



WATER MANAGEMENT

WHAT DO I NEED TO KNOW ABOUT WATER MANAGEMENT IN MY WINERY?

CHECKLIST OF QUESTIONS TO ANSWER

1.0 ESTABLISHING A WATER MANAGEMENT PROGRAM

- 1.1 Do you have a plan to achieve successful water management at your winery?
 - Is there executive level commitment to a successful water management program?
 - Is someone assigned to oversee water management at your winery?
 - Are costs and benefits of water supply, wastewater, and associated energy tracked?
 - Do you strategically plan and set annual goals to improve water management?
- 1.2 Does your winery comply with all federal, state, and local regulations, or other certifications?
 - What regulations apply to your facility (water supply, wastewater, sanitation, storm)?
 - Are you in compliance with each of the regulations?
 - Are you in compliance with the certifications you seek? ([LIVE](#), [Salmon Safe](#), [Organic](#))
- 1.3 What is the state of your winery water management program?
 - Do you have a schematic of water movement and use through your winery?
 - Have you identified costs of water including energy for pumping and management?
 - Do you have a list of all chemicals used in the facility both quantity used and cost?
 - Do you use documented methods to quantify and monitor water use?
 - Do you monitor and document source water quality and necessary water treatments?
 - Do you use documented Standard Operating Procedures for water use including cleaning and sanitation?
 - Do you use documented methods to quantify and monitor wastewater generated?
 - Do you monitor and document wastewater quality and any necessary treatment?
 - Do you have documented Standard Operating Procedures for handling of wastewater and treatment?
 - What are your current water conservation practices – reduce, re-use, and recycle?
 - What are your chemical uses and sanitation practices – reduce, re-use, and recycle?
 - Have you factored in parameters to accommodate water needs for future growth?

2.0 ASSESSING QUANTITY AND QUALITY OF WATER USED AND DISCHARGED

2.1 How much water is used in each operation at your winery?

- Equipment cleaning and sanitation?
- Cellar cleaning and sanitation?
- Processing? (crush pad, wine movements, press operations)
- Laboratory?
- Tasting Room, Kitchen, and Bathrooms?
- Boilers?
- Evaporative cooling towers?
- Water softening?
- Bottling?
- Landscaping?

2.2 How much water is used per gallon of wine produced (or per ton of grapes crushed)?

- How does your total water use compare to suggested industry standard of 2.9 gallon water per gallon of wine produced?

2.3 Do you know the quality of the source water you use?

- What is the quality of the source water you use?
- Have you identified any source water quality issues?
- What water quality monitoring and treatment is necessary to comply with regulations?

2.4 How much wastewater is collected and/or discharged at your winery?

- What are the flows in the wastewater sump?
- What are the flows in the wastewater collection system and intermediate points?
- What is the capacity of your wastewater containment and discharge system?
- Is wastewater reclaimed or re-used?
- How is sanitary wastewater managed?
- How much storm water run off is managed in the wastewater system?
- How is process water run off managed?
- What wastewater discharge methods are used? (municipality, to land, wet lands, evaporation ponds, tank & haul, digester)

2.5 What is the quality of your wastewater?

- What is the water quality for each source of waste water generated at your winery?
- What chemicals and quantities are used in each source area?
- What regulatory permits are required for your wastewater system and discharge?
- What wastewater monitoring and treatment is necessary to comply with regulations?

2.6 Are solid and hazardous waste materials managed in a way that prevents contamination of wastewater, surface water, and ground water?

- Pomace and lees management?
- Compliance with regulatory composting policies?
- Paper and plastics?
- Chemical management (including water softener and lab wastes)?

3.0 EMPLOYEE TRAINING AND WATER CONSERVATION INCENTIVES

- Does your winery employ Standard Operating Procedures specific to water use and conservation?
- Are employees trained in these SOP's for water use and conservation methods?
- Are changes to the water use SOP's communicated clearly to employees when they occur?
- Are employees regularly informed about the status of your water management program?
- Do you use employee incentives to conserve and protect water?
- Is there a forum for employee input to the water management plan and SOP's?

4.0 IMPROVING YOUR WATER MANAGEMENT PROGRAM

4.1 Do you review your facility water management program and planning annually?

- Does your winery have a protocol for evaluating and monitoring the water information you track?
- Is commitment to improve your water management program still strong from executive through all levels?
- Have you established an inherent system to continuously improve water management?

4.2 What water management practices are being evaluated for improvements in the coming year?

- Are dry cleaning methods used to remove debris prior to using water?
- Are restricted nozzles used on all hoses and equipment?
- Do you use water meters and timers on equipment?
- Is boiler sized correctly, an efficient model, and maintained regularly?
- Are cooling towers equipped with vari-speed drives, properly sized & maintained regularly, duty cycle dependant on air temperature and relative humidity?
- Are compressors cooling with air, or have added water interlock and re-circulate system?
- Do you utilize drought resistant landscaping?
- Do you optimize process scheduling to reduce frequency of cleaning and water used?

4.3 What methods are you using to reduce chemical use?

- Is chemical use monitored daily/weekly?
- Are chemicals applied based on SOP's?
- Do you balance high pH waste with low pH waste water before discharge?
- Have you replaced sodium based compounds with potassium based ones?
- Is ozone employed as a sanitizer to reduce use of chemical sanitizers?

4.4 Are you re-using, reclaiming, or recycling the water you use?

- Do you re-use wash and rinse water?
- Do you reclaim process water for irrigation or other non-potable use?
- Do you recycle water – treat and filter for potable use?
- Do you recycle high strength streams such as caustic water and chemicals?
- Do you segregate storm water for use in irrigation?

4.5 What opportunities are available to improve your wastewater practices?

- Can you reduce surface water run off?
- Do you segregate and treat lab wastewater?
- Can you utilize evaporation ponds – aeration and oxygen enhancement
- Are solids removed from wastewater before discharge?
- Is wastewater pH adjusted before discharge?
- Can ion exchange of wastewater be employed?
- Can ultra filtration of wastewater be employed?
- Other?

RESOURCES:

[WA Ecology Key Wastewater Management Issues for Wineries in Washington](#)

[The Wine Institute](#)

[The American Vineyard Foundation](#)

[Kennedy/Jenks Consultants](#)

[National Grape and Wine Initiative](#)

[Washington State Department of Ecology TREE team](#)

[Washington State Department of Ecology water quality](#)

[LIVE](#)

[Salmon Safe](#)

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Stuart Childs, Kennedy/Jenks Consultants

Washington Department of Ecology TREE team

Meryl Rickey, Enologist, Snoqualmie, Ste. Michelle Wine Estates

Warren Kenney, Maintenance Supervisor Snoqualmie, Ste. Michelle Wine Estates

Jeff Paeschke, Technical Specialist Projects, Ste. Michelle Wine Estates