_{Si}$  = Monthly average supplemental irrigation water FDS concentration for calendar month  $i$  in mg/L (considering each supplemental source separately)  
 $V_{Pi}$  = volume of wastewater applied to LAAs during calendar month  $i$  in million gallons  
 $V_{Si}$  = volume of supplemental irrigation water applied to LAAs during calendar month  $i$  in million gallons (considering each supplemental source separately)

## REPORTING

The Central Valley Water Board has gone to a paperless office system. All regulatory documents, submissions, materials, data, monitoring reports, and correspondence should be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50MB should be emailed to: [centralvalleysacramento@waterboards.ca.gov](mailto:centralvalleysacramento@waterboards.ca.gov)

Documents that are 50 MB or larger should be transferred to a CD, DVD, or flash drive and mailed to the following address:

Central Valley Regional Water Quality Control Board  
ECM Mailroom  
11020 Sun Center Drive, Suite 200  
Rancho Cordova, California 95670

Please include a transmittal sheet that includes the following:

Attention: Compliance/Enforcement Section  
Goldstone Land Company, LLC  
Kurt And Sandra Kautz  
Bear Creek Winery  
San Joaquin County  
Place ID: 209017

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., influent monitoring, groundwater monitoring well, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported in the next scheduled monitoring report.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all groundwater monitoring reports shall be prepared under the direct supervision of a registered professional engineer or geologist and signed by the registered professional.

#### **A. Monthly Monitoring Reports**

Monthly monitoring reports shall be submitted to the Central Valley Water Board by the **1st day of the second month** following the end of the reporting period (e.g. the January monthly report is due by 1 March). The monthly reports shall include the following:

1. Results of influent, winery wastewater, land application area and rapid infiltration basin, and treatment pond monitoring;
2. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;
3. If requested by staff, copies of laboratory analytical report(s);
4. A calibration log verifying calibration of all hand held monitoring instruments and devices used to comply with the prescribed monitoring program;
5. The total pounds of nitrogen (year to date) from all sources (wastewater, fertilizers, supplemental irrigation water, and lees and diatomaceous) applied to the vineyard land application areas, and
6. The total pounds lees and diatomaceous earth applied to the land application areas for the month and year to date.
7. The area and the volume of treated wastewater used for other beneficial use on the site, such as dust control.

## **B. Quarterly Monitoring Reports**

The Discharger shall establish a quarterly groundwater sampling schedule such that samples are obtained approximately every three months. Regardless of the monitoring frequency, the monitoring data obtained during each calendar quarter shall be compiled into quarterly monitoring reports, which shall be submitted to the Regional Board by the **1<sup>st</sup> day of the second month after each monitored interval** (e.g. the January-March quarterly monitoring report is due by May 1<sup>st</sup>).

The Quarterly Monitoring Report shall include the following:

1. Results of all groundwater monitoring completed during the calendar quarter;
2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with the WDRs, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater; method of purging and parameters measured before, during, and after purging. Low or no-purge sampling methods are acceptable if described in an approved Sampling and Analysis Plan;
3. For each groundwater monitoring event, calculation of groundwater elevations, an assessment of groundwater flow direction and gradient on the date of measurement, comparison with previous flow direction and gradient data, and discussion of seasonal trends if any;
4. Summary data tables of historical and current water table elevations and analytical results;
5. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum, and
6. Copies of laboratory analytical report(s) for groundwater monitoring.

## **C. Annual Monitoring Report**

The Annual Monitoring Report shall be submitted to the Central Valley Water Board by **1 February** each year. The Annual Monitoring Report shall include the following:

1. If requested by staff, tabular and graphical summaries of all data collected during the year;
2. The results of the annual monitoring for the groundwater and supplemental irrigation system;
3. Calculation of the following for each vineyard LAA along with supporting data and calculations:
  - a. The total hydraulic loading in inches (including wastewater and supplemental

- irrigation water as applicable);
- b. The total nitrogen loading in pounds per acre per year (including wastewater, fertilizer, supplemental irrigation water, and lees and diatomaceous applied to the LAAs as applicable);
  - c. Maximum BOD loading rates for both daily and cycle average loadings (including wastewater, fertilizer, supplemental irrigation water, and lees and diatomaceous applied to the LAAs as applicable), and
  - d. The flow weighted annual FDS concentration of water for the vineyard LAAs (including blend of treated wastewater, storm water, and supplemental irrigation water applied to the vineyard LAAs as applicable).
4. Calculation of the following for the rapid infiltration basins along with supporting data and calculations:
    - a. The total hydraulic loading in inches;
    - b. Maximum BOD daily loading rates;
    - c. The flow weighted annual FDS concentration of applied water, and
    - d. The flow weighted annual nitrate as nitrogen concentration of applied water.
  5. A comprehensive evaluation of the effectiveness of the past year's wastewater application operation in terms of odor control and groundwater protection, including consideration of application management practices (e.g., waste constituent and hydraulic loadings, application cycles, drying times, and cropping practices), and groundwater monitoring data;
  6. A description of the quantity of solid waste (lees, stems, pomace, etc.) generated and disposed of on the site. If solid waste, sludge, or lees waste is shipped offsite, then a description of the quantity of each waste shipped offsite and the location of the disposal site shall be included with the report;
  7. A statistical evaluation of the groundwater quality under the rapid infiltration basins and vineyard LAAs in accordance with the report submitted pursuant to Provision H.1.d of the WDRs and a comparison of the results to the groundwater limitations;
  8. A discussion of compliance and corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements, and
  9. A discussion of any data gaps or potential deficiencies/redundancies in the monitoring system or reporting program.

A transmittal letter shall accompany each self-monitoring report. The letter shall include a discussion of all violations of the WDRs or this MRP during the reporting period and actions taken or planned for correcting each violation. If the Discharger has previously submitted a report describing corrective actions taken and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. Pursuant to Section B.3 of the Standard Provisions and General Reporting Requirements, the transmittal

MONITORING AND REPORTING PROGRAM R5-2016-0031  
GOLDSTONE LAND COMPANY, LLC  
KURT AND SANDRA KAUTZ  
BEAR CREEK WINERY  
SAN JOAQUIN COUNTY

letter shall contain a statement by the Discharger or the Discharger' authorized agent certifying under penalty of perjury that the report is true, accurate and complete to the best of the signer's knowledge.

The Discharger shall implement the above monitoring program as of the date of this Order.

Ordered by:   
PAMELA C. CREEDON, Executive Officer

21 April 2016  
(Date)

LFU: March 2016

## INFORMATION SHEET

WASTE DISCHARGE REQUIREMENTS ORDER R5-2016-0031  
GOLDSTONE LAND COMPANY, LLC  
KURT AND SANDRA KAUTZ  
BEAR CREEK WINERY  
SAN JOAQUIN COUNTY

### Background

Bear Creek Winery has been in operation since 1934. The facility currently operates as a bulk winery. The winery's current crush production is approximately 50,000 tons of grapes annually. WDRs Order 71-037 was adopted by the Central Valley Water Board on 21 August 1970.

Bear Creek Winery currently does not have a wastewater treatment system. The winery currently discharges approximately 21.4 million gallons of wastewater per year to 9.2 acres of rapid infiltration basins and 38 acres of vineyard land application areas (LAAs). The Discharger proposed to install a wastewater treatment system and to increase LAAs by 31 August 2018.

### Existing Facility and Discharge

Historically, the winery discharged wastewater from wine making process and distillery operation to over 45 acres of land disposal area. In the early 1990's when the distillery was closed the winery continued to discharge process wastewater to 9.2 acres of rapid infiltration basins. The balance of the 45 acres was converted to Vineyards 1 and 2, which seasonably received process wastewater as irrigation water for the grape vines. Over the past several years, organic loading rates to the rapid infiltration basins have been excessive and have exceeded generally accepted loading rates for land disposal systems, especially during the crush season.

### Changes in the Discharge

The Discharger plans to install a wastewater treatment system and to increase vineyard LAAs to accommodate a production increase from 50,000 to 60,000 tons of grapes annually over the next ten years. The proposed modifications will be completed in phases as shown in the following table:

Proposed Improvement				
Phase	Production Capacity, tons/year	Peak Mouth Flow (MGD)	Annual Total Flow (MG)	Completion Schedule
Phase I	50,000	0.144	25	August 2016
Phase II	60,000	0.171	30	August 2018

Phase I: Vineyard LAAs will be expanded from 38.3 to 92.8 acres by adding Vineyards 3, and 4.

Phase II: The winery will increase production from 50,000 tons to 60,000 tons.

- a. Vineyard LAAs will be expanded from 92.8 to 185.3 acres by adding Vineyards 5 and 6.
- b. The Discharger proposed to install a treatment system consisting of a new main sump, two aerated lined ponds, an effluent pump and a trickling filter system.
- c. The Discharger will review the existing filtered solids storage area and may install a new storage area with liner and berm.
- d. Storm water runoff from warehouse roofs (77,300 square feet) will be diverted to the nearby drainage Pixley Slough in order to reduce storm water contribution to the wastewater collection system. It is estimated that approximately 0.7 million gallons of storm water runoff will be discharged to surface water during an average rainfall year. The Discharger has applied a separated storm water permit for this discharge.
- e. In the 29 February 2016 Comments on Tentative WDRs, the Discharger requested to use treated wastewater for other beneficial uses, such as dust control on farm roads around the existing and proposed vineyard LAAs, and additional 1,004 acres of agricultural lands owned by Kautz's family.

### **Legal Effect of Rescission of Prior WDRs or Orders on Existing Violations**

The Board's rescission of prior waste discharge requirements and/or monitoring and reporting orders does not extinguish any violations that may have occurred during the time those waste discharge requirements or orders were in effect. The Central Valley Water Board reserves the right to take enforcement actions to address violations of prior prohibitions, limitations, specifications, requirements, or provisions of rescinded waste discharge requirements or orders as allowed by law.

### **Discharge Prohibitions, Specifications and Provisions**

This Order includes a time schedule in the Provisions that requires the Discharger to submit an *Groundwater Monitoring Well Installation Workplan, Groundwater Monitoring Well Installation Report, Salinity Evaluation and Minimization Plan, Salinity Evaluation and Minimization Plan, Wastewater System Improvements Phase I Completion Report, Pond Design Work Plan and Construction Quality and Assurance Plan, Wastewater System Improvement Phase II Completion Report, and Effluent Reuse Plan.*

INFORMATION SHEET  
WASTE DISCHARGE REQUIREMENTS ORDER R5-2016-0031  
GOLDSTONE LAND COMPANY, LLC  
KURT AND SANDRA KAUTZ  
BEAR CREEK WINERY  
SAN JOAQUIN COUNTY

3

In addition, this Order prescribes effluent limitations for BOD mass loading, FDS and nitrate as nitrogen.

The Monitoring and Reporting Program is designed to verify compliance with effluent limitations, groundwater limitations, and operational requirements of the WDRs.

LF: 3/17/16