CALIFORNIA
SUSTAINABLE WINEGROWING
ALLIANCE

August 22, 2014

Mr. Matthias St. John, Executive Officer
California North Coast Regional Water Quality Control Board
5550 Skylane Boulevard, Suite A
Santa Rosa, CA 95403
VIA EMAIL: NorthCoast@waterboards.ca.gov

Dear Mr. St. John:

Thank you for the opportunity to comment on the Draft General Waste Discharge Requirements for Discharges of Wine, Beverage, and Food Processor Waste to Land (Draft WDR), and specifically on the requirements for the Facility-Specific Salt and Nutrient Management Plan (FSNMP). We would like the North Coast Regional Water Quality Control Board to recognize the California Code of Sustainable Winegrowing and/or Certified California Sustainable Winegrowing as a complete model of winery process water BMP program and as an alternative pathway to compliance, as detailed below.

The California Sustainable Winegrowing Alliance (CSWA) is a 501(c)(3) nonprofit organization incorporated in 2003 by Wine Institute and the California Association of Winegrape Growers (CAWG) to help winegrape growers and vintners track and continue to improve on the adoption of low impact, sustainable methods. CSWA's *California Code of Sustainable Winegrowing* (Code) is a comprehensive assessment tool for growers and vintners that covers 138 vineyard and 103 winery sustainable winegrowing best management practices (BMPs), many of which address objectives and requirements included in the Draft WDR. The Code was developed with a multi-stakeholder process that included growers, vintners, academics, extension, government agencies and NGOs and includes practices based on years of research and the best available science. A 3rd Edition of the Code was released in 2013 after an extensive two-year review process to update the practices. Since 2002, 1,800 vineyard and winery organizations, representing 72% of California's winegrape acreage and 74% of case production have used the Code to self-assess their operations.

Introduced in 2010, Certified California Sustainable Winegrowing (CCSW-Certified) grew out of the Code and provides third-party verification of a winery or vineyard's adoption of sustainable winegrowing best management practices and implementation of continuous improvement. A third-party auditor verifies accuracy of scores and completion of all certification requirements. To date, 196 vineyards (12.8% of statewide acreage) and 69 winery facilities (who produce 56% of the wine made in California) are Certified California Sustainable Winegrowing.

After a thorough review of the requirements for the draft Facility-Specific Salt and Nutrient Management Plan, it is clear that technical action in the plan are already covered by best management practices in the Code. The detailed comparison of the plan requirements against practices contained in the Code was shared with Water Board staff and is included in Appendix A. While each of the required BMPs for the FSNMP are covered by a relevant Code practice, in many cases, the requirement is covered by multiple Code practices. For instance, the requirement that the "FSNMP shall have a section addressing the sources of salt contributions to the process water stream (such as caustic or chlorinated cleaners) and best management practices taken to minimize those contributions" is covered by twelve specific practices in the Code. These include practices on vineyard water management, winery water conservation and quality, material handling and environmentally preferable purchasing (please see Appendix A for the detailed practices).

Use of the Code as a programmatic BMP's for process water would be highly efficient, fulfilling the NCRWQCB drafts intent, with minimal effort on the part of the Water Board, with broad support and management by CSWA.

CSWA urges the North Coast Regional Water Quality Control Board to recognize the California Code of Sustainable Winegrowing and/or Certified California Sustainable Winegrowing as a complete model of winery process water BMP program.

We would be pleased to continue discussions with Water Board staff to review this approach and discuss the details of how the Code and CCSW-Certified satisfies the FSNMP and BMP requirements in the Draft WDR.

Recognizing participation in these programs will not only help the Board meet the stated goals of the Draft WDR, but will also provide wineries with additional options for compliance.

Sincerely,

Allison Jordan
Executive Director

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Appendix A

Facility-Specific Salt and Nutrient Management Plan Requirements	CCSW Criteria Which Apply (and Minimum Satisfactory Category Score)	Comments
Overall		
The collection, treatment, storage or land application of process wastewater and non-hazardous, decomposable, processing solids shall not result in: (a) Degradation of groundwater or surface water (b) Contamination or pollution of groundwater or surface water (c) A condition of nuisance (CWC Section 13050) * Includes any degradation products or any constituents of soil mobilized by the interactions between applied materials and soil	10-4(3), 10-5(4), 11-4(3), 11-7(3), 12-2(2), 12-3(2)	*See Code Criteria Language for details on the CCSW criteria practices
The discharge of process wastewater to surface water is prohibited	10-5(2)	
The FSNMP shall have a section addressing the sources of salt contributions to the wastewater stream (such as caustic or chlorinated cleaners) and best management practices taken to minimize those contributions	5-2(2), 5-7(3), 10-4(3), 10-5(4), 10-8(3), 10-11(3), 10-12(3), 10-13(3), 11-3(3), 11-7(3), 11-9(3), 13-1(3)	
The FSNMP shall have a section addressing nutrients present in the treated wastewater, the land application area, agronomic application rates and land application practices taken to eliminate any potential discharges to surface water.	4-4(3)	
Waste Reduction Activities		
Salt and Pollutant Minimization component should identify all contributing sources of salts and other pollutants entering the process wastewater.	10-2(2), 10-4(3), 10-5(4), 10-8(3), 10-11(3), 10-12(3), 10-13(3), 11-3(3), 11-7(3), 11-9(3), 13-1(3)	
Salt and Pollutant Minimization component should identify steps that will be taken to reduce the amount of salts and pollutants such as dry sweeping, screening of floor drains, use of eco-friendly sanitation products, separation of highly concentrated salt waste streams from process wastewater, etc.	5-7(3), 10-4(3), 10-5(4), 10-7(2), 10-8(3), 10-11(3), 10-12(3), 10-13(3), 11-1(3), 11-3(3), 11-7(3), 11-9(3), 13-1(3)	
Land Application Activities		
The land application of treated process wastewater or non-hazardous, decomposable, processing solids shall not violate any applicable local, state or federal laws / regulations or contribute to an exceedence of any applicable water quality objective in the Basin Plan or of any state or federal water quality criteria	4-3(3), 10-4(3), 10-5(4), 10-8(3), 10-12(3), 10-13(3), 11-3(3), 11-9(3), 13-1(3)	All criteria in the code start with legal compliance for Category 1.

Nutrient Budget calculations showing all sources of nutrients used by land application area and demonstrating that nutrients are applied at rates that are protective of water quality. Calculations must be reviewed annually and updated if there are significant changes. Initial nutrient budget may be based on default values if site-specific information is not available. Subsequent nutrient budgets shall be based on site-specific analytical data for soil, process wastewater, process irrigation water, solid non-hazardous, decomposable processor waste, other sources of nutrients and plant tissue.	4-4(3), 4-8(3), 5-2(2)	
The FSNMP must describe methods by which process wastewater and solid non-hazardous, decomposable processor waste is applied to the land application areas and describes Best Management Practices (BMPs) that will be implemented to protect surface water and groundwater	10-5(4)	
The FSNMP must describe the associated sampling program including sampling locations, sampling frequency, sample collection and preservation procedures	4-2(3)	
The FSNMP must identify the analytical laboratory utilized and the analyses to be conducted for soil, soil amendments, process water, irrigation water, plant tissue, etc. If this information is in the MRP, the FSNMP can reference the MRP	4-1(3), 4-2(2), 5-2(3)	
Facility shall inspect the land application area(s) at least once daily during each irrigation event. Evidence of erosion, field saturation, runoff or the presence of nuisance conditions shall be noted in a field log and included as part of the monitoring report.	5-3(3)	
Nutrient budget shall include the rate of nutrient applications (pounds of nitrogen per acre) in order to meet each crop's needs for nitrogen and phosphorus without exceeding the application rates that will protect water quality. The rate of nutrient applications shall be based on realistic yield goals for each crop in each land application area.	4-3(3), 4-4(3)	
Nutrient budget shall include the quantity of soil amendments and process wastewater to be applied shall be based on the nutrient content of the material, the characteristics of the material and the site conditions. In determining the quantity to apply, the Facility shall consider all sources of nutrients including irrigation water, commercial fertilizers and previous crops.	4-2(4), 5-2(2)	

Nutrient budget shall include the timing of application based on seasonal and climatic conditions, the growth stage of the crop and the availability of water. The anticipated maximum time between land application events (storage period) shall be used to determine the needed storage capacity for solids and process water.	4-4(3)	
Nutrient budget shall include the method of soil amendment and process wastewater application for each crop in each land application area shall be based on site-specific conditions and shall minimize the discharge of sediments, nutrients and salts from the application area.	5-3(3)	
Nutrient application rates shall not approach a site's maximum ability to contain one or more nutrients through soil adsorption.	4-4(3), 4-5(2)	
If Facility exceeds the nutrient amount needed by crops, the Facility must implement management practices that will prevent impacts to surface water or groundwater due to application of excess nutrients. This may include: Obtaining access to additional land for nutrient application, exporting solid waste to a permitted composting facility or landfill.	4-4(3)	
Nitrogen application rates shall not result in total nitrogen applied to land application areas exceeding nitrogen application in each location as recommended by UCCE, NRCS, other local information, or 1.4 times the anticipated nitrogen removal in forage.	4-4(3)	*If nitrogen is applied, irrigation must be managed to ensure that applied nitrogen does not leach below the vine rooting zone and possibly contaminate groundwater
If total nitrogen to a land application area exceeds the budgeted rate, the Facility shall either revise the nutrient budget to prevent exceedences or demonstrate and record that the application rates have not contaminated surface or ground water.	4-4(3)	*If nitrogen is applied, irrigation must be managed to ensure that applied nitrogen does not leach below the vine rooting zone and possibly contaminate groundwater

Applications of nitrogen exceeding the initial recommendations are allowable if the following conditions are met: 1. Soil Plant Available Nitrogen (PAN) testing or plant tissue testing has been conducted and indicates that additional nitrogen is required to obtain crop yield 2. The amount of additional nitrogen applied is based on the soil or tissue testing; and is consistent with UCCE or NRCS guidelines or written recommendations from a nutrient management specialist or Certified Crop Advisor 3. The form, timing, and method of application facilitates timely nitrogen availability to the crop 4. Records are maintained documenting the need for the additional applications	4-4(3)	*If nitrogen is applied, irrigation must be managed to ensure that applied nitrogen does not leach below the vine rooting zone and possibly contaminate groundwater
Application of Phosphorus and Potassium at agronomic levels, along with reasonable erosion control and runoff control measures, will normally prevent water quality problems. In some instances, other best management practices may need to be included in the FSNMP.	4-4(3), 4-5(3), 4-8(3), 5-2(2), 5-3(2), 10-4(3), 10-5(4), 10-6(3)	Why does a Winery WDR deal with a Vineyard application. No phosphorus source in WWW

Code Criteria Language

	Category 4	Category 3	Category 2	Category 1
4.1 Plant Tissue Analysis	A sample (bloomtime/ petiole or leaf blade) was taken and sent for lab analysis every 1-2 years in select critical areas And Detected nutritional problems in any area were followed up with an additional sample(s) following all soil treatments to check for changes (e.g., multiple sampling in problem areas or sampling at different times of the year).	A sample (bloomtime/ petiole or leaf blade) was taken and sent for lab analysis every 2-3 years in select critical areas.	A sample (bloomtime/ petiole or leaf blade) was taken and sent for lab analysis only when there was a suspected nutritional problem.	No plant tissue samples have been taken in the last 3 years in any of the vineyards.
4.2 Soil Nutrient Analysis	A soil sample has been taken and sent to a lab for analysis within the last 4 years, or within 2 years if undergoing a soil amendment program And Soil variations were considered when collecting the samples And Lab analyses were interpreted and applied to vineyard management decisions And Records of test locations and results were kept.	A soil sample has been taken and sent to a lab for analysis within the last 6 years, or within 3 years if undergoing a soil amendment program And Soil variations were considered when collecting the samples And Lab analyses were interpreted and applied to vineyard management decisions.	A soil sample has been taken and sent to a lab for analysis within the last 6 years, or every 3-5 years if undergoing a soil amendment program.	A soil sample has not been taken in the last 6 years.
4.3 Nutrient Management	Vine vigor, fruit quality, leaf symptoms, vineyard history, wine quality, and water quality test results were factored into decisions made for nutrient applications And Results of plant tissue analysis were used as a guide for nutrient application decisions And Site-specific nutrient applications (i.e., content and amounts) were made.	Vine vigor, fruit quality, leaf symptoms, and vineyard history were factored into decisions made for nutrient applications And Results of plant tissue analysis were used as a guide for nutrient application decisions.	Vine vigor, fruit quality, leaf symptoms, and vineyard history were factored into decisions made for nutrient applications.	Nutrient applications were based on the time of year or on another established program(s) that does not incorporate sitespecific information.

4.4 Nitrogen Management	Soil analysis was done within the last 3 years and plant tissue analysis had been done within the last year And Nitrogen was applied only if justified by plant tissue analysis and inadequate vine vigor*, and preventative measures were taken to limit volatilization such as watering in, disking, or applied before rainfall And Nitrogen was only applied when vines can best utilize it And Local conditions and water quality were considered in deciding which form of nitrogen to apply And If plant tissue analysis and vine vigor showed that nitrogen applications were not necessary, none was applied, but cover crops may have been used to either increase or decrease long term nitrogen needs.	Soil or plant tissue analysis was done within the last 3 years And Nitrogen was applied only if justified by plant tissue analysis and inadequate vine vigor*, and preventative measures were taken to limit volatilization such as watering in, disking, or applied before rainfall And Nitrogen was only applied when vines can best utilize it And Local conditions and water quality were considered in deciding which form of nitrogen to apply.	Soil or plant tissue analysis was done within the last 6 years And Nitrogen was applied only if justified by plant tissue analysis, inadequate vine vigor* and/or balanced with nutrients removed by the crop And Nitrogen was only applied when vines can best utilize it.	Soil or plant tissue analysis was not done within the last 6 years Or Nitrogen was applied every year without prior analysis or regardless of vine vigor.
4.5 Fertigation	Fertilization was done by fertigation if necessary** based on soil and vine nutrient status And The frequency and timing of applications were calculated to meet vine demand, prevent leaching of fertilizer below the root zone, and for what was seasonally correct and justified for the operation.	Fertilization was done by fertigation if necessary** based on soil and vine nutrient status And Timing of applications was seasonally correct.	Fertigation was done without first checking the soil or vine nutrient status And Timing of applications was seasonally correct.	Fertigation was done without first checking the soil or vine nutrient status And Timing of applications was based on convenience rather than best practice.

4.6 Amendments for Water Penetration	If water penetration was poor (water puddles and runs off when subsurface soil was dry), a long-term plan to correct the problem was developed and recorded And Appropriate amendments were added annually*, and/or a cover crop was grown at least until the problem was corrected, helping to reduce concentrated flows and stabilize sediment delivery sites And Water pH was tested and adjusted if necessary.	If water penetration was poor (water puddles and runs off when subsurface soil was dry), appropriate amendments were added, or a cover crop was grown for at least one year And Water pH was tested and adjusted if necessary.	If water penetration was poor (water puddles and runs off when subsurface soil was dry), appropriate amendments were added to the soil.	Water penetration was poor (water puddles and runs off when subsurface soil was dry), but no corrective action was taken.
4.8 Preserving or Increasing Organic Matter	Soil analysis was done within the past 3 years for organic matter*, and inputs and outputs were monitored and recorded And Practices were implemented to increase nutrient cycling (e.g., composting**, cover cropping, use of suitable treated water from ponds, etc.) as part of standard procedures And Practices were implemented to prevent the off-site loss of nutrients including the use of buffer strips, and vegetation along roads and ditches And Tillage was eliminated to lower the rate of organic matter breakdown.	Soil analysis was done for organic matter*, and inputs and outputs were monitored And Practices were implemented to increase nutrient cycling (e.g., composting**, cover cropping, use of suitable treated water from ponds, etc.) as part of standard procedures And Tillage was reduced or eliminated to lower the rate of organic matter breakdown.	Soil analysis was not done for organic matter, but there was an awareness of inputs and outputs And Resident vegetation was allowed to grow in the vineyard during the winter to encourage nutrient cycling.	Soil analysis was not done for organic matter and our operation did not monitor nutrient inputs and outputs in an effort to develop nutrient budgets.
4.10 Surface Water Diversions for Erodible Sites	There was no evidence of rills or gullies And Erosion was controlled to prevent water quality degradation by sediment delivery sites (e.g., cover crops, buffer/filter strips, setbacks from stream areas where appropriate, etc.) And An engineered drainage system was present if needed and maintained if the erosion potential for the vineyard was high And Maintenance and repair materials were available for emergency repair.	Permanent drainage systems and waterways were present and maintained in the vineyard And Maintenance and repair materials were available for emergency repair.	Temporary drainage structures such as hay bales or shoveled diversion ditches were utilized during the winter.	Installed or maintained water diversion devices were not used to control erosion.

5.1 Water Management Strategy	The documented water management plan* identified the designated beneficial use of the water body and was based on grape-growing goals set before the growing season and accounted for soil types, slopes, irrigation water availability and quality, and energy efficiency** And Tools were in place to accomplish these goals (soil monitoring devices, weather stations, etc.) And At least three documented parameters supported water management decisions in addition to visual plant stress (e.g., evapotranspiration (ET), leaf water potential via pressure bomb, stomatal conductance via porometer, soil moisture)	The documented water management plan* was based on grapegrowing goals set before the growing season and accounted for soil types, slopes, irrigation water availability and quality, and energy efficiency** And Tools were in place to accomplish these goals (soil monitoring devices, weather stations, etc.) And Water management decisions were supported by visual plant stress and documented parameters (e.g., evapotranspiration (ET), leaf water potential via pressure bomb, stomatal conductance via porometer, soil moisture).	The water management strategy* was based on grape-growing goals set before the growing season (yield, fruit quality, water quality/quantity, canopy characteristics, floor management, and/or fertility requirements) and accounted for soil types, slopes, and irrigation water availability, cost and quality.	A water management strategy for the vineyard was not developed.
5.2 Monitoring and Amending Quality of Irrigation Water	Irrigation water was tested annually* and simultaneously for pH, salinity or total dissolved solids (electrical conductivity), nitrate, bicarbonate, suspended solids, chlorides, boron, manganese, and magnesium (as appropriate for the site and region**) And If problems with quality of irrigation water existed, water was amended and/or managed (e.g., via sulfuric acid, gypsum, polymers, root-zone leaching).	Irrigation water was tested at least once every three years or annually* if the water quality changed frequently and simultaneously for pH, salinity or total dissolved solids (electrical conductivity), and nitrate And If problems with quality of irrigation water existed, water was amended and/or managed (e.g., via sulfuric acid, gypsum, polymers, root-zone leaching).	Irrigation water was tested at least once every three years for at least pH, salinity or total dissolved solids (electrical conductivity), and nitrate.	There were no records of water quality testing within the past three years.

5.3 Off-Site Water Movement	Irrigation practices and/or property location or design caused no rills or gullies due to concentrated flows from rainfall or applied water And Preventive techniques (e.g., cover crops) were in place to slow and prevent most rainfall runoff from becoming concentrated flows And If runoff could occur during some high rainfall events, drainage systems (e.g., proper and adequate ditch relief culverts) were in place* to minimize off-site movement of silt, pesticides, and/or fertilizers.	Irrigation practices and/or property location or design caused no rills or gullies to form due to concentrated flows from rainfall or applied water And Preventive techniques (e.g., cover crops, vegetated, rocked, or solid surfaced ditches) were in place* to reduce rainfall runoff, minimizing off-site movement of silt, pesticides, and/or fertilizers And/Or If applicable, engineered drainage systems (culverts, drop inlets, diversions) were in place for hillside or terraced sites to minimize off-site movement of silt, pesticides, and/or fertilizers.	Irrigation practices caused no runoff, but runoff may have occurred during high rainfall events And If applicable, engineered drainage systems (culverts, drop inlets, diversions) were not in place for hillside or terraced sites to minimize off-site movement of silt, pesticides, and/or fertilizers.	Runoff occurred when the vineyard was irrigated and during rainfall events And Engineered drainage systems (culverts, drop inlets, diversions) were not in place for hillside or terraced sites to minimize off-site movement of silt, pesticides, and/or fertilizers And Drainage waterways were kept free of vegetative growth and sediment may have been lost.
5.7 Water Budget	The amount of water used by the vineyard between each irrigation (cumulative crop ET [ETc] or similar method) was known and only water that was used by the vineyard (or less if deficit irrigating) was replaced. Amounts used were verified by assessing soil moisture status and vine response following applications And Plant moisture status (as described in Category 4 of Criteria 5-10) was used to modify the irrigation applications as necessary And If soil salinity was believed to be an issue, it was confirmed annually (by analysis) and managed appropriately	The amount of water used by the vineyard between each irrigation (cumulative crop ET [ETc] or similar method) was determined, and only water that is used by the vineyard (or less if deficit irrigating) was replaced. Amounts used and application volumes were verified by assessing soil moisture status and vine response following irrigation applications And If soil salinity was believed to be an issue, it was confirmed annually (by analysis) and managed appropriately.	The amount of water applied at each irrigation was applied at the optimized amount based on goals (e.g.,yield, vine appearance) and general weather conditions And If soil salinity was believed to be an issue, it was confirmed annually (by analysis) and managed appropriately.	Water was applied to the vineyard on a calendar basis (e.g., the same amount each week or year regardless of ETc, or soil or plant moisture status for irrigation purposes or salinity reduction efforts).

5.8 Measuring Water Use	Flow meters were installed on lines from the wells or other pumps, and flows were monitored and recorded during each irrigation or frost sprinkler application to help document the beneficial uses of water And Inspecting flow meters was part of regular maintenance, i.e., checked and calibrated at least every two years	Flow meters were installed on lines from the wells or other pumps, and flows were monitored during each irrigation or frost sprinkler application And Inspecting flow meters was part of regular maintenance, i.e., checked and calibrated at least every two years.	Flow meters were installed on lines from the wells or other pumps, but flows were not monitored during each irrigation or frost sprinkler application Or Other methods to measure water were used (e.g., calculation based on duration, date, energy use, weir, reservoir gauges).	Irrigation or frost sprinkler applications were not measured.
5.9 Soil Water-Infiltration Rates and Water-Holding Capacity	The infiltration rates and water-holding capacity of the vineyard soil(s) were known (based on soil type and rooting depth) And This information was used for developing a written annual irrigation plan based on the water budget, schedule, and duration. It also helped in adjusting the start date for spring/summer irrigation and helped with scheduling subsequent irrigation applications.	The infiltration rates and water-holding capacity of the vineyard soil(s) were known (based on soil type and rooting depth) And This information was used for estimating necessary irrigation volume per application and to support overall water management And Soil moisture profile measurements were made to determine the depth of irrigation to further fine-tune irrigation volume	The infiltration rates and water-holding capacity of the vineyard soil(s) were approximated (based on soil type) And This information was used for estimating necessary irrigation volume per application and to support overall water management.	The infiltration rates and water-holding capacity of the vineyard soil(s) were not known.
5.10 Soil Moisture and Plant Water Status Monitoring Methods	Soil moisture monitoring devices (e.g., gypsum blocks, tensiometers, capacitance sensors, neutron probe) were used to track water availability (and/or depletion) and used to schedule irrigation for the vineyard And Soil moisture was measured and used to determine the start date for spring/summer irrigation And Plant water status was monitored and recorded by visually or mechanically assessing shoot tips and tendrils And A plant water status measurement tool was used (e.g., pressure chamber, porometer, leaf temperature, or other technology).	Soil moisture monitoring devices (e.g., gypsum blocks, tensiometers, capacitance sensors, neutron probe) were installed and used to track water availability (and/or depletion) and used to schedule irrigation for the vineyard And Soil moisture was measured and used to determine the start date for spring/summer irrigation And Plant water status was monitored and recorded by visually assessing shoot tips, leaves and tendrils*.	A shovel or bucket auger and the "squeeze test" was used to estimate the amount of available water in the vineyard soil and schedule irrigation Or Plant water status was monitored by visually assessing shoot tips, leaves and tendrils*.	Soil moisture and plant water status was not measured or used to schedule irrigation.

10.4 Water to Process Water Ponds or Publicly Owned Treatment Works (POTW)	Flow meters to measure process water discharge were installed and monitored at least quarterly, and weekly during high-demand periods And Regular testing of pH, dissolved oxygen or other permit requirements was conducted And This monitoring information was used to develop and implement a comprehensive water conservation program that includes cleaning and sanitation procedures And Sumps, interceptors, or traps were inspected monthly and cleaned quarterly And Best Management Practices for process water** and a Storm Water Pollution Prevention Plan (SWPPP) was in place with training in storm water protection and diversion valve operation, if applicable	Flow meters to measure process water discharge were installed and monitored at least quarterly And Regular testing of pH, dissolved oxygen or other permit requirements was conducted And This monitoring information was recorded for tracking water quality and total use And Sumps, interceptors, or traps were inspected quarterly and cleaned annually And Best Management Practices for process water** or a Storm Water Pollution Prevention Plan (SWPPP) was in place, if required***	Flow meters to measure process water discharge were installed And Regular testing of pH, dissolved oxygen or other permit requirements was conducted And Sumps, interceptors, or traps were inspected annually.	Flow meters to measure process water discharge were installed, if required And Regular testing of pH, dissolved oxygen or other permit requirements was conducted.
10.5 Process Water Discharge - Water from Process Water Ponds	Pond water was applied to vineyards and/or landscaping, if permissible And Flow data was used to help select reuse or disposal method(s) And Water quality results were used to develop and implement a plan to reduce constituents in discharge water And/Or At least one additional alternative reuse or disposal method was implemented (e.g., fire protection, fountains, ponds, wetlands, supplying nearby agricultural or landscape interests).	Some pond water was applied to vineyards and/or landscaping, if permissible And Time was invested into researching and visiting other facilities that have implemented alternative reuse or disposal methods for process water.	Some pond water was used for irrigation, if permissible And Time was invested into researching alternative disposal methods for process water.	No process water was reused And Some pond water was discharged through land applications at all times of the year.

10-6 Septic Systems or Onsite Systems	The septic system was regularly checked and results recorded And A grease trap was installed and regularly maintained for restaurant and/or food service activities (if applicable) And An operations and maintenance plan was in place with an assigned staff person And Management and staff were trained in the "dos and don'ts" for septic tanks and leach fields And Educational posters listing items not to be flushed were in bathrooms And A second leach field was installed with a hand-operated diversion valve Or Separate septic tanks and leach fields were maintained for processed process water.	The septic system was regularly checked to ensure effective operation And A grease trap was installed and randomly maintained for restaurant and/or food service activities (if applicable) And An operations and maintenance plan was in place with an assigned staff person And Management and staff were trained in the "do's and don'ts" for septic tanks and leach fields Or A second leach field was installed with a hand-operated diversion valve.	The septic system was randomly checked to ensure effective operation And A grease trap was installed for restaurant and/or food service activities (if applicable).	The septic system was designed, engineered, and constructed to handle the sanitary process water and/or winery process water volumes.
10.7 Storm Water	Crush and press pads and other work areas were covered to eliminate rainfall runoff to storm drains And All storm drains were identified, labeled, and documented as draining to known and permitted locations And The process water network was not subjected to any unwanted water from rainfall runoff And Diversion valves were installed at critical points and were inspected and results recorded And Visual aboveground indicators were installed on diversion valves And Management and staff were trained in diversion valve operation And Best Management Practices for process water or a Storm Water Pollution Prevention Plan (SWPPP) was in place, if required.	Crush and press pads and other work areas were covered to eliminate rainfall runoff to storm drains Or All storm drains were identified, labeled, and documented as draining to known and permitted locations And The process water network was not subjected to any unwanted water from rainfall runoff And Diversion valves were installed And Visual aboveground indicators were installed on diversion valves And Management and staff were trained in diversion valve operation And Best Management Practices for process water or a Storm Water Pollution Prevention Plan (SWPPP) was in place, if required.	Storm water from uncovered crush and press pads, and other uncovered work areas, flow into the process water system only during grape harvest, if applicable And All storm drains were identified and labeled And The process water network was subjected to minimal unwanted water from rainfall runoff And Diversion valves were installed in critical storm drains.	Storm water from uncovered crush and press pads, and other uncovered work areas, flow into the process water system all year long And Storm drains were known And The process water system network is subjected to unwanted water from rainfall runoff.

10.8 Crush Operations	Crush operations were outside and covered or moved inside to eliminate "baking" of waste material on equipment surfaces And Pre-cleaning of equipment surfaces was done with appropriate tools (e.g., a stiff brush) to loosen and remove large material before wash-down And Water for cleaning equipment was applied as needed from a high pressure/low volume nozzle fitted with a shut-off valve. A broom and squeegee were nearby and workers were encouraged to use to clean up spills And Written cleaning procedures were implemented and adhered to in crush operations as part of a water conservation plan And Employees were trained in crush operation cleaning procedures	Crush operations were outside and covered to reduce "baking" of waste material on equipment surfaces And Pre-cleaning of equipment surfaces was done with appropriate tools (e.g., a stiff brush) to loosen and remove large material before wash-down And Water for cleaning equipment was applied as needed from a high pressure/low volume nozzle fitted with a shut-off valve. A broom and squeegee were nearby and workers were encouraged to use to clean up spills And Written cleaning procedures were implemented and adhered to in crush operations as part of a water conservation plan.	Crush operations were outside and uncovered And Pre-cleaning of equipment surfaces was done with appropriate tools (e.g., a stiff brush) to loosen and remove large material before wash-down And Water for cleaning equipment was applied as needed from a high pressure/low volume nozzle fitted with a shut-off valve. A broom and squeegee were nearby and workers were encouraged to use to clean up spills And Cleaning procedures were developed for crush operations.	Crush operations were outside and uncovered And No pre-cleaning of equipment surfaces was done before wash down occurred And Water for cleaning equipment was applied as needed.
10.11 Cellars	The total water use was measured, monitored and tracked, and used in employee training as part of a water conservation program And Cellar clean-up time was accurately determined, recorded and tracked to help reduce water use And Cellar workers were implementing written water conservation practices And Floors were pressure washed with high pressure/low volume cleaning equipment fitted with shut-off nozzles And	The total water use was measured and tracked as part of a water conservation program And Cellar clean-up time was accurately determined and recorded And Cellar workers were trained in written water conservation practices And Floors were pressure washed with high pressure/low volume cleaning equipment fitted with shut-off nozzles And Facilities using alternative cleaning technology were visited or educational meetings	The total amount of water used was estimated And Water use and clean-up time for the cellar were estimated and recorded And Cellar workers were aware of water conservation information And Floors were pressure washed with high pressure/low volume cleaning equipment fitted with shut-off nozzles And Alternative cleaning technologies were researched.	The total amount of water used was unknown And Water use and clean-up time for the cellar were unknown And Cellar workers were unaware of water conservation information And Floors were pressure washed with as much water as needed.

	One alternative cleaning technology was tested or implemented in the cellar And Water awareness information, including the water performance metric, was posted in the cellar or communicated to cellar workers And A cellar worker was a member of the water team, if applicable.	were attended where this technology was discussed And Water awareness information was posted in the cellar or communicated to cellar workers.		
10.12 Barrel Washing	Water to clean barrels was applied with a high pressure/low volume nozzle and water volume was controlled by timers And The temperature of the water was monitored, controlled, and adjusted based on the new cleaning alternative(s) selected And The amount of water used was measured, monitored and tracked as part of a written water conservation plan And An alternative sanitization (e.g., ozone) or cleaning technology (e.g., automated systems) that conserves water and protects water quality has been investigated, selected, and implemented And Written cleaning procedures were implemented and adhered to in barrel cleaning as part of a water conservation plan that includes employee training And Capturing and reusing rinse water has been implemented	Washing of barrels was done with a high pressure/low volume nozzle using temperature-controlled hot water* And The temperature of the water was monitored and controlled And The amount of water used was measured and monitored and as part of a written water conservation plan And Alternative sanitization and cleaning technologies that conserve water and protect water quality were tested And Written cleaning procedures were implemented and adhered to in barrel cleaning as part of a water conservation plan And The feasibility of capturing and reusing rinse water has been evaluated.	Barrels were cleaned by washing with hot water* until the discharge water was clear And Washing was done with a high pressure/low volume nozzle fitted with a shut-off valve And The amount of water used was estimated And Alternative sanitization and cleaning technologies were being investigated.	Barrels were cleaned by washing with as much hot water* as needed And The water used was not monitored and tracked.

10.13 Barrel Soaking	Each barrel was filled with a measured amount of water And Barrels were rotated on their side to detect leaks and to seal And Barrel heads were soaked separately in the same measured amount of water to detect leaks and to seal And Only cold water was used for 15 minutes (or as needed) And An alternative sanitization technology (e.g., ozone) was implemented And The amount of water used was measured, monitored and tracked as part of a written water conservation plan And Employees were trained in barrel soaking procedures.	Each barrel was filled with an estimated amount of water And Barrels were rotated on their side to detect leaks and to seal And Barrel heads were soaked separately in the same estimated amount of water to detect leaks and to seal And Only hot water was used And Alternative sanitization technologies (e.g., ozone) were investigated And The amount of water used was measured and monitored as part of a written water conservation plan.	Each barrel was filled completely to the top to detect leaks and to seal And Only hot water was used And The amount of water used was estimated.	Each barrel was filled completely to the top to detect leaks and to seal And Only hot water was used.
11.1 Planning, Monitoring, Goals, and Results	The total amount of hazardous materials onsite and hazardous waste generated was monitored, tracked, and recorded And Measures for implementing Pollution Prevention (P2) and hazardous waste reduction were in place for at least one year And Recorded information was used to determine if yearly goals were met and to set targets for overall hazardous material and hazardous waste reduction And Local, state, and federal regulatory agencies were contacted for P2 information And P2 was part of all employee training.	The total amount of hazardous materials onsite and hazardous waste generated was monitored, tracked, and recorded And Measures for implementing Pollution Prevention (P2) and hazardous waste reduction had begun to be implemented And Yearly targets were set for overall hazardous materials and hazardous waste reduction And Local, state, and federal regulatory agencies were contacted for P2 information And P2 information was available and easily accessible to all employees.	The total amount of hazardous materials onsite and hazardous waste generated was monitored And Measures for implementing Pollution Prevention (P2) and hazardous waste reduction were investigated (e.g., reducing or eliminating waste at the source, using non-toxic or less toxic substances, reusing materials) And Local, state, and federal regulatory agencies were considered potential resources for P2 information.	The total amount of hazardous materials purchased and hazardous waste generated was known.

11.3 Hazardous Materials - Hazardous Material Storage and Replacement	The total amount of hazardous materials was known and a hazardous materials inventory was kept and reviewed annually And Hazardous materials were stored under cover, in secondary containment, and away from storm drains And Legal requirements were reviewed regularly And All materials were reviewed for less hazardous alternatives as part of an evaluation plan designed to find replacements for hazardous materials	The total amount of hazardous materials was known and a hazardous materials inventory was kept And Hazardous materials were stored away from storm drains And Legal requirements were reviewed regularly And Priority materials were reviewed for green chemistry alternatives	The total amount of hazardous materials was known And Hazardous materials were stored away from storm drains And Research was conducted into hazardous material replacement And Legal requirements were reviewed periodically.	The total amount of hazardous materials was known.
11.7 Protection of Storm Water and Process Wastewater	Hazardous materials and waste were stored away from all drains And Major equipment and tools (excluding hand tools) were cleaned in an area that drained process water to an appropriate disposal site And All liquid hazardous materials and waste were stored in secondary containment, inspected regularly, and documented And All hazardous storage areas had outside berms And Management and staff were trained in spill prevention, containment, and cleanup procedures as part of the Best Management Practices for process wastewater	Hazardous materials and waste were stored away from all drains And Major equipment and tools (excluding hand tools) were cleaned in an area that drained process water to an appropriate disposal site And All liquid hazardous materials and waste were stored in secondary containment And Best Management Practices were developed for process wastewater that includes storm water protection	Hazardous materials and waste were stored away from storm drains And Major equipment and tools (excluding hand tools) were cleaned in an area that drained process water to an appropriate disposal site.	Hazardous materials and waste were stored away from storm drains And Equipment and tools were cleaned outdoors.

11.8 Fuel Storage – Aboveground Storage Tanks (ASTs) Vineyard & Winery or Portable Tank	Locations and size(s) of all tanks were known and the amount of fuel was recorded and tracked And Spill clean-up supplies were easily accessible And The fueling area was concrete-padded and inspected and findings were recorded, if applicable And A positive shut-off nozzle was installed and the hose and nozzle were inspected for leaks and damage And Employees were trained in fuel handling and spill prevention, control, and clean-up And Bilingual signs about fueling safety procedures were posted, if applicable	Locations and size(s) of all tanks were known and the amount of fuel was recorded and tracked And Spill clean-up supplies were easily accessible And The fueling area was concrete-padded and inspected and findings were recorded, if applicable And A positive shut-off nozzle was installed and the hose and nozzle were inspected for leaks and damage And Employees were trained in fuel handling and spill prevention, control, and clean-up And Signs about fueling safety procedures were posted.	Locations and size(s) of all tanks were known and the amount of fuel was recorded And Spill clean up supplies were easily accessible And The fueling area was inspected regularly And A positive shut-off nozzle had been installed and the hose and nozzle were inspected for leaks and damage.	Locations of all fuel tanks were known And Spill clean up supplies were easily accessible.
11.9 Winery Sanitation Supplies	Sanitation supplies were considered as a potential source of hazardous or toxic materials And Product labels were read before products were purchased or used And Two or more low-or non-toxic products were replaced with green chemistry or nonhazardous products from a baseline And Handling of janitorial supplies was part of employee training and an element of a comprehensive Pollution Prevention Program And Customer service numbers on product labels were used to get information on potentially hazardous ingredients.	Sanitation supplies were considered as a potential source of hazardous or toxic materials And Product labels were read before products were purchased or used And Priority materials were reviewed for green chemistry alternatives And Handling of sanitation supplies was part of employee training.	Sanitation supplies were considered as a potential source of hazardous or toxic materials And Product labels were read before products were purchased or used And Research was conducted into low-or non-toxic products.	Sanitation supplies were considered as a potential source of hazardous or toxic materials And Product labels were read before products were purchased or used.

12.1 Planning, Monitoring, Goals and Results	The winery conducted a solid waste audit within the last 5 years* And Results from the audit are used to make decisions on procurement, inventory procedures, production, packaging, and employee training And The total solid waste generation and the percentage of waste recycled was monitored and recorded, and the information is shared with employees And Yearly goals were set for overall solid waste reduction and solid waste diversion And Information about reducing, reusing, and recycling solid waste is part of employee training and available in Spanish, if applicable.	The winery conducted a solid waste audit within the last 5 years* And Results from the audit were used to make decisions on procurement, inventory procedures, production, packaging, and employee training And The total solid waste generation and the percentage of waste recycled was monitored and recorded And Yearly goals were set for overall solid waste reduction and solid waste diversion And Information about reducing, reusing, and recycling solid waste is part of employee training.	The winery conducted a solid waste audit within the last 5 years* And The total solid waste generation was monitored throughout the year And Information about reducing, reusing, and recycling solid waste was easily accessible to all employees.	The winery did not track the total solid waste generated per year And Some waste was diverted from landfills.
12.2 Pomace and Lees	Pomace and lees were considered "high value" resources Or A market assessment was conducted to identify priority byproducts in current pomace and lees And Material was composted on-site for direct application to vineyards and/or landscaping And/Or At least one byproduct was recovered through implementation of selected technology	Pomace and lees were considered "medium value" resources And An off-site composting company removed this material and delivered compost in the spring Or Material was composted on-site for direct application to vineyards and/or landscaping And Research and/or a waste assessment was conducted to identify technologies for extracting value-added material from pomace and lees.	Pomace and lees were considered "low value" resources And This material was applied directly to vineyards and landscape areas and worked directly into the soil Or Material was hauled off-site for use as animal feed or compost for other agriculture operations	Pomace and lees were considered "valueless" resources And This material was stored on-site for later off-site disposal Or Material was hauled off-site for disposal immediately after crush.

12.3 Diatomaceous Earth (DE)	The amount of DE used yearly by our winery was known and tracked And DE cakes were incorporated into compost operations And Alternative DE unloading and conveying technology was researched and implemented And One alternative filtration technology was tested And The DE filtration efficiency was optimized through training employees in DE handling and loading.	The amount of DE used yearly by our winery was known And DE cakes were incorporated into compost operations And Research in alternative DE unloading and conveying technologies was undertaken And Alternative materials and technologies to DE filtration were investigated (perlite, cellulose filter, cross flow) Or A facility using alternative technologies to DE filtration was visited.	The amount of DE used yearly by our winery was estimated And DE cakes were composted and applied to vineyards and/or landscaping.	The amount of DE used yearly by our winery was not known And DE cakes were thrown out in trash as waste
12.4 Plate and Frame Filters	Alternatives to plate and frame filter media disposal were researched And One facility implementing alternative plate and frame filter disposal was contacted or visited Or Plate and frame filters were slit open and applied to landscaping for soil amendment and weed suppression.	Alternatives to plate and frame filter media disposal were researched And Plate and frame filters were disposed of in a solid waste container* Or One facility implementing alternative plate and frame filter disposal was contacted	Alternatives to plate and frame filter media disposal were researched And Plate and frame filters were disposed of in a solid waste container	Plate and frame filter media were disposed of in a solid waste container.*
13.1 Planning, Monitoring, Goals and Results	Purchasing decisions were based on defined supplier criteria that included environmental attributes And A written purchasing policy that includes specific environmental standards was approved by owner/manager And Environmental considerations were included in most purchasing decisions And Alternative materials and environmental attributes of products (e.g., amount of recycled or postconsumer content, environmental certification such as Energy Star, Forest Stewardship Council) were considered in relevant purchasing decisions And Goals were established and reviewed annually to increase the purchase of	Purchasing decisions were based on defined supplier criteria that included environmental attributes And The vineyard and/or winery operation had a written purchasing policy that included specific environmental standards And Environmental considerations were included in most purchasing decisions And Alternative materials and environmental attributes of products were researched (e.g., amount of recycled or postconsumer content, environmental certification such as Energy Star, Forest Stewardship Council) and information was considered in relevant purchasing decisions And Goals were established to increase the purchase of	Purchasing decisions were based on defined supplier criteria And The vineyard and/or winery operation had an informal purchasing policy And Environmental considerations were included in some purchasing decisions And Research into alternative materials and products was undertaken.	Purchasing decisions were primarily based on lowest cost And The vineyard and/or winery operation had an informal purchasing policy.

	environmentally preferable products And Suppliers and outside service providers were evaluated against comprehensive criteria including availability of environmentally preferable products and services	environmentally preferable products		