



# **Sustainable WA Winegrape Standard**

Requirements for Vineyards and Chain of Custody for Winegrapes

*Revised: July 6, 2022*

Standard owned by the Washington Winegrowers Association

Version	Changes
December 22, 2021	<p>Revisions made to the standard based on the Sustainable WA Winegrape Standard meeting held on December 17, 2021. In addition, reference to the program name (Sustainable WA program) was inserted in this final draft version.</p> <p>Updates based on stakeholder feedback include:</p> <ul style="list-style-type: none"> <li>• Added clarification that Chapter 1 will be included in the certification program but certification process will only confirm completion. Question details for Chapter 1 will not be evaluated.</li> <li>• Removed continuous improvement question for growers (question 10-1) and clarified that the program is committed to continuous improvement through overall revisions to the Standard.</li> <li>• Removed numeric metrics related to fuel use, electricity use, and soil organic matter (questions 4-10, 4-11, 4-12, 4-13, 6-9)</li> <li>• Revised question 3-8 in response to comments.</li> <li>• Revised question 2-10 in response to comments. Removed reference to written policy on child labor and forced labor and reduced to categories 1 and 4.</li> <li>• Removed weed management plan requirement from “under the vine weed management is restricted to 30% or less of the total vineyard floor” until further discussion and review</li> <li>• Question 7-4 revised to broaden reference to flagging to mark locations (e.g., flag, GPS mapping) with note to review this question after the pilot in consideration of large, mechanized operations</li> </ul>

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## Introduction

This document represents a final draft of the Sustainable WA Winegrape Standard created in consultation with a multi-stakeholder WA Wine Industry working group in support of the development process for the Sustainable WA program.

The Sustainable WA Winegrape Standard includes requirements for vineyards and chain of custody. The focus of the Sustainable WA program is on farm-level requirements for certification of winegrapes with allowance of on-product labelling through the chain of custody system. The vineyard requirements have been adapted from the Vinewise® online guide to sustainable winegrape growing<sup>1</sup> to include new content and for relevance in the context of certification and auditing. The Chain of Custody requirements are new and applicable to wineries to allow for use of on-product claims and certification logo.

### Vineyard

- Farm-level requirements based on Vinewise



### Winery

- Chain of Custody requirements

**Scope of the Sustainable WA program and Sustainable WA Winegrape Standard.** The program includes requirements for vineyards based on the Vinewise® Self-Assessment and associated Chain of Custody requirements for wineries.

# Vineyard Requirements

The vineyard Sustainable WA Winegrape Standard is adapted from Vinewise® and consists of 9 chapters and 83 requirements. Of the total, 79 are requirements with response categories scaling from 1 (lowest ranking) to 4 (highest ranking) and 4 requirements are quantitative metrics. Chapters and requirements are below.

## 1. Business Practices and Risk Management (8 Requirements)

- 1-1. Business Plan
- 1-2. Risk Management Plan
- 1-3. Contracts
- 1-4. Crop Insurance
- 1-5. Lending: Market Research
- 1-6. Lending: Lender Qualities
- 1-7. Financial Management
- 1-8. Marketing Plan

## 2. Human Resources (12 Requirements)

- 2-1. Workplace Policies Documentation
- 2-2. Worker Orientation and Training
- 2-3. Recruitment and Hiring
- 2-4. Farm Labor Contractors
- 2-5. Compensation and Benefits
- 2-6. Accident Prevention
- 2-7. First Aid and Emergency Response
- 2-8. Working Conditions
- 2-9. Personal Protective Equipment (PPE)
- 2-10. Child Labor and Forced Labor
- 2-11. Professional Training and Development
- 2-12. Industry Participation

## 3. Vineyard Establishment and Acquisition (12 Requirements)

- 3-1. Winery Contract Pre-planting
- 3-2. Vineyard Site Selection: History
- 3-3. Variety Selection
- 3-4. Soil Testing and Preparation
- 3-5. Planting Material
- 3-6. Nematodes
- 3-7. Vineyard Layout
- 3-8. Cold protection
- 3-9. Irrigation System
- 3-10. Irrigation Source
- 3-11. Vine Training from Planting to First Crop
- 3-12. Vineyard Removal and Redevelopment

## 4. Viticulture (13 Requirements)

- 4-1. Canopy Management
- 4-2. Pruning
- 4-3. Field Grafting for Variety Change
- 4-4. Vintage Records
- 4-5. Fruit Sampling and Deciding When to Harvest
- 4-6. Fruit Quality at Harvest
- 4-7. Harvest and Delivery
- 4-8. Vineyard Productivity and Wine Quality
- 4-9. Viticulture Research

## 5. Water Management (8 Requirements)

- 5-1. Water Quality
- 5-2. Water Management Strategy
- 5-3. Irrigation System Maintenance
- 5-4. Irrigation System Distribution Uniformity
- 5-5. Irrigation Scheduling
- 5-6. Preparing Vines for Winter
- 5-7. Pumping Plant Efficiency and Energy Savings
- 5-8. Water use\*

## 6. Soil Management (9 Requirements)

- 6-1. Soil Management Plan
- 6-2. Vineyard Floor Management and Erosion Control
- 6-3. Plant Tissue Analysis
- 6-4. Nutrient Management
- 6-5. Soil Erosion from Roads, Ditches and Culverts
- 6-6. Nitrogen applied per acre during the past growing season\*
- 6-7. Phosphorus applied per acre during the past growing season\*
- 6-8. Potassium applied per acre during the past growing season\*

## 7. Pest Management (11 Requirements)

- 7-1. Pest Management Plan
- 7-2. Monitoring for Insect and Mite Pests
- 7-3. Use of Economic Thresholds for Insects and Mites
- 7-4. Mealybug Management
- 7-5. Powdery Mildew Management
- 7-6. Managing Esca, Botryosphaeria, and Eutypa
- 7-7. Management of Botrytis Bunch Rot and Sour Rot
- 7-8. Virus Management
- 7-9. Weed Management Plan
- 7-10. Vertebrate Pest Management Plan
- 7-11. Bird Pest Management Plan

## 8. Materials Handling (9 Requirements)

- 8-1. Pesticide Use: Material Selection
- 8-2. Pesticide Use: Prohibited Materials and Watch Lists
- 8-3. Pesticide Use: Mixing and Loading
- 8-4. Pesticide Use: Sprayer Maintenance and Calibration
- 8-5. Pesticide Use: Application
- 8-6. Pesticide Use: Worker Safety
- 8-7. Pesticide Use: Offsite Movement
- 8-8. Pesticide Use: Equipment Cleaning
- 8-9. Pesticide and Hazardous Materials Storage

## 9. Whole Farm Ecosystem and Community (6 Requirements)

- 9-1. Land Conversion
- 9-2. Farmscape Map
- 9-3. Whole Farm Ecosystem Plan and Goals
- 9-4. Regional Ecosystem Management
- 9-5. Neighbor Relations
- 9-6. Community Involvement

\*Metric requirement with numeric input.

## Minimum Requirements for Certification

The Sustainable WA Winegrape Standard requires that program participants meet a set of mandatory requirements AND achieve at least 70% for chapters 2 to 9, representing an average category score of 2.8 out of 4. Chapter 1 is required for completion as part of the Sustainable WA program **but** is not to be evaluated by auditors.

### Certification Minimum Requirements

18 mandatory requirements  
+  
70% for chapters 2 to 9  
(average category score of 2.8)

There is a total of 18 mandatory certification requirements, as listed in the table below.

Requirement No.	Topic	Category Level
2-1	Workplace policies	2 or higher
2-2	Worker training	2 or higher
2-3	Recruitment and hiring	3 or higher
2-4	Farm labor contractors	2 or higher
2-5	Compensation and benefits	2 or higher
2-6	Accident prevention	2 or higher
2-7	First aid and emergency response	3 or higher
2-8	Working conditions	3 or higher
2-9	Personal Protective Equipment (PPE)	3 or higher
2-10	Child labor and forced labor	4
3-10	Irrigation source	2 or higher
8-1	Pesticide use	2 or higher
8-2	Prohibited Materials and Watch Lists	2 or higher
8-3	Pesticide mixing/loading	2 or higher
8-5	Pesticide application	3 or higher
8-6	Pesticide worker safety	4
8-9	Hazardous materials storage	3 or higher
9-1	Land Conversion	2 or higher

The percent threshold for each chapter is calculated based on the category score response with a minimum of 1 point and maximum of 4 points per requirement. The percent score for an individual participant is based on taking a sum of the program participant's points per chapter divided by the total possible points and multiplying by 100. Requirements that are evaluated as "Not Applicable" are not factored into the chapter score.

## Metrics

The vineyard requirements include four quantitative metrics as listed below. Program participants are required to complete all four requirements to be eligible for certification. There are no specific values or thresholds required for the metrics. However, program participants are required to ensure that data has been entered and are available for review during the audit.

- **5-8.** Water use
- **6-6.** Nitrogen applied per acre during the past growing season
- **6-7.** Phosphorus applied per acre during the past growing season
- **6-8.** Potassium applied per acre during the past growing season

## Chain of Custody Threshold

The Sustainable WA Winegrape Standard includes chain of custody requirements for wineries. In order to qualify for use of an on-product label, wines must be made of at least 75% certified winegrapes. The 75% threshold of winegrapes was created as a starting point to allow for program growth and will be reviewed and potentially increased to a higher threshold as the program expands.

## **Continuous Improvement**

The Sustainable WA program is committed to the principle of continuous improvement. As part of the commitment, the Program will be reviewed on a regular basis to identify areas and requirements that can be revised and improved based on updates in scientific research, growing techniques, as well as market and consumer expectations.

The following sections include detailed requirements of the Sustainable WA Winegrape Standard.

## 1. Business Practices and Risk Management

*\*Note:* Chapter 1 is required for completion for the certification program, but specific details of the practices in Chapter 1 will not be evaluated as part of the certification process. The audit will only include confirmation that questions have been answered.

Practice	Ans.	Category Description
1-1. Business Plan  <i>Plan details in Appendix A.</i>	4	The company has a documented business plan. Implementation of the plan includes regular management team meetings, periodic plan review, and modification as the agriculture business climate and wine markets change over time.
	3	The company has a documented business plan.
	2	The company is in the process of developing a business plan.
	1	The company does not have a business plan.
1-2. Risk Management Plan  <i>Plan details in Appendix A.</i>	4	The company has a documented risk management plan. Implementation of the plan includes periodic plan review and modification as the agriculture business climate and wine markets change over time.
	3	The company has a documented risk management plan.
	2	The company is in the process of developing a risk management plan.
	1	The company does not have a risk management plan.
1-3. Contracts	4	<b>A written contract is used</b> for all winegrape sales to a winery, is comprehensively reviewed by a lawyer, and the winery's <b>business practices, and reputation are evaluated</b> before signing. The base contract is reviewed comprehensively by a lawyer <b>at least every 3 years</b> .
	3	<b>A written contract is used</b> when selling winegrapes to a winery and a <b> cursory evaluation</b> of the winery's reputation is made before signing. The base contract is reviewed comprehensively by a lawyer <b>at least every 5 years</b> .
	2	A written contract <b>is sometimes used</b> when selling winegrapes to a winery.
	1	A written contract <b>is never used</b> when selling winegrapes to a winery.
1-4. Crop Insurance	4	Crop insurance <b>is purchased annually</b> , insurance needs and requirements are clearly defined, and the insurance agent has all the information needed to determine the proper coverage required.
	3	Crop insurance <b>is not purchased on an annual basis. The decision to purchase it is based on a pre-season estimate of risk.</b> When purchased, insurance needs and requirements are clearly defined, and the insurance agent has all the information needed to determine the proper coverage required.
	2	The <b>decision on whether to purchase</b> crop insurance <b>is based on budgetary constraints</b> .
	1	Crop insurance <b>is not used</b> .
1-5. Lending: Market Research	4	Before contacting a lender, a current market analysis is done by researching <b>local, state, and global wine and winegrape trend data and markets</b> , and the financial risks of the wine industry at each level are understood.
	3	Before contacting a lender, a current market analysis is done by researching <b>local and state wine and winegrape trend data and markets</b> , and the financial risk of the regional wine industry is understood.
	2	Before contacting a lender, an analysis is done of the <b>local winegrape market</b> .
	1	<b>No wine industry research or market analysis is done</b> before contacting a lender.



# 1. Business Practices and Risk Management

\*Note: Chapter 1 is required for completion for the certification program, but specific details of the practices in Chapter 1 will not be evaluated as part of the certification process. The audit will only include confirmation that questions have been answered.

Practice	Ans.	Category Description
1-6. Lending: Lender Qualities	4	Due diligence was conducted to determine lender's experience in agriculture. The lender <b>has significant experience</b> in winegrape lending <b>and understands</b> the wine industry and the business of the vineyard. A professional relationship is developed with the lending officer.
	3	Due diligence was conducted to determine lender's experience in agriculture. The lender <b>has limited experience</b> in winegrape lending <b>and some understanding</b> of the wine industry and the business of the vineyard. Their understanding is actively increased through the development of a professional relationship.
	2	Due diligence was conducted to determine lender's experience in agriculture. The lender <b>has no experience</b> in agriculture lending or understanding of the wine industry.
	1	<b>No attempt is made to determine the lender's experience in agriculture lending</b> or in developing a professional relationship with the lender.
1-7. Financial Management	4	An <b>annual company budget</b> is established and <b>updated on a regular basis</b> (such as monthly or quarterly) <b>for each management unit (block)</b> . Input costs and productivity measures are calculated and tracked for <b>all</b> key practices. Financial management reports (profit and loss statements) are generated, and an independent tax and/or financial advisor is consulted to optimize financial performance.
	3	A <b>company budget</b> is established <b>for the whole farm</b> and <b>updated at the end of each year</b> . Input costs are calculated and tracked for <b>some</b> key practices. Financial management reports (profit and loss statements) are generated, and an independent tax and/or financial advisor is consulted to optimize financial performance.
	2	A company budget is established and updated at the end of each year, and financial management reports (profit and loss statements) are generated annually.
	1	Company budget and financial management reports are updated less frequently than once per year.
1-8. Marketing Plan	4	A documented marketing plan has been developed that includes overall objectives, strategies for achieving them, a work plan, and a way to measure progress. A marketing line item is in the company's budget. Implementation of the plan includes periodic meetings to review and update as needed.
	3	A documented marketing plan has been developed that includes objectives and a work plan. A marketing line item is in the company's budget.
	2	A marketing plan is in the process of being developed that includes objectives and a work plan.
	1	The company does not have a marketing plan.

## 2. Human Resources

Practice	Ans.	Category Description
2-1. Workplace Policies Documentation	4	The company <b>has developed</b> an Employee Handbook and associated workplace policies and procedures governing staffing and recruiting; orientation and training; employee relations and safety; performance review; and compensation and benefits. <b>The Employee Handbook is reviewed annually and updated if necessary.</b> Employees have access to the handbook upon hire.
	3	The company <b>has developed</b> an Employee Handbook and associated workplace policies and procedures governing staffing and recruiting; orientation and training; employee relations and safety; performance review; and compensation and benefits. Employees have access to the handbook upon hire.
	2 *Mandatory Req.	The company <b>is developing</b> an Employee Handbook and associated workplace policies and procedures governing staffing and recruiting; orientation and training; employee relations and safety; performance review; and compensation and benefits.
	1	The company <b>does not have</b> an Employee Handbook or associated workplace policies.
2-2. Worker Orientation and Training	4	A <b>designated employee</b> is responsible for orienting new employees, including <b>providing an Employee Handbook</b> in the appropriate language, training on worker health and safety, and they are knowledgeable about relevant laws. <b>All workers are trained by a qualified trainer</b> in the use of applicable personal protective equipment (PPE) and in the farm's accident prevention and emergency plans and procedures. <b>Prior to operation with dangerous and complex equipment, employees receive formal training on the equipment's safe use.</b>
	3	A <b>designated employee</b> is responsible for orienting new employees, training on worker health and safety, and they are knowledgeable about relevant laws. <b>All workers are trained by a qualified trainer</b> in the use of applicable personal protective equipment (PPE) and in the farm's accident prevention and emergency plans and procedures. <b>Prior to operation with dangerous and complex equipment, employees receive formal training on the equipment's safe use.</b>
	2 *Mandatory Req.	<b>All workers are trained by a qualified trainer</b> in the use of applicable personal protective equipment (PPE) and in the farm's accident prevention and emergency plans and procedures based on relevant legal and regulatory requirements. Employees have received minimal training prior to using equipment.
	1	No formal training is conducted on worker health and safety.
2-3. Recruitment and Hiring – Directly Employed Workers	4	The <b>company confirms compliance with all</b> state and federal laws and regulations related to recruitment and hiring of employees, and discrimination due to age, gender, sexual orientation, religion, race, and country of origin. <b>A written policy and process are in place to ensure owners, managers, and supervisors have current knowledge of these laws and regulations.</b>
	3 *Mandatory Req.	The <b>company confirms compliance with all</b> state and federal laws and regulations related to recruitment and hiring of employees, and discrimination due to age, gender, sexual orientation, religion, race, and country of origin.
	2	The <b>company is aware of most</b> state and federal laws and regulations related to recruitment and hiring of employees, and discrimination due to age, gender, sexual orientation, religion, race, and country of origin.
	1	The <b>company is not aware</b> of current state and federal laws and regulations related to recruitment and hiring of employees and discrimination.

## 2. Human Resources

Practice	Ans.	Category Description
2.4. Farm Labor Contractors – Indirectly Contracted Workers	4	The company <b>is knowledgeable</b> of all state and federal laws and regulations related to use of farm labor contractors and/or H2A guest worker programs (if applicable). The company <b>checks that their farm labor contractor(s) has a valid state license and has a system in place to manage compliance with all state and federal laws</b> , including the Washington Farm Labor Contractor Act and/or H2A guest worker programs (if applicable), and that their farm labor contractor(s) has provided workers written notice about pay, housing, and health and safety requirements.
	3	The company <b>is knowledgeable</b> of all state and federal laws and regulations related to use of farm labor contractors and/or H2A guest worker programs (if applicable). The company <b>checks that their farm labor contractor(s) has a valid state license and is aware of all state and federal laws</b> , including the Washington Farm Labor Contractor Act and/or H2A guest worker programs (if applicable).
	2 *Mandatory Req.	The company <b>is knowledgeable</b> of all state and federal laws and regulations related to use of farm labor contractors and/or H2A guest worker programs (if applicable) and <b>checks that their Farm Labor Contractor(s) has a valid state license</b> .
	1	The <b>company is not knowledgeable</b> of current state and federal laws and regulations related to use of Farm Labor Contractors and/or H2A guest worker programs (if applicable) and <b>has not checked that their Farm Labor Contractor(s) has a valid state license</b> .
2-5. Compensation and Benefits	4	The company confirms compliance with all state and federal laws and regulations related to minimum wage, working hours, overtime pay, and benefits, including paid sick leave, on an ongoing basis. <b>A written policy and process are in place to ensure that managers and supervisors have current knowledge of these laws and regulations</b> . Employees are provided paid time off for vacation and assistance is provided for health insurance beyond what is required by law. <b>The company provides a financial contribution to a retirement plan for full time employees</b> .
	3	The company confirms compliance with all state and federal laws and regulations related to minimum wage, working hours, overtime pay, and benefits, including paid sick leave, on an ongoing basis. Employees are provided paid time off for vacation and assistance for health insurance beyond what is required by law.
	2 *Mandatory Req.	The company confirms compliance with all state and federal laws and regulations related to minimum wage, working hours, overtime pay and benefits.
	1	The <b>company is not aware</b> of current state and federal laws and regulations related to minimum wage, working hours, overtime pay, and benefits.
2-6. Accident Prevention	4	The company has established an Accident Prevention Program (APP) in accordance with legal requirements that includes an

## 2. Human Resources

Practice	Ans.	Category Description
		emergency response plan, <b>and it is reviewed/updated on an annual basis. Annual training on the APP is offered to all employees is conducted during normal working hours. In cases where a Farm Labor Contractor (FLCs) is used, the company checks that the FLC has an APP that has been communicated to all FLC employees.</b>
	3	The company has established Accident Prevention Program (APP) in accordance with legal requirements that includes an emergency response plan. <b>Annual training on the APP is offered for all employees during normal working hours. In cases where a Farm Labor Contractor (FLCs) is used, the company checks</b> that the FLC has an APP that has been communicated to all FLC employees.
	2 *Mandatory Req.	The company has established Accident Prevention Program (APP) in accordance with legal requirements that includes an emergency response plan, <b>and the APP has been communicated to all employees. In cases where a Farm Labor Contractor (FLCs) is used, the company checks</b> that the FLC has an APP that has been communicated to all FLC employees.
	1	The company <b>has not yet established an Accident Prevention Program (APP)</b> in accordance with legal requirements that includes an emergency response plan. <b>In cases where a Farm Labor Contractor (FLCs) is used, the company has not checked</b> that the FLC has an APP that has been communicated to all FLC employees.
2-7. First Aid and Emergency Response	4	Adequately stocked first aid kits are provided and accessible at key locations throughout the operation. Supervisor employee(s) are trained in first aid.
	3 *Mandatory Req.	Adequately stocked first aid kits are provided and accessible at key locations throughout the operation.
	2	A first aid kit with some supplies is provided.
	1	First aid supplies are not readily available.
2-8. Working Conditions	4	The <b>company complies</b> with all state and federal laws related to provision of sanitary facilities, ready access to potable water, adequate work breaks, and shade. <b>A process is in place to ensure that managers and supervisors remain current in these laws and regulations.</b>  The company <b>provides the opportunity for employee suggestions and Feedback/Comments in relation to sanitary facilities and other working condition aspects, as applicable.</b>
	3 *Mandatory Req.	The <b>company complies</b> with all state and federal laws related to provision of sanitary facilities, ready access to potable water, adequate work breaks, and shade.
	2	The <b>company is aware</b> of most state and federal laws related to provision of sanitary facilities, ready access to potable water, adequate work breaks, and shade.
	1	The <b>company is not aware</b> of current state and federal laws and regulations related to provision of sanitary facilities, ready access to potable water, adequate work breaks, and shade.
2-9. Personal Protective	4	Workers <b>are made aware of, have immediate access to, and utilize all required</b> personal protective equipment (PPE) <b>and they are trained to use it on at least an annual basis.</b> PPE is inspected and

## 2. Human Resources

Practice	Ans.	Category Description
Equipment (PPE)		maintained in good working order according to manufacturer and legal requirements.
	3 *Mandatory Req.	Workers <b>have immediate access</b> to personal protective equipment (PPE), <b>and they are trained to use it</b> . PPE is inspected and maintained in good working order according to manufacturer and legal requirements.
	1	PPE is <b>not routinely available</b> , is incomplete, or not maintained in good working order.
2-10. Child Labor and Forced Labor	4 *Mandatory Req.	The <b>company complies</b> with all state and federal laws and regulations related to child labor and forced labor.
	1	The <b>company is not aware</b> of current state and federal laws and regulations related to child labor and forced labor.
2-11. Professional Training and Development	4	Management and supervisory staff <b>have established</b> personal and business development goals, <b>which are reviewed annually</b> . The development program is documented in company policies. Staff keeps up with industry developments by attending in-house and/or out-side trainings and educational classes and/or field days on work time. Any attendance fees are paid for by the company. <b>Trade magazines and/or journals are made available for staff to read.</b>
	3	Management and supervisory staff <b>are encouraged to establish</b> personal and business development goals and to keep up with industry developments by attending trainings and educational classes and/or field days on work time. Any attendance fees are paid for by the company.
	2	Management and supervisory staff <b>are allowed to attend</b> trainings and educational classes or field days on work time.
	1	Management and supervisory staff <b>are not allowed to attend</b> trainings and educational classes or field days on work time.
2-12. Industry Participation	4	Company staff <b>take leadership roles</b> in local, state and/or federal industry trade associations and support them by speaking on panels, writing articles, and/or volunteering in association activities. The company pays for any costs associated with such participation.
	3	Company staff <b>are encouraged to participate</b> in local, state, or federal trade associations and are allowed to do so during work time. Any membership fees are paid for by the company.
	2	Company staff <b>are allowed to participate</b> in industry trade associations.
	1	Company staff <b>do not participate</b> in industry trade associations.



### 3. Vineyard Establishment and Acquisition

Practice	Ans.	Category Description
3-1. Winery Contract Pre-planting	4	The vineyard site was evaluated for suitability for specific varieties and/or wine style to be produced. Potential winery clients were contacted before site selection is/was finalized. A contract with a winery was signed before planting stipulating variety (or varieties), acreage, and tier.
	3	Potential winery clients were contacted after the vineyard site was selected. A contract was signed with a winery before planting stipulating varieties, acreage, and tier.
	2	A contract with the winery to purchase the winegrapes was signed after the vineyard was planted.
	1	The vineyard was planted without a signed contract with a winery or an interested buyer.  <i>If the vineyard was established when purchased and this information is not known, answer NA.</i>
3-2. Vineyard Site Selection: History	4	Historic weather data was obtained for the site before purchase or planting, including growing degree-days, mean growing season, extreme temperatures (such as previous cold winter events), and wind.  Information was obtained about past cropping history, pesticide usage, and potential site risks.  Information was obtained about access to water and any restrictions on water use that might be relevant.
	3	Regional weather data was obtained after the site was purchased but prior to development and planting.  If available, information obtained about past cropping history, pesticide usage, and potential site risks was taken into account.  Information was obtained about access to water and any restrictions on water use that might be relevant.
	1	No historic or regional weather data was obtained for the vineyard site.  <i>If the vineyard was established when purchased and this information is not known, answer NA.</i>
3-3. Variety Selection	4	Varieties were chosen that are appropriate for the site's average heat units and cold temperatures. Varieties were selected with consideration of future climate scenarios.  If available, knowledge gained from experimental plantings in the same or similar area is considered.
	3	Varieties were chosen that are appropriate for the site's average heat units and cold temperatures.
	2	Varieties chosen for planting reflect the region's general climate of being a cool or warm area.
	1	Determination of varieties to plant was done without reference to the site history or future climate scenarios.  <i>If the vineyard was established when purchased and this information is not known, answer NA.</i>
	4	Prior to planting, soil sampling was done to determine nutrient content and soil physical and chemical features such as texture, percolation rate,

### 3. Vineyard Establishment and Acquisition

Practice	Ans.	Category Description
3-4. Soil Testing and Preparation		water holding capacity, cation exchange capacity, pH, and salts. Soil pits were dug to assess the soil profile. Based on soil pits and tests, site physical features were modified (such as ripping, terraforming) if necessary, as were chemical features (such as pH adjustment). If appropriate, soil amendments are applied using variable rate technology. Previous land use is known and its impact on vineyard establishment is considered (such as nematode presence or livestock use).
	3	Prior to planting, soil sampling was done to determine nutrient content and soil physical features such as texture, percolation rate, and water holding capacity. Site physical features were modified (such as ripping, terraforming) if necessary. Previous land use is known and its impact on vineyard establishment was considered (such as nematode presence or livestock use).
	2	Prior to planting, soil sampling was done to determine soil physical features. Site physical features were modified (such as ripping, terraforming), if necessary. If soil amendments were added, amounts were based on local experience or fertilizer sales representative recommendations.
	1	No soil sampling and testing was done prior to vineyard establishment.  <i>If the vineyard was established when purchased and this information is not known, answer NA.</i>
3-5. Planting Material	4	The nursery's standard operating procedures for virus testing of source materials were reviewed for efficacy. The nursery's mother block source plants were from Foundation-level plant material. The vineyard was planted with certified virus-tested plant material. Proper documentation for certified material was provided. If planting stock was from outside of Washington State, compliance with plant quarantine laws was ensured.
	3	The vineyard was planted with certified virus-tested plant material, or if certified material was not available, the planting stock was indexed for viruses and other diseases. If the material was from outside of Washington State, compliance with plant quarantine laws was ensured.
	2	In-state or on-farm self-propagated planting stock was used. The propagation block was visually inspected for virus symptoms but not tested.
	1	The planting stock used was not certified, inspected, or tested.  <i>If the vineyard was established when purchased and information about the planting stock used to establish the vineyard is not known, answer NA.</i>
3-6. Nematodes	4	The soil at the vineyard site was sampled for plant-parasitic nematodes. If nematodes were detected, University Extension experts were consulted for implications and management strategies, and the site was fallowed or a non-host cover crop was grown 1-3 years before planting.

### 3. Vineyard Establishment and Acquisition

Practice	Ans.	Category Description
		Soil fumigation was done only if necessary. A nematode-resistant rootstock was considered when choosing planting stock.
	3	The soil at the vineyard site was sampled for plant-parasitic nematodes. If they were detected, the soil was fumigated. A nematode-resistant rootstock was considered when choosing planting stock.
	2	The vineyard site was fumigated without testing the soil for plant parasitic nematodes.
	1	No soil sampling was done for plant-parasitic nematodes prior to planting and no nematode control actions were taken.  <i>If the vineyard was established when purchased and information about nematodes at the site prior to planting is not known, answer NA.</i>
3-7. Vineyard Layout	4	The vineyard site was surveyed, mapped, and assessed for accessibility and staging areas. The trellis system was chosen to match the vigor of the site and/or management approach, the clone and rootstock (if one was used) planted, and yield and quality goals in the company's business plan. Adequate space was left at the end of rows and field borders to turn equipment. Row orientation was selected based on slope, prevailing wind, sun exposure, and air drainage. The vineyard was divided into blocks based on soil type to enhance uniformity.
	3	The trellis system was chosen to match the vigor of the site and/or management approach, and the clone and rootstock (if one was used) planted. Adequate space was left at end of rows and field borders for room to turn equipment. Row orientation was selected based on slope, sun exposure, and air drainage.
	2	The trellis system was chosen based on budget or winery constraints. Adequate space was left at end of rows and field borders for room to turn equipment.
	1	Vineyard layout was determined by budgetary or winery constraints and to maximize planted acres.
3-8. Cold protection	4	Cold protection tools, such as wind machines, are not needed due to the appropriate matching of vineyard site, layout, and variety/clone chosen at planting. Cold hardiness Extension information (AgWeatherNet Cold Hardiness Model) is used to estimate potential cold damage risk.
	3	Cold protection tools, such as wind machines, are not needed due to the appropriate matching of vineyard site, layout, and variety/clone chosen at planting.
	2	Crop protection practices such as wind machines are necessary for frost damage prevention, but their use is minimized due to use of damage thresholds. If necessary and efficacious, mowing is done in a timely manner to enhance cold air drainage.
	1	Cold events limit vineyard productivity and/or cold protection practices other than above (e.g., fossil fuel burning heaters) are used to minimize cold damage.
3-9. Irrigation System	4	Irrigation system is designed by a certified irrigation designer (CID). The system is designed to exceed seasonal water quantity and frequency requirements. A low volume (drip) system is used and designed to ensure uniform water delivery. The system allows for fertigation and chemigation as well as drainage for winterizing.



### 3. Vineyard Establishment and Acquisition

Practice	Ans.	Category Description
	3	Irrigation system is designed by a CID. A low volume (drip) system is used and designed to ensure uniform water delivery. The system allows for fertigation and chemigation as well as drainage for winterizing.
	2	A low volume irrigation (drip) or sprinkler system is used, and uniform water delivery is ensured.
	1	Irrigation infrastructure is unable to meet seasonal water quantity and/or frequency requirements.
3-10. Irrigation Source	4	The water source can supply enough irrigation for adequate production. If water is from wells, information is obtained on the strength of the aquifer (is it recharging or depleting), depth of the water table and pumping depth, and acreage stipulations or limitations of the well permit or certificate. If surface water is used, the limitations of the water provider are known, such as information on any pumping restrictions during a drought. The business has water rights permits to withdraw water, and reports water usage to the state if the permit requires them to do so.
	3	The water source can supply enough irrigation for adequate production. Information is obtained on the source of water (wells, surface) to ensure limitations and restrictions are known. The business has water rights permits to withdraw water, and reports water usage to the state if the permit requires them to do so.
	2 *Mandatory Req.	The water source can supply enough irrigation for adequate production. The business has water rights permits to withdraw water, and reports water usage to the state if the permit requires them to do so.
	1	The water source is unable to meet seasonal water quantity and/or frequency requirements. The business does not have water rights permits to withdraw water, and/or does not report water usage to the state if the permit requires them to do so.
3-11. Vine Training from Planting to First Crop	4	A vine training plan was developed and executed based on production goals that includes planting time frame, weed management, irrigation management and vine training.
	1	No vine training plan was developed, and minimal vine training is done between planting and first crop.
3-12. Vineyard Removal and Redevelopment	4	Vines are removed along with as much crown and as many roots as possible. Holes and depressions are filled. Weed populations are assessed and any problems eliminated using mechanical methods or spot-spraying. The site is then sampled for plant-parasitic nematodes. If nematodes are detected, University Extension experts were consulted for implications and management strategies, and the site is fallowed, or a

### 3. Vineyard Establishment and Acquisition

Practice	Ans.	Category Description
		non-host cover crop is grown 1-3 years before replanting. Soil fumigation is done only if necessary. Vineyard roads are refurbished, or new ones created if needed using engineering that minimizes erosion. A redevelopment plan is executed based on production goals and experience from the previous vineyard and management modified accordingly, for example historic nutrient deficiencies and/or poor water infiltration that are addressed before planting the new vines. It also includes planning for new technologies (e.g., mechanization).
	3	Vines are removed. Depressions are filled. Existing weed problems are eliminated. The soil is tested for plant-parasitic nematodes and fumigated if a problem exists. Vineyard roads are refurbished, or new ones created if needed using engineering that minimizes erosion. A redevelopment plan is executed based on production goals and experience from the previous vineyard and management modified accordingly, for example historic nutrient deficiencies and/or poor water infiltration that are addressed before planting the new vines. It also includes planning for new technologies (e.g., mechanization).
	2	Vines are removed, and the site is treated with herbicide and fumigated. Vineyard roads are refurbished, or new ones created if needed. Historic problems are not researched or, if known, are not addressed before planting the new vines.
	1	Vines are removed, and the site is treated with herbicide and fumigated. Vines are planted with no additional site preparation.

4. Viticulture		
Practice	Ans.	Category Description
4-1. Canopy Management	4	Canopy density and vigor are assessed annually through objective measurements. Records are kept and used to refine strategies for future canopy manipulation. Canopy manipulations (such as shoot thinning, leaf removal, hedging) are discussed with the winery and applied in accordance with pre-planned yield and quality goals. Canopy management results are evaluated annually with winery or grape buyer and refined if necessary.
	3	Canopy density and vigor are visually assessed annually. Canopy manipulations (such as shoot thinning, leaf removal, hedging) are discussed with the winery and applied in accordance with pre-planned yield and quality goals. Canopy management results are evaluated annually with winery or grape buyer and refined if necessary.
	2	Canopy manipulation (such as hedging) is only done to improve vineyard access by equipment and/or increase yield.
	1	Canopy management is not done.
4-2. Pruning	4	Where size of the vineyard permits, pruning is delayed until there is low risk of damaging cold temperatures. A pruning strategy is used to achieve vine balance and is based on historical bud counts vs. yield to achieve the coming year's yield and quality targets. This results in minimal cluster and/or shoot thinning needed to meet the targets. If Eutypa, Esca, and Botryosphaeria infection is a risk, pruning time is adjusted based on Washington State University (WSU) recommendations (see Pest Management Chapter).
	3	Pruning is delayed as long as possible to have a better understanding of the extent of winter freeze damage. Once pruning has begun, the most cold-hardy varieties are pruned first. A pruning strategy is used to achieve vine balance and is based on historical bud counts and yield to achieve the coming year's yield target. This results in minimal cluster and/or shoot thinning needed to meet the target.
	2	Pruning is done throughout the dormant season and extra buds are left for later touch up as insurance against cold temperature damage. The pruning strategy is based on historical yields to achieve the current year's yield target. Crop load adjustment is often needed to meet target yield.
	1	Pruning is done throughout the dormant season without regard to cold temperature risk. Significant crop load adjustment is necessary each year.
4-3. Field Grafting for Variety Change	4	Advantages and disadvantages, including pest or disease resistance in the rootstock, were reviewed in the decision to carry out field grafting (vs. replanting).

4. Viticulture		
Practice	Ans.	Category Description
		<p>The disease status of rootstock and scion wood were tested prior to field grafting. Rootstock and scion wood were sampled following best practices (e.g., University Extension guidelines) for sample size and timing.</p> <p>Grafting was carried out in spring after threat of frost and about a month after bud break.</p> <p>Future training or trellis system was considered in determining graft height.</p> <p>A skilled grafting crew was used for the grafting work.</p> <p>Irrigation was managed following grafting to avoid extreme sap pressure and excessive vine vigor. Post-grafting applied nitrogen was adjusted to manage vigor.</p>
	3	<p>Advantages and disadvantages, including pest or disease resistance in the rootstock, were reviewed in the decision to carry out field grafting (vs. replanting).</p> <p>The disease status of rootstock and scion wood were tested prior to field grafting.</p> <p>Grafting was carried out in spring after threat of frost and about a month after bud break.</p> <p>Irrigation was managed following grafting to avoid extreme sap pressure and excessive vine vigor.</p>
	2	<p>Advantages and disadvantages, including pest or disease resistance in the rootstock, were reviewed in the decision to carry out field grafting (vs. replanting).</p> <p>The disease status of rootstock and scion wood were tested prior to field grafting.</p>
	1	<p>Decisions on field grafting were made without regard to disease status. Irrigation, nutrient management, and yield management after field grafting did not fully account for managing sap pressure or vigor.</p> <p><i>If field grafting was not done on the vineyard, answer NA.</i></p>
4-4. Vintage Records	4	Records of past vintages are kept and reviewed to help determine optimum maturity for the current crop. Data include grape condition; crop phenology dates (such as bud break, bloom, veraison, harvest); weather prior to and during harvest; summary of growing season (hot, cool, average); sensory and chemical analyses of grapes; and comparison of actual harvest yields to crop estimate.
	3	Records of past vintages are kept and reviewed to help determine optimum maturity of the current crop. Data include information on some of the following: grape condition; crop phenology dates such as bud break and harvest; weather; and sensory and chemical analyses.
	2	Harvest date is the only information recorded from past vintages.
	1	No records of past vintages are kept.
4-5. Fruit Sampling and Deciding When to Harvest	4	Grapes are sampled regularly between veraison and harvest for Brix, titratable acid (TA) and pH. The refractometer is calibrated before sampling. Physical and sensory fruit characteristics are noted and recorded. If the winery is taking similar measurements, the data are compared. Data are also compared to sample results from other

4. Viticulture		
Practice	Ans.	Category Description
		blocks, and past vintages. The data are used to decide when to harvest.
	3	Grapes are occasionally sampled between veraison and harvest for Brix, titratable acid (TA) and pH. The refractometer is calibrated before sampling. Physical and sensory fruit characteristics are noted and recorded. The data are used to decide when to harvest.
	2	Grapes are occasionally sampled from veraison through harvest for Brix, titratable acid (TA) and pH. The winery determines the harvest date with no grower input.
	1	No sampling of fruit is done, or if the winery samples the grapes, the data are not obtained from them.
4-6. Fruit Quality at Harvest	4	Before harvest, defective fruit (such as bunch rot, sour rot, or sunburn) is identified in the vineyard and removed, the amount of damage is estimated, and the results are discussed with the winery. Changing environmental conditions in the field that may affect fruit quality are identified and communicated to the winery. Quality of fruit being harvested is evaluated in-field or in delivery bins, and adjustments are made to the harvest of remaining unpicked fruit if necessary (such as picking grapes after rain or frost). Digital photo and written records are used to document harvest quality.
	3	Before harvest, defective fruit (such as bunch rot, sour rot, or sunburn) is identified in the vineyard and the results are discussed with the winery. Quality of fruit being harvested is evaluated in-field or in delivery bins, and adjustments are made to the harvest of remaining unpicked fruit if necessary (such as picking grapes after rain or frost). Digital photos and/or written records are used to document harvest quality.
	2	Defective fruit is identified during harvest, and potential quality issues are shared/discussed with winery as loads are delivered.
	1	Defective fruit is not identified before or during harvest, and no evaluation is made of harvested fruit quality other than by the winery.
4-7. Harvest and Delivery	4	Arrangements for harvest and delivery to the winery are made in advance of estimated picking dates. Vineyard harvest matches winery schedule and capacity. If yield exceeds contract specifications, approval for delivery is received from winery prior to shipment. Loads are weighed at a certified scale, with harvest tickets matched to loads. Harvest records are kept and cross-checked with winery records.
	3	Arrangements for harvest and delivery to the winery are made in advance of estimated picking dates. Vineyard harvest matches winery schedule and capacity. Loads are weighed at a certified scale. Harvest records are kept on the farm but are not cross-checked with harvest tickets or winery records.
	2	Arrangements for harvest and delivery to the winery are made in advance of estimated picking dates. Harvest records are not kept on the farm.
	1	Little or no advanced planning is made for harvest or delivery to the winery. There is little communication with the winery during harvest. Harvest records are not kept on the farm.
4-8. Vineyard Productivity and Wine Quality	4	Vineyard productivity is assessed annually by calculating production costs and comparing them to revenue. Productivity data from past vintages is reviewed for trends and to assess vineyard life span. A vineyard productivity plan is developed and used to guide management to keep production levels optimum. Vines needing replanting or retraining are tagged during growing season, and replacement vines are ordered and planted in a timely manner. Wine

4. Viticulture		
Practice	Ans.	Category Description
		is made from the vineyard, tasted with the winemaker, and results are discussed in relation to possible management changes for next season.
	3	Vineyard productivity is assessed every few years by visual/qualitative means only, the only quantitative measure being yield. Vines needing replanting or retraining are tagged during the growing season, and replacement vines are ordered and planted in a timely manner.
	2	Vineyard productivity is assessed every few years based only on tonnage. Retraining and/or replanting is done occasionally, with vines being replaced or layered only if a significant number are damaged or if tonnage has noticeably declined.
	1	No assessment of vineyard productivity is made. Vines not replaced or retrained.
4-9. Viticulture Research	4	Research is being done in one or more vineyards by University Cooperative Extension, USDA Agriculture Research Service, some other University or government researcher(s), or by in-house staff. The results are being used to guide vineyard management and to share with other growers.
	3	Representatives from the vineyard participate in continuing education related to on-farm research and have attended either viticulture research field days or demonstration trials relevant to their vineyard. No experimentation is being done directly on the farm.
	1	No experimentation is done on the farm, or if things are being tried, it is not being done with adequate controls to know if results are significant or not. Vineyard representatives do not participate in continuing education related to viticulture research.



## 5. Water Management

Practice	Ans.	Category Description
5-1. Water Quality	4	Irrigation water quality is tested at least every 3 years by a reputable laboratory for the following: pH, total salts, magnesium, calcium, sodium, chloride, boron, manganese, nitrate, bicarbonate, suspended solids, and biological problems. If problems are detected, the water is treated, and effectiveness of treatment is checked with follow-up testing.
	3	Irrigation water quality is tested at least every 5 years by a reputable laboratory for pH and some, but not all, of the following: total salts, magnesium, calcium, sodium, chloride, boron, manganese, nitrate, bicarbonate, suspended solids, and biological problems. If problems are detected, the water is treated.
	2	Water to be used for irrigation was only tested for quality at the time of vineyard establishment.
	1	Irrigation water is never tested.
5-2. Water Management Strategy	4	<p>A water management strategy to guide irrigation scheduling is planned before the growing season that includes:</p> <ul style="list-style-type: none"> <li>identifying goals for canopy vigor, yield and quality;</li> <li>vineyard floor management (such as planted cover crops vs. resident vegetation vs. tillage); and</li> <li>nutrient requirements.</li> </ul> <p>The strategy is adjusted relative to current season's weather conditions. Vineyard site characteristics (such as soil moisture- holding capacity, slope, irrigation system performance) are considered when developing the strategy. The strategy is discussed with the winery.</p>
	3	<p>A water management strategy to guide irrigation scheduling is developed as the growing season progresses that takes into account:</p> <ul style="list-style-type: none"> <li>goals for canopy vigor, yield and quality;</li> <li>vineyard floor management (such as planted cover crops vs. resident vegetation vs. tillage); and</li> <li>nutrient requirements.</li> </ul> <p>Vineyard site characteristics (such as soil moisture-holding capacity, slope, irrigation system performance) are also considered when implementing the strategy.</p>
	2	A water management strategy is developed to guide irrigation scheduling, but it is not implemented consistently.
	1	No water management strategy is used to guide irrigation management.
5-3. Irrigation System Maintenance	4	The irrigation system is checked for breaks, leaks, and clogs every irrigation. Flow meters are monitored for significant changes in water use. Filters are monitored and cleaned on a regular basis. Irrigation lines are flushed as needed to remove sediment. An automated system is in place to control biological growth (such as algae) in lines, and growth in ponds (if used) is managed if necessary. The company has a preventative maintenance program in place to ensure regular maintenance is performed and documented on the system. The company has a designated employee to manage the maintenance of the irrigation system.
	3	The irrigation system is checked for breaks, leaks, and clogs every other irrigation. Flow meters are monitored for significant changes in water use. Filters are cleaned at least once a year. Irrigation lines are flushed as needed to remove sediment but more than once a year. The lines are cleaned for biological growth as needed (such as algae), and growth in ponds (if used) is managed if necessary. The company has a designated employee to manage the maintenance of the irrigation system.
	2	The irrigation system is checked for breaks, leaks, and clogs at least once a month during use. Irrigation lines are flushed annually and

## 5. Water Management

Practice	Ans.	Category Description
		cleaned for biological growth. The company has a designated employee to manage the maintenance of the irrigation system.
	1	The irrigation system is checked for breaks, leaks, and clogs once a year or less. Irrigation lines are flushed less than annually and not cleaned for biological growth.
5-4. Irrigation System Distribution Uniformity	4	The distribution uniformity (DU) of the irrigation system is checked after installation and at least once during the last five years. Water quality is understood and DU is checked appropriately to ensure proper uniformity. Visual inspection of drip lines (for sagging) is done, and corrections are made if necessary. A flow meter is installed, calibrated, and monitored, and water use rate is recorded at least monthly. If needed, actions are taken to improve uniformity through maintenance and/or modifications to the system.
	3	The distribution uniformity of the irrigation system was checked within the last five years by measuring emitter outflows or line pressure differences across the block. A flow meter is installed, calibrated, and monitored. If needed, actions are taken to improve uniformity through maintenance and/or modifications to the system.
	2	The distribution uniformity of the irrigation system was checked more than five years ago by measuring emitter outflows or line pressure differences across the block. If needed, actions are taken to improve uniformity through maintenance and/or modifications to the system.
	1	The distribution uniformity of the irrigation system has never been tested.
5-5. Irrigation Scheduling	4	Irrigation scheduling is based on vine water demand and soil moisture availability. Deficit irrigation is practiced at least for red varieties. Vine water demand is determined by either real time evapotranspiration (ET) measurements on at least a weekly basis (such as surface renewal technology), vine sap flow, vine moisture stress (such as pressure bomb), or ET is calculated using in-field weather station data. Soil moisture availability is determined from knowledge of soil type's soil moisture holding capacity and soil moisture measurement (such as soil moisture probe), and visual canopy assessments. An irrigation schedule is then based on a combination of the above measurements and observations. Soil moisture is monitored in the spring and adjusted to desired level.
	3	Irrigation scheduling is based on vine water demand determined by calculating ET from weather data from AgWeatherNet or a similar regional weather station, soil moisture measurement, and the soil water holding capacity on at least a weekly basis. The amount of water from precipitation is used to estimate overwintering soil water status, guiding when to initiate irrigation.
	2	Irrigation scheduling is determined by qualitative water status measurements (such as vine appearance) only.
	1	Irrigation scheduling is calendar-based, applying the same amount of water at the same time each year.
5-6. Preparing Vines for Winter	4	Irrigation is reduced in a timely manner before harvest, based on the water management strategy (Criterion 2), to avoid new growth and induce hardening off, but without overstressing vines. Vine water stress



## 5. Water Management

Practice	Ans.	Category Description
		is monitored during the process. The rooting zone is brought to field capacity prior to winterizing the irrigation system if possible.
	3	Irrigation is reduced in a timely manner before harvest, based on the water management strategy (Criterion 2), to avoid new growth and induce hardening off, but without overstressing vines. Vine water stress is monitored qualitatively (such as vine appearance). The soil profile is replenished with water, but it is not known to what depth or if field capacity has been achieved.
	2	Irrigation is reduced near harvest. The soil profile is not recharged.
	1	Vines receive ample water at end of the season without regard to the vine's need to harden off.
5-7. Pumping Plant Efficiency and Energy Savings	4	<b>The irrigation pump is equipped with a variable speed drive if analysis by pumping experts (such as power company staff) determine installation is economical. Pumping efficiency has been measured within the last three years.</b> Adjustments to improve efficiency were made if necessary.
	3	Efficiency of the irrigation pump <b>was measured within the last five years</b> and adjustments to improve efficiency were made if necessary.
	2	Efficiency of the irrigation pump <b>was measured more than five years ago.</b>
	1	The irrigation pump <b>has never been measured</b> for pumping efficiency.
5-8. Water use.		Total inches of water applied during the last growing season

## 6. Soil Management

Practice	Ans.	Category Description
6-1. Soil Management Plan  <i>Plan details in Appendix A.</i>	4	A written soil management plan has been developed. The plan is reviewed regularly and modified as needed. The field crew is trained to implement the plan.
	3	A written soil management plan has been developed.
	2	A soil management plan is being developed.
	1	There is no soil management plan for the vineyard.
6-2. Vineyard Floor Management and Erosion Control	4	To enhance water infiltration, reduce soil compaction, add organic matter, and reduce dust, vegetation is allowed to grow between the vine rows or cover crops are planted in every row middle, and vegetation is allowed to grow on vineyard edges and headlands. Tillage is only done if soil surface becomes too uneven for comfortable equipment operation (such as every few years). A vegetation filter strip is maintained between the vineyard and sensitive sites that would be adversely affected by water runoff (such as sediment from erosion, nutrient and pesticide contamination). In regions with sufficient rainfall to cause erosion, water diversions are installed in steep-sloped vineyards.
	3	To enhance water infiltration, reduce soil compaction, add organic matter, and reduce dust, vegetation is allowed to grow between the vine rows, or cover crops are planted, in every other row middle. Tillage is done in the other row middles. In regions with sufficient rainfall to cause erosion, water diversions are installed in steep-sloped vineyards.
	2	The soil surface is clean-tilled between the vine rows once a year.
	1	The soil surface is clean-tilled between the vine rows more than once a year.
6-3. Plant Tissue Analysis	4	Whole leaves (including petiole) sampled at veraison each year, are analyzed for macro- and micronutrients, with trends tracked by comparing sampling records of past years. The vine canopy is visually observed for color and vigor, and the results documented. The results of the tissue analyses and visual assessments are used to determine the vine nutrition program.
	3	Whole leaves (including petiole) sampled at veraison every two to three years, are analyzed for macro- and micronutrients, with trends tracked by comparing sampling records of past years. The vine canopy is visually observed for color and vigor. The results of the tissue analyses and visual assessments are used to determine the vine nutrition program.
	2	Whole leaves (including petiole) are only sampled and analyzed when a problem is suspected. The vine canopy is visually inspected for vigor and color.
	1	Plant tissue analysis is never done.
6-4. Nutrient Management	4	Macronutrients (such as N, P, K) are applied using fertigation. Amounts applied are based on soil tests, tissue samples, yield

## 6. Soil Management

Practice	Ans.	Category Description
		estimation, quality goals, and vine demand using a 'spoon feeding' approach using small applications during the growing season. Timing is based on vine phenology, and applications are never made when the vines are dormant. Soil tests and tissue samples are used to determine micronutrient needs, and deficiencies are being addressed.
	3	Macronutrient (such as N, P, K) application rates are based on soil tests, tissue samples, yield estimation, quality goals, and vine demand using split applications (2-3) during the season. Timing is based on vine phenology, and applications are never made when the vines are dormant. Soil tests and tissue samples are used to determine micronutrient needs, and deficiencies are being addressed.
	2	Macronutrient (such as N, P, K) application rates are based on tissue samples and yield estimation, and they are applied in one application.
	1	Vineyard fertilization is based on what was done in the past, and no soil or tissue testing is done to determine nutrient status.
6-5. Soil Erosion from Roads, Ditches and Culverts	4	In regions with rainfall sufficient to cause erosion, steep roads have been paved or graveled and out-sloped. If graveled, water bars have been installed. Ditches have been grassed or hardened to prevent down-cutting, and culverts are properly sized to accommodate high flows. Outlets have been hardened or energy dissipaters have been installed.
	3	In regions with rainfall sufficient to cause erosion, steep roads have been out- sloped with water bars installed. Ditches have been hardened to prevent down- cutting, and culverts are properly sized to accommodate high flows.
	2	In regions with rainfall sufficient to cause erosion, water bars are installed on steep roads.
	1	Erosion occurs on roads, ditches, and/or at culverts, and no action has been taken to reduce it.
6-6. Nitrogen applied per acre during the past growing season.		Enter the lbs N/Acre for nitrogen.
6-7. Phosphorus applied per acre during the past growing season.		Enter the lbs /Acre for phosphorous.
6-8. Potassium applied per acre during the past growing season.		Enter the lbs /Acre for potassium.

## 7. Pest Management

Practice	Ans.	Category Description
7-1. Pest Management Plan  <i>Plan details in Appendix A.</i>	4	A pest management plan based on the concepts of Integrated Pest Management has been developed and documented. The plan is reviewed regularly and modified as needed. Employees are trained to follow the plan.
	3	A pest management plan based on the concepts of Integrated Pest Management has been developed and documented.
	2	A pest management plan based on the concepts of Integrated Pest Management is being developed.
	1	No pest management plan has been established for the vineyard other than managing pests based on historical actions.
7-2. Monitoring for Insect and Mite Pests	4	Monitoring for insect and mite pests is done at least once a week using quantitative measures by a hired pest management consultant and/or vineyard staff with training and/or experience in IPM in Washington vineyards and in recognizing new and/or invasive pests (such as Brown Marmorated Stinkbug and Vine Mealybug). Monitoring for pest natural enemies is done for pests where natural enemies are important control factors. Monitoring records are kept.
	3	Monitoring for insect and mite pests is done at least once every two weeks using quantitative or qualitative measures by a hired pest management consultant and/or vineyard staff. Monitoring records are kept.
	2	Monitoring for insect and mite pests is done at least every three weeks by a chemical company representative.
	1	No structured monitoring program is followed for insect and mite pests.
7-3. Use of Economic Thresholds for Insects and Mites	4	If developed, economic thresholds verified by University research are used to make control decisions for insect and mite pests where they have been established (such as for leafhoppers and spider mites). For other important pests where research-based thresholds do not exist, in-house thresholds have been established (such as for bud and rust mites). For each pest, records are kept of monitoring, any control actions taken, and damage at the end of the season to evaluate the efficacy of the threshold value and control actions.
	3	If developed, economic thresholds verified by University research are used to make control decisions for insect and mite pests where they have been established (such as for leafhoppers and spider mites). Control actions for other important pests are based on visual estimation of pest population levels (such as light, moderate, heavy). For each pest, records are kept of monitoring, any control actions taken, and damage at the end of the season to evaluate the efficacy of the threshold value and control actions.
	2	Control decisions for all insect and mite pests are based on visual estimation of pest population levels (such as light, moderate, heavy).
	1	No thresholds are used to make insect and mite pest control decisions; control actions are based on calendar spraying and/or past history.
7-4. Mealybug Management	4	Vineyard workers are trained to recognize and mark locations (e.g., flag, GPS mapping) of grape mealybug (GMB) infestations during pruning,

## 7. Pest Management

Practice	Ans.	Category Description
		shoot thinning, and harvest. Low GMB populations are treated with a single insecticide spray at the bud swell stage (delayed dormant period). High populations are treated aggressively with early season drip applied materials and in-season foliar insecticide treatments. Movement of GMB from an infested vineyard to non-infested vineyards is minimized by only working in infested vineyards at the end of the day. Workers are trained to use practices to reduce the likelihood of spread between vineyards such as washing their hands and footwear before leaving and washing down equipment. Grape pomace from an infested vineyard is composted away from vineyards and is not spread in vineyards.
	3	Vineyard workers are trained to recognize and mark locations (e.g., flag, GPS mapping) of GMB infestations during pruning, shoot thinning, and harvest. Low GMB populations are treated with a single pesticide spray at the bud-swell stage (delayed dormant period). High populations are treated aggressively with early season drip-applied materials and in-season foliar pesticide treatments. Movement of GMB from an infested vineyard to non-infested vineyards is minimized by only working in infested vineyards at the end of the day. Grape pomace from an infested vineyard is composted away from vineyards and is not spread in vineyards.
	2	Any GMB infestation found is treated aggressively with pesticide sprays at bud- swell and in-season.
	1	The company has no GMB management program despite having one or more vineyards infested with GMB.
7-5. Powdery Mildew Management	4	Conditions conducive for powdery mildew development are reduced by increasing air flow in the vine canopy through shoot thinning, shoot positioning, sucker removal, and well-timed leaf removal. Good fungicide coverage of susceptible (actively growing) vine tissue and fruit is ensured by canopy vigor management, regular sprayer calibration and timely spray intervals to keep newly expanded tissue protected. Fungicide stewardship is practiced by rotating fungicide active ingredients with different FRAC codes between sprays throughout the season.
	3	Conditions conducive for powdery mildew development are reduced by increasing air flow in the vine canopy through shoot thinning, shoot positioning, and sucker removal. Good fungicide coverage of susceptible (actively growing) vine tissue and fruit is ensured by canopy vigor management, regular sprayer calibration, and timely spray intervals to keep newly expanded tissue protected. Fungicide stewardship is practiced by rotating fungicide active ingredients with different FRAC codes between sprays throughout the season.
	2	Good fungicide coverage of susceptible (actively growing) vine tissue and fruit is ensured by timely spray intervals to keep newly expanded tissue protected. Fungicide stewardship is practiced by rotating fungicide active ingredients with different FRAC codes between seasons.
	1	Powdery mildew management consists of regular fungicide spraying with no consideration given to stewardship.
7-6. Managing Esca, Botryosphaeria, and Eutypa	4	Cordon and trunk disease inoculum sources (such as dying and dead cordons) are pruned out and removed from the vineyard or destroyed on site (for instance by burning). The size and extent of pruning wounds is minimized. Pruning is done as late in the dormant season as possible to maximize wound healing. For vineyards with a canker disease problem, pre-pruning and then final follow-up pruning is practiced. A comprehensive vine replacement or cordon retraining program is done to minimize the long-term impact of canker diseases on production.

## 7. Pest Management

Practice	Ans.	Category Description
	3	Cordon and trunk disease inoculum sources (such as dying and dead cordons) are pruned out and removed from the vineyard or destroyed on site (for instance by burning). Pruning is done as late in the dormant season as possible to maximize wound healing. A comprehensive vine replacement or cordon retraining program is done to minimize the long-term impact of canker diseases on production.
	2	Pruning is done as late in the dormant season as possible to maximize wound healing. Vine replacement or cordon retraining program is done when time and budget allow to minimize the long-term impact of cordon and trunk diseases on production.
	1	The company does not have a program for managing cordon and trunk diseases or their impact on vineyard production.
7-7. Management of Botrytis Bunch Rot and Sour Rot	4	An integrated disease management program is implemented to manage bunch rots by increasing air circulation in the canopy through shoot thinning, sucker removal and leaf removal. Berry size and splitting are minimized through proper irrigation and nitrogen management. If mummy fruit are still present on the vines after harvest it is dropped to the ground and destroyed by berm-sweeping and mowing or disking.
	3	Air circulation is increased in the canopy to reduce conditions conducive to bunch rots through shoot thinning, sucker removal or leaf removal. Berry size and splitting are minimized through proper irrigation and nitrogen management.
	2	Air circulation is increased in the canopy to reduce conditions conducive to bunch rots through shoot thinning, sucker removal or leaf removal.
	1	The vineyard is sprayed for bunch rot or sour rot as part of annual disease management. No attempt is made to increase air circulation in the canopy.
7-8. Virus Management	4	The vineyard is comprehensively monitored for virus symptoms after veraison in red varieties and tissue from vines showing symptoms are lab tested. White varieties are randomly tested for virus. Populations of grape mealybug and scale insects, which can vector some viruses, are monitored for and if present controlled using insecticides.
	3	Tissue from vines showing virus symptoms is lab tested. Populations of grape mealybug and scale insects, which can vector some viruses, are monitored for and controlled if present using insecticides.
	1	The company does not have a virus management program.
7-9. Weed Management Plan  <i>Plan details in Appendix A.</i>	4	An integrated weed management plan has been developed and documented. The plan is reviewed regularly and modified as needed. Employees are trained to carry out the plan.
	3	An integrated weed management plan has been developed and documented.
	2	An integrated weed management plan is being developed.
	1	Vineyard weed management consists of herbicide treatments designed to keep the soil under the vine completely weed-free.
7-10. Vertebrate Pest Management Plan  <i>Plan details in Appendix A.</i>	4	A vertebrate pest management plan has been developed and documented. The plan is reviewed regularly and modified as needed. Vineyard workers are trained to implement it.
	3	A vertebrate pest management plan has been developed and documented.
	2	A vertebrate pest management plan is being developed.
	1	The company does not have a vertebrate pest management plan.
7-11. Bird Pest Management Plan	4	A bird pest management plan has been developed and documented. The plan is reviewed regularly and modified as needed. Vineyard workers are trained to implement it.
	3	A bird pest management plan has been developed and documented.

## 7. Pest Management

Practice	Ans.	Category Description
<i>Plan details in Appendix A.</i>	2	A bird pest management plan is being developed.
	1	The company does not have a bird pest management plan.



## 8. Materials Handling

Practice	Ans.	Category Description
8-1. Pesticide Use: Material Selection – Regulatory Requirements	4	<b>Category I (signal word DANGER) or Category II (signal word WARNING) pesticides are not used</b> unless required to protect the crop from imminent, severe threat. Pesticide selection is based on thorough knowledge of material choices, including registration for use on winegrapes, worker safety, severity of the pest problem, susceptibility of the pest to the pesticide, resistance management by rotating different IRAC, HRAC, or FRAC numbers between sprays or seasons, <b>and any adverse effects on pest natural enemies</b> , if relevant. Practices in the Bee Advisory Box on the pesticide label are followed.
	3	<b>Category I (signal word DANGER) pesticides are not used</b> unless required to protect the crop from imminent, severe threat. Pesticide selection is based on thorough knowledge of material choices, including registration for use on winegrapes, worker safety, severity of the pest problem, susceptibility of the pest to the pesticide, and resistance management by rotating different IRAC, HRAC, or FRAC numbers between sprays or seasons. Practices in the Bee Advisory Box on the pesticide label are followed.
	2 *Mandatory Req.	Pesticide selection is based on registration for use on winegrapes, worker safety, severity of the pest problem, and susceptibility of the pest to the pesticide. Practices in the Bee Advisory Box on the pesticide label are followed.
	1	The pesticide is selected for use because it is known to be effective against the target pest and is registered for use in winegrapes.
8-2. Pesticide Use: Prohibited Materials and Watch Lists	4	The company, including individuals responsible for pesticide recommendations, application, mixing and handling, has reviewed all pesticides in use, identified associated risks, and taken steps to mitigate risks. Pesticides on the WW Prohibited Materials List are not used. Materials on the WW Watch List are not used unless the company is able to justify their use and take necessary actions to mitigate risk. Justification for WW Watch List materials is documented.
	3	The company, including individuals responsible for pesticide recommendations, application, mixing and handling, has reviewed all pesticides in use, identified associated risks, and taken steps to mitigate risks. The company has identified pesticides on the WW Watch List and taken steps mitigate the risk of listed pesticides. Pesticides on the WW Prohibited Materials List are not used.
	2 *Mandatory Req.	The company, including individuals responsible for pesticide recommendations, application, mixing and handling, exhibits some awareness of specific risk types associated with pesticides used and has reviewed the WW Watch List. Pesticides on the WW Prohibited Materials List are not used.
	1	The company, including individuals responsible for pesticide recommendations, application, mixing and handling, is not aware of specific risk types associated with pesticides used.



## 8. Materials Handling

Practice	Ans.	Category Description
8-3. Pesticide Use: Mixing and Loading	4	<b>Mixing and loading is done at least 100 feet from a well or water source and on an approved mixing pad using a back-flow prevention device and a closed mixing system.</b> Appropriate tank mixing of different chemicals (such as pesticide and fertilizer) is performed when possible to reduce the number of spray trips and tractor usage. The pesticide label has been read, understood, and all label-specified PPE is used. <b>If tank mixing is done, compatibility is known.</b> A pesticide spill response plan has been developed <b>and workers are trained to implement it.</b> A pesticide spill kit is located near the mixing and loading station.
	3	Mixing and loading is done at a designated mixing station designed to limit runoff to surrounding areas. Appropriate tank mixing of different chemicals (such as pesticide and fertilizer) is performed when possible to reduce number of spray trips and tractor usage. A pesticide spill response plan has been developed. A pesticide spill kit is located near the mixing and loading station.
	2 *Mandatory Req.	Mixing and loading is done at a designated mixing station that attempts to limit runoff to surrounding areas. A pesticide spill kit is located near the mixing station.
	1	Mixing and loading is performed at a convenient place without consideration for accidental run-off from spills.
8-4. Pesticide Use: Sprayer Maintenance and Calibration	4	Sprayers are recalibrated and optimized <b>when conditions change</b> (such as different tractor or tires, canopy size and density, volume delivery, row spacing, slope or soil changes). <b>Nozzles are monitored regularly for clogging and changed when worn,</b> or at least annually on machines with changeable nozzles. Sprayer components are checked for adequate performance during annual scheduled maintenance.
	3	Sprayers are recalibrated and optimized <b>at least every 5 sprays.</b> Nozzles are replaced annually on machines with changeable nozzles. Sprayer components are checked for adequate performance during annual scheduled maintenance.
	2	Sprayers are recalibrated and optimized <b>annually,</b> and nozzles are replaced at least every two years on sprayers with changeable nozzles.
	1	Sprayer recalibration and optimization is done on a <b>less than annual basis</b> and nozzles are only occasionally checked or not at all.

## 8. Materials Handling

Practice	Ans.	Category Description
8-5. Pesticide Use: Application	4	<b>All pesticides are applied by a licensed private pesticide applicator or licensed commercial pesticide applicator</b> who is knowledgeable of the pesticide(s) applied, including details of the label and Safety Data Sheet (SDS). <b>Tractors have closed cabs equipped with charcoal filters.</b> All pesticide applications are documented, including date, time, weather, and reason for application based on Washington State Department of Agriculture criteria. <b>Pesticides are applied at the correct ground speed to ensure optimum coverage. Water sensitive spray cards are used to assess spray coverage whenever the sprayer is recalibrated and optimized.</b>
	3 *Mandatory Req.	<b>A licensed private pesticide applicator or licensed commercial pesticide applicator is on premises and actively supervises all applications.</b> All pesticide applications are documented, including date, time, weather and reason for application based on Washington State Department of Agriculture criteria.
	2	<b>A licensed pesticide applicator is on staff. Not all chemical applications are supervised by a licensed pesticide applicator.</b> The date and name of pesticide applied is documented.
	1	The person applying pesticides is unaware of laws regulating pesticide applicator licenses and documentation requirements.
8-6. Pesticide Use: Worker Safety  <i>Details of relevant laws and regulations in Appendix A.</i>	4 *Mandatory Req.	<b>The company complies</b> with the laws and regulations pertaining to worker pesticide handling.
	1	<b>The company is in the process of complying</b> with the laws and regulations pertaining to worker pesticide handling.
8-7. Pesticide Use: Offsite Movement  <i>Plan details in Appendix A.</i>	4	<b>A pesticide drift management plan has been written. The sprayer operator is trained to execute the plan.</b>
	3	Sensitive areas have been identified and buffer zones established. Pesticides have been identified that are prone to leaching and/or drift. Practices that minimize drift are used, including nozzle management at vineyard borders and, for reduced canopy sizes, use of drift-reducing nozzles and adjuvants, and wind speed limits for spraying.
	2	Pesticide applications do not exceed wind velocity stated on the label. No consideration is given for drift-sensitive areas, riparian areas, or end rows.
	1	Pesticide applications are made without regard to drift.
8-8. Pesticide Use: Equipment Cleaning	4	<b>Sprayers are cleaned at the end of each day they are used or in between product changes;</b> the internal system is

## 8. Materials Handling

Practice	Ans.	Category Description
		rinsed in the field with clean water or <b>rinsed with a neutralizing agent</b> , and rinsate is properly used or disposed of. The exterior of the sprayer and tractor is cleaned at a location designed for sprayer cleaning <b>such as a pad that is impervious to water and an apron with a sump to capture the rinsate and prevent runoff.</b>
	3	When in use, <b>sprayers are cleaned at least once a week or in between product changes, whichever is more frequent</b> ; the internal system is rinsed in the field with clean water, and rinsate is properly disposed of. The exterior of the sprayer is cleaned at a location designed for sprayer cleaning <b>such as a pad that is impervious to water and an apron with a sump to capture the rinsate to prevent runoff.</b>
	2	When in use, <b>sprayers are cleaned at the shop/equipment storage area at least once a week.</b> The rinsate is disposed of according to state and federal regulations.
	1	When in use, <b>sprayers are cleaned less than once a month.</b>
8-9. Pesticide and Hazardous Materials Storage	4	<b>The company complies with all laws and regulations</b> related to chemical storage. Pesticides are stored in a separate, secure, and <b>ventilated building</b> with an impermeable floor <b>and sump</b> to contain leaks and spills. Warning signs are posted on each exterior wall and at all entrances and exits. The pesticide inventory is documented. Dry pesticides are stored above liquids in their original undamaged containers. <b>When empty, pesticide containers are triple-rinsed and recycled. A pesticide emergency response plan is posted in an appropriate place, employees are trained to execute the plan,</b> and a spill kit is present.
	3 *Mandatory Req.	<b>The company complies with all laws and regulations</b> related to chemical storage. Pesticides are stored in a separate, secure building with an impermeable floor to contain leaks and spills. Warning signs are posted on each exterior wall and at all entrances and exits. Dry pesticides are stored above liquids in their original undamaged containers. A pesticide spill kit is present.
	1	<b>The company is in the process of complying</b> with all laws and regulations related to pesticide storage.

## 9. Whole Farm Ecosystem and Community

Practice	Ans.	Category Description
9-1. Land Conversion	4	Land conversion from forest, grassland, or other ecosystem types has been done according to all necessary legal or regulatory requirements. A documented assessment has been done to confirm if property owned by the farm includes areas of High Conservation Value (HCV). Areas of High Conservation Value (HCV) have not been converted since January 1, 2022. Steps have been taken to conserve areas with similar ecological characteristics to offset at least some of the land converted to agriculture.
	3	Land conversion from forest, grassland, or other ecosystem types has been done according to all legal or regulatory requirements. Prior to converting sensitive habitat to farmland, consultation is done with the natural resource agency and assessment has been conducted to determine presence of rare, endangered, or threatened species.
	2 <i>*Mandatory Req.</i>	Land conversion from forest, grassland, or other ecosystem types has been done according to all legal or regulatory requirements.
	1	There has been conversion of forest, grassland, or other ecosystem types, to agricultural land without regard to legal or regulatory requirements.  <i>If there has been no land converted during your ownership or management of the vineyard, answer NA.</i>
9-2. Farmscape Map	4	A farmscape map has been developed that indicates vineyards, major access points, staging areas, roads, wells, mixing-loading sites, decontamination sites, chemical storage facilities, buildings, non-vineyard habitat (such as waterways, wetlands, trees, hedgerows, swales), environmentally sensitive sites, notable environmental features, and neighboring properties. <b>The map is reviewed annually and updated as needed.</b>
	3	A farmscape map has been developed that indicates vineyards, roads, wells, mixing-loading sites, buildings, non-vineyard habitat (such as waterways, wetlands, trees, hedgerows, swales), and environmentally sensitive sites.
	2	A farmscape map has been developed that indicates vineyards, roads, wells, mixing-loading sites, and buildings.
	1	A farmscape map has not been developed.
9-3. Whole Farm Ecosystem Plan and Goals  <i>Plan details in Appendix A.</i>	4	A documented Whole Farm ecosystem plan and goals have been developed. The plan includes a timeline and priorities. Practices are carefully considered to minimize the need for off-farm inputs. The plan is reviewed regularly and updated as needed.
	3	A documented Whole Farm ecosystem plan and goals has been developed. Practices are carefully considered to minimize the need for off-farm inputs.
	2	A Whole Farm ecosystem plan and goals are being developed. Practices are carefully considered to minimize the need for off-farm inputs.
	1	Whole Farm ecosystem plan has not been developed.
	4	The company has worked with neighboring landowners to develop shared ecosystem goals (such as riparian restoration, watershed

## 9. Whole Farm Ecosystem and Community

Practice	Ans.	Category Description
9-4. Regional Ecosystem Management		protection and management, protect and enhance environmentally sensitive areas, enhance natural corridors), and <b>is implementing practices</b> to meet the goals.
	3	The company has worked with neighboring landowners to develop shared ecosystem goals (such as riparian restoration, watershed protection and management, protect and enhance environmentally sensitive areas, enhance natural corridors), and <b>is in the process of developing practices</b> to meet the goals.
	2	The company <b>is in the process of working with neighboring landowners</b> to develop shared ecosystem goals (such as riparian restoration, watershed protection and management, protect and enhance environmentally sensitive areas, enhance natural corridors).
	1	The company <b>has not considered cooperating</b> with neighbors on any natural resource planning or projects.
9-5. Neighbor Relations	4	The company has a process to build and maintain good neighbor relations that includes: identifying farming practices that may produce a community conflict (such as pesticide applications, timing of machine use, road traffic during harvest) and modifying them where practical to avoid conflict; awareness of and adherence to zoning and right-to-farm ordinances and land use regulations that specifically affect vineyard management practices; <b>exchanging information with neighbors about vineyard management practices; and notification of important vineyard activities.</b>
	3	The company has a process to build and maintain good neighbor relations that includes: identifying farming practices that may produce a community conflict (such as pesticide applications, timing of machine use, road traffic during harvest), and modifying them where practical to avoid conflict, and awareness of and adherence to zoning and right-to-farm ordinances and land use regulations that specifically affect vineyard management practices.
	2	Company management is familiar with zoning and right-to-farm ordinances and land use regulations that specifically affect vineyard management practices.
	1	Company management is not up to date on zoning and right-to-farm ordinances and land use regulations that specifically affect vineyard management practices.
9-6. Community Involvement	4	The company is involved, <b>through leadership, participation, and financial donations</b> , with community initiatives and organizations such as provision of affordable housing, schools and education programs, public health, Chamber of Commerce, and/or churches.
	3	The company is involved <b>through participation</b> with community initiatives and organizations such as provision of affordable housing, schools and education programs, public health, Chamber of Commerce, and/or churches.
	2	The company <b>is in the process of becoming aware of</b> community initiatives and organizations in which to become involved in, such as provision of affordable housing, schools and education programs, public health, Chamber of Commerce, and/or churches.
	1	The company <b>is not aware of or involved</b> in community initiatives or organizations.

## Chain of Custody Requirements

The requirements in this section are applicable to wineries to allow use of on-product claims or certification logo related to the Sustainable WA program. On-product claims and logo are currently in development. There are a total of 10 requirements that are evaluated through third-party audit of a winery.

Internal Management System and Training		
Practice		Answer
CC-1	The Company has a designated person responsible for ensuring compliance with the Sustainable WA program chain of custody requirements.	Yes
		No
		N/A
CC-2	Internal training on Sustainable WA program chain of custody requirements is regularly conducted for relevant employees (e.g., those involved in handling incoming shipments, those engaged in wine processing etc.).	Yes
		No
		N/A
CC-3	Documents related to chain of custody are maintained for 3 years.	Yes
		No
		N/A
Physical Traceability		
Practice		Answer
CC-4	There is a process for tracking Sustainable WA program certified grapes upon receipt at the company.	Yes
		No
		N/A
CC-5	The company keeps Sustainable WA program certified and non-certified grapes segregated throughout all stages of wine processing.	Yes
		No
		N/A
Documentation		
Practice		Answer
CC-6	Chain of custody procedures are documented, including a procedure for segregating Sustainable WA program certified and non-certified grapes.	Yes
		No
		N/A
CC-7	The company has confirmed the Sustainable WA program certification status of its vineyard suppliers.	Yes
		No
		N/A
CC-8	The company maintains records of all sales and purchases of Sustainable WA program certified grapes and wine. Receipts and invoices include date, name of buyer and seller, volume of certified grapes, and reference to the Sustainable WA program.	Yes
		No
		N/A
Minimum Threshold		
Practice		Answer
CC-9	The company has a process to ensure the minimum threshold of 75% grapes from Sustainable WA program certified vineyards is met before wine is bottled.	Yes
		No
		N/A
Claims and Logo Use		
Practice		Answer
CC-10	The company complies with the Sustainable WA program ’s claims and logo use guidelines.	Yes
		No
		N/A



## Appendix A: Guidance on Documented Plans

The guidance includes information about required plans for the sustainability program. Program requirements include plans needing to be documented and templates will be developed to support program participants in meeting higher category scores for requirements that reference documented plans.

Requirement	Guidance
1-1. Business Plan	<p>A business plan must include the following seven components:</p> <ul style="list-style-type: none"> <li>• a sustainable vision/mission statement;</li> <li>• company goals, including how to achieve a sustainable profit margin;</li> <li>• tier(s) of grapes to be produced;</li> <li>• milestones;</li> <li>• staffing needed to achieve goals and milestones;</li> <li>• operating budget and market analysis; and</li> <li>• succession plan.</li> </ul>
1-2. Risk Management Plan	<p>A risk management plan must include the following four components:</p> <ul style="list-style-type: none"> <li>• financial risk assessment (such as lending/access to capital);</li> <li>• crop loss risk (such as crop insurance, contingency planning);</li> <li>• winery contract; and</li> <li>• market risk (such as diversification of varieties grown).</li> </ul>
6-1. Soil Management Plan	<p>A soil management plan must include the following six components:</p> <ul style="list-style-type: none"> <li>• a soil map;</li> <li>• identification of sensitive zones and soil types prone to leaching or water runoff;</li> <li>• vineyard floor management practices that enhance soil health, promote water infiltration (such as minimum tillage, encouraging vegetation in row middles, adding compost), and minimize compaction;</li> <li>• monitoring of water infiltration;</li> <li>• soil sampling for nutrients and soil chemistry every 3 to 5 years unless soil conditions (such as extremely low nitrogen) warrant more frequent sampling; and</li> <li>• a vine nutrition program based on nutrient demand, yield, and fruit quality goals.</li> </ul>
7-1. Pest Management Plan	<p>A pest management plan must include the following eight components:</p> <ul style="list-style-type: none"> <li>• use of cultural controls where efficacious (such as fruit zone leaf removal for Botrytis, shoot thinning for leafhoppers, mechanical weed management, habitat management for vertebrate pests);</li> <li>• monitoring protocols for pests and their natural enemies (if relevant);</li> <li>• use of economic thresholds for insect and mite pests (if available);</li> <li>• weather monitoring and use of pest and disease forecast models when available;</li> <li>• use of reduced-risk pesticides;</li> <li>• pesticide resistance management by rotating active ingredients with different FRAC/HRAC/IRAC numbers between applications or seasons;</li> <li>• spot insecticide or herbicide treatments where efficacious; and</li> <li>• post-harvest assessment of pest impacts on vine health (e.g., canopy condition).</li> </ul>
7-9. Weed Management Plan	<p>A weed management plan must include the following five components:</p> <ul style="list-style-type: none"> <li>• no herbicide treatments between vine rows unless noxious weeds are present;</li> <li>• tolerance of a limited amount of non-invasive weeds under the vine;</li> <li>• herbicide resistance management is practiced by alternating between sprays active ingredients with different HRAC numbers and/or rotating chemical weeding with mechanical weeding;</li> <li>• herbicide selection is based on efficacy and knowledge of soil interactions (such as leaching characteristics); and</li> <li>• spot spraying problem weed areas.</li> </ul>
7-10. Vertebrate Pest	<p>A vertebrate pest management plan must include the following five components:</p> <ul style="list-style-type: none"> <li>• managing problems using habitat modification (such as brush minimization, under the vine sanitation);</li> </ul>

Requirement	Guidance
Management Plan	<ul style="list-style-type: none"> <li>• exclusion (such as fencing);</li> <li>• trapping using non-body piercing traps that do not affect non-target animals;</li> <li>• use of nesting boxes and/or raptor perches to enhance vertebrate predator populations; and</li> <li>• no use of toxic baits or fumigants.</li> </ul>
7-11. Bird Pest Management Plan	<p>A bird pest management plan must include the following four components:</p> <ul style="list-style-type: none"> <li>• making weekly bird counts to determine when populations increase;</li> <li>• monitoring for bird damage;</li> <li>• netting vines in vineyard locations experiencing significant bird pressure in the past; and</li> <li>• an integrated set of control measures including visual devices (such as balloons, scare crows or reflective tape), attracting raptors that are bird predators, and noise makers (such as propane cannons) in areas where neighbors will not be affected.</li> </ul>
8-6. Pesticide Use: Worker Safety	<p>Relevant laws and regulations that are relevant to this requirement on worker pesticide handling include, at minimum the following six aspects:</p> <ul style="list-style-type: none"> <li>• all worker pesticide handlers have received within the last twelve months the required pesticide handling training from a qualified trainer in a language understood by the worker;</li> <li>• pesticide SDSs are posted at an accessible location frequented by workers;</li> <li>• no-entry signs are posted at all vineyards where the re-entry interval (REI) of the pesticide applied is greater than 48 hours;</li> <li>• 10 or more gallons of decontamination water is provided for one worker and 20 or more gallons for two or more employees.</li> <li>• Handlers are aware of the pesticide application exclusion zone (100 feet for most sprayer types) and ensure all people remain outside the zone;</li> <li>• if anyone enters the zone the application is suspended until they leave the zone.</li> </ul>
8-7. Pesticide Use: Offsite Movement	<p>A pesticide drift management plan must include the following five components:</p> <ul style="list-style-type: none"> <li>• identification and mapping of sensitive areas;</li> <li>• good neighbor policies;</li> <li>• established buffer zones;</li> <li>• identification of pesticides prone to leaching and/or drift; and</li> <li>• use of practices and technologies that minimize offsite movement of pesticides, including nozzle management at vineyard borders and, for reduced canopy sizes, use of drift-reducing nozzles, hooded sprayers, drift- reducing adjuvants, and wind speed limits for spraying.</li> </ul>
9-3. Whole Farm Ecosystem Plan and Goals	<p>A whole farm ecosystem plan must include the following six components:</p> <ul style="list-style-type: none"> <li>• natural corridors that include flowering plants that provide nutrient sources for vineyard pest natural enemies;</li> <li>• enhancement of biodiversity;</li> <li>• management of invasive species;</li> <li>• riparian areas;</li> <li>• threatened/endangered species; and</li> <li>• practices that support whole farm ecosystem goals.</li> </ul>



## Appendix B: Prohibited Materials and Watch Lists (Requirement 8-2)

Requirement 8-2 references the Prohibited Materials and Watch lists. The initial versions of the lists were derived and modified from lists included by the Pesticide Action Network (PAN) List of Highly Hazardous Pesticides (HHP)<sup>2</sup>, most recently published in March 2021. **These versions of the Prohibited Materials and Watch List lists are considered a starting point, and the Sustainable WA program will review and further develop prior to program launch. A technical subcommittee will be developed for the program to review and curate the Program Watch List. A variance process may be developed to allow for exceptions to the Prohibited Materials List in extenuating circumstances.**

### Prohibited Materials List

The Sustainable WA program Prohibited Materials List is derived from active ingredients that are listed in international conventions of the Montreal Protocol, Rotterdam Convention on Prior Informed Consent (PIC), and the Stockholm Convention on Persistent Organic Pollutants (POP).

Active Ingredient	International Convention
Alachlor	PIC
Aldicarb	PIC
alpha-BHC; alpha-HCH	POP
Azinphos-methyl	PIC
Benomyl	PIC
beta-HCH; beta-BCH	POP
Captafol	PIC
Carbofuran	PIC
Carbosulfan	PIC* (Meets conditions but not formally listed)
Chlordane	PIC, POP
DDT	PIC, POP
Dicofol	POP* (Meets conditions but not formally listed)
DNOC and its salts	PIC
Endosulfan	PIC, POP
Ethylene dibromide; 1,2dibromoethane	PIC
Ethylene dichloride; 1,2Dichloroethane	PIC
Ethylene oxide	PIC
Fenthion / Fenthion > 640g/L	PIC* (Formulations meet conditions but not formally listed)
Fluoroacetamide	PIC
hexachlorobenzene / benzene hexachloride (HCB/BHC)	PIC, POP
Hexachlorocyclohexane; mix of isomers (beta-HCH & alpha-HCH)	PIC
Lindane	PIC, POP
Mercury and its compounds	PIC
Methamidophos	PIC
Methoxychlor	POP
Methyl bromide	Montreal Protocol
Monocrotophos	PIC
Paraquat dichloride / Paraquat dichloride >276g/L	PIC* (Meets conditions but not formally listed)
Parathion	PIC
Parathion-methyl	PIC
PCP; Pentachlorophenol	PIC
Phosphamidon	PIC
Sulfluramid	PIC, POP* (Meets conditions but not formally listed)
Thiram in formulations with benomyl and carbofuran	PIC

<sup>2</sup> [https://pan-international.org/wp-content/uploads/PAN\\_HHP\\_List.pdf](https://pan-international.org/wp-content/uploads/PAN_HHP_List.pdf)

Tributyltin compounds	PIC
Trichlorfon	PIC

## Watch List

The Sustainable WA program Pesticide Watch List is based on general categories of materials that have risks of acute toxicity, long term effects, and environmental toxicity. Active ingredients on the Watch List are permitted for use in the Sustainable WA program but the higher category scores for 8-2 require operations to provide justification for use of Watch List materials and information on actions taken to mitigate risk. The Sustainable WA program may develop a template to support operations in meeting the higher category scores (i.e., category 4) of Question 8-2. The template would indicate which Watch List materials are in use, their justification (e.g., only used after monitoring and pest pressure exceeded thresholds, necessary part of rotation program to prevent pesticide resistance) and risk mitigation actions.

Details about risk categories included in the Watch List are provided in the table below (as adapted from the PAN List of Highly Hazardous Pesticides (HHP), March 2021).

Category	List	Description
Acute Toxicity	WHO Ia	'Extremely hazardous' (Class Ia) according to WHO Recommended Classification of Pesticides by Hazard or
	WHO Ib	'Highly hazardous' (Class Ib) according to WHO Recommended Classification of Pesticides by Hazard or
	H330	'Fatal if inhaled' (H330) according to the EU or the Japan Globally Harmonized System (GHS) or
Long Term Effects	EPA carc	Carcinogenic to humans according to US EPA
	IARC carc	Carcinogenic to humans according to IARC
	GHS* carc (1A, 1B)	'Known or presumed human carcinogens' (Category I) according to the EU or the Japan Globally Harmonized System (GHS) or
	IARC prob carc	Probable/likely carcinogenic to humans according to IARC, US EPA or
	EPA prob likel carc	Likely to be Carcinogenic to Humans: At High Doses according to EPA or
	GHS* muta (1A, 1B)	'Substances known to induce heritable mutations or to be regarded as if they induce heritable mutations in the germ cells of humans', 'Substances known to induce heritable mutations in the germ cells of humans' (Category I) according to the EU or the Japan Globally Harmonized System (GHS) or
	GHS* repro (1A, 1B)	'Known or Presumed human reproductive toxicant' (Category I) according to the EU or the Japan Globally Harmonized System (GHS) or
	EU EDC	Pesticides identified as endocrine disruptors in the EU according to Reg. (EU) 2018/605
	GHS* C2 & R2	EU interim criteria as laid down in Reg. (EC) No 1107/2009 'Suspected human reproductive toxicant' (Category 2) AND 'Suspected human carcinogen' (Category 2) according to the EU or the Japan Globally Harmonized System (GHS) or
Environmental Toxicity	very bio acc	'Very bioaccumulative' (BCF >5000) or Kow logP > 5 (existing BCF data supersede Kow log P data) (Indicators and thresholds according to the Stockholm Convention) AND/OR
	very pers water, soil or sediment	'Very persistent' half-life > 60 days in marine- or freshwater or half-life > 180 days in soil ('typical' half-life), marine or freshwater sediment) (Indicators and thresholds according to the Stockholm Convention) AND/OR
	very toxic to aq. Organism	Very toxic to aquatic organisms (LC/EC 50 [48h] for Daphnia spp. < 0,1 mg/l)
	highly toxic bees	'Highly toxic for bees' according to U.S. EPA (LD50, µg/bee < 2) or

Active Ingredient	Risk Category	Acute Toxicity			Long Term Effects								Environmental Toxicity				
		WHO Ia	WHO Ib	H330	EPA carc	IARC carc	GHS* carc (1A, 1B)	IARC prob carc	EPA prob likel carc	GHS* muta (1A, 1B)	GHS* repro (1A, 1B)	EU EDC	GHS* C2 & R2	very bio acc	very pers water, soil or sediment	very toxic to aq. Organism	highly toxic bees
1,3-dichloropropene	Long Term							1									
2,4-D	Long Term											1					
Abamectin	Acute, Environment		1	1													1
Acephate	Environment																1
Acetochlor	Long Term											1					
Acifluorfen, sodium	Long Term							1									
Acrinathrin	Environment																1
Acrolein	Acute		1	1													
Alanycarb	Environment																1
Alpha-chlorohydrin	Acute		1														
Aluminum phosphide	Acute, Environment			1													1
Amisulbrom	Environment													1	1	1	
Amitrole	Long Term											1					
Anthracene oil	Long Term						1										
Anthraquinone	Long Term							1		1							
Arsen and its compounds	Long Term				1	1	1										
Azafenidin	Long Term										1						
Azamethiphos	Environment																1
Azinphos-ethyl	Acute, Environment		1														1
Azocyclotin	Acute, Environment			1									1		1		
Bendiocarb	Environment																1
Benfuracarb	Environment																1
Bensulide	Environment																1
Benthiavalicarb-isopropyl	Long Term							1									
Beta-cyfluthrin	Acute, Environment		1	1													1
Bifenthrin	Long Term, Environment											1					1
Bioresmethrin	Long Term, Environment										1						1
Biphenyl; Diphenyl	Long Term						1										
Blasticidin-S	Acute		1														
Borax; Borate salts	Long Term										1						
Boric acid	Long Term										1	1					
Brodifacoum	Acute, Long Term	1		1							1						
Bromadiolone	Acute, Long Term	1		1							1						
Bromethalin	Acute, Environment	1												1		1	
Bromophos-ethyl	Acute		1														
Bromoxynil	Acute, Long Term			1							1						
Bromoxynil heptanoate	Long Term, Environment										1			1		1	
Bromoxynil octanoate	Long Term, Environment										1			1		1	
Butachlor	Long Term							1									
Butocarboxim	Acute, Environment		1														1
Butoxycarboxim	Acute		1														

Active Ingredient	Risk Category	Acute Toxicity			Long Term Effects									Environmental Toxicity			
		WHO Ia	WHO Ib	H330	EPA carc	IARC carc	GHS* carc (1A, 1B)	IARC prob carc	EPA prob likel carc	GHS* muta (1A, 1B)	GHS* repro (1A, 1B)	EU EDC	GHS* C2 & R2	very bio acc	very pers water, soil or sediment	very toxic to aq. Organism	highly toxic bees
Cadusafos	Acute, Environment		1												1	1	1
Calcium cyanide	Acute	1															
Captan	Long Term								1				1				
Carbaryl	Long Term, Environment								1				1				1
Carbendazim	Long Term									1	1						
Carbetamide	Long Term										1						
Chinomethionat; Oxythioquinox	Long Term								1								
Chlorantraniliprole	Environment														1	1	
Chlorethoxyphos	Acute, Environment	1															1
Chlorfenapyr	Environment																1
Chlorfenvinphos	Acute, Environment		1														1
Chlorfluazuron	Environment													1		1	
Chlormephos	Acute	1															
Chloroform	Long Term								1								
Chlorophacinone	Acute	1															
Chlorophene; 2-benzyl-4chlorophenol	Long Term												1				
Chloropicrin	Acute			1													
Chlorothalonil	Acute, Long Term			1					1								
Chlorotoluron	Long Term												1				
Chlorpropham	Long Term												1				
Chlorpyrifos	Long Term, Environment										1						1
Chlorpyrifos-methyl	Long Term, Environment										1						1
Cholecalciferol	Long Term										1						
Climbazole	Environment																1
Clothianidin	Environment																1
Copper (II) hydroxide	Acute, Environment			1											1	1	
Coumaphos	Acute, Long Term		1	1							1						
Coumatetralyl	Acute		1	1							1						
Creosote	Long Term						1	1	1								
Cyanamide	Long Term												1				
Cyanazine	Long Term												1				
Cyfluthrin	Acute, Environment		1	1													1
Cyhalothrin	Environment																1
Cyhalothrin, gamma	Environment																1
Cyhexatin	Environment													1		1	
Cypermethrin	Environment																1
Cypermethrin, alpha	Environment																1
Cypermethrin, beta	Environment																1
Cyproconazole	Long Term										1						
Daminozide	Long Term								1								
Deltamethrin	Long Term, Environment												1				1
Demeton-methyl (isomere mix of O-	Acute			1													

Active Ingredient	Risk Category	Acute Toxicity			Long Term Effects									Environmental Toxicity			
		WHO Ia	WHO Ib	H330	EPA carc	IARC carc	GHS* carc (1A, 1B)	IARC prob carc	EPA prob likel carc	GHS* muta (1A, 1B)	GHS* repro (1A, 1B)	EU EDC	GHS* C2 & R2	very bio acc	very pers water, soil or sediment	very toxic to aq. Organism	highly toxic bees
methyl and Smethyl))																	
Demeton-S-methyl	Acute, Environment		1														1
Diafenthiuron	Environment																1
Diazinon	Long Term, Environment							1									1
Dichlobenil	Long Term												1				
Dichlorprop	Long Term										1						
Dichlorvos; DDVP	Acute, Environment		1	1													1
Diclofop-methyl	Long Term								1								
Dicrotophos	Acute, Environment		1														1
Difenacoum	Acute, Environment	1												1			
Difethialone	Acute, Long Term	1		1							1						
Dimethoate	Environment																1
Dimoxystrobin	Long Term, Environment												1		1	1	
Dinocap	Long Term										1						
Dinotefuran	Environment																1
Dinoterb	Acute, Long Term		1								1						
Diphacinone	Acute	1															
Diquat dibromide	Acute			1													
Diquat dichloride	Acute			1													
Disulfoton	Acute	1															
Diuron	Long Term								1								
Dodine	Acute			1													
Edifenphos	Acute		1														
Emamectin benzoate	Environment														1	1	1
E-Phosphamidon	Acute	1															
Epichlorohydrin	Long Term						1	1	1				1				
EPN	Acute, Environment	1															1
Epoxiconazole	Long Term								1		1		1				
Esfenvalerate	Environment																1
Ethiofencarb	Acute		1														
Ethion	Acute			1													
Ethirimol	Environment																1
Ethoprophos; Ethoprop	Acute, Long Term	1		1					1								
Ethylene thiourea	Long Term								1		1		1				
Etofenprox; Ethofenprox	Environment														1	1	1
Famphur	Acute		1														
Fenamiphos	Acute, Environment		1	1													1
Fenazaquin	Environment																1
Fenbuconazole	Long Term												1				
Fenbutatin-oxide	Acute, Environment			1											1	1	
Fenchlorazole-ethyl	Long Term						1										
Fenhexamid	Acute			1													

Active Ingredient	Risk Category	Acute Toxicity			Long Term Effects								Environmental Toxicity				
		WHO Ia	WHO Ib	H330	EPA carc	IARC carc	GHS* carc (1A, 1B)	IARC prob carc	EPA prob likel carc	GHS* muta (1A, 1B)	GHS* repro (1A, 1B)	EU EDC	GHS* C2 & R2	very bio acc	very pers water, soil or sediment	very toxic to aq. Organism	highly toxic bees
Fenitrothion	Long Term, Environment											1					1
Fenoxycarb	Long Term, Environment							1									1
Fenpropathrin	Acute, Environment			1													1
Fenpyroximate	Acute			1													
Fentin acetate; Triphenyltin acetate	Acute, Long Term			1								1					
Fentin hydroxide; Triphenyltin hydroxide	Acute, Long Term			1				1				1					
Fenvalerate	Environment																1
Ferbam	Acute			1													
Fipronil	Environment																1
Flocoumafen	Acute, Long Term	1		1							1						
Fluazifop-butyl	Long Term										1						
Fluazinam	Acute			1													
Fluazolate	Environment												1			1	
Flubendiamide	Environment													1		1	
Flucythrinate	Acute, Environment		1														1
Flufenoxuron	Environment												1			1	
Flumetralin	Environment												1			1	
Flumioxazin	Long Term										1						
Flupyradifurone	Environment																1
Flusilazole	Long Term										1						
Flusulfamide	Acute			1													
Fluthiacet-methyl	Long Term							1									
Fluvalinate	Acute			1													
Folpet	Acute, Long Term			1								1					
Forchlorfenuron	Long Term											1					
Formaldehyde	Long Term					1		1									
Formetanate	Acute, Environment		1	1													1
Fosthiazate	Environment																1
Furathiocarb	Acute		1	1													
Furfural	Long Term							1									
Furilazole	Long Term							1									
Glufosinate-ammonium	Long Term									1							
Glyphosate	Long Term							1									
Halfenprox	Environment												1			1	
Halosulfuron-methyl	Long Term									1							
Haloxifop-methyl (unstated stereochemistry)	Long Term								1								
Heptenophos	Acute, Environment		1														1
Hexaflumuron	Environment																1
Hexythiazox	Long Term								1								
Hydrogen cyanide**	Acute	1		1													
Imazalil	Long Term								1								
Imazalil sulfate	Long Term								1								
Imidacloprid	Environment																1



Active Ingredient	Risk Category	Acute Toxicity			Long Term Effects									Environmental Toxicity			
		WHO Ia	WHO Ib	H330	EPA carc	IARC carc	GHS* carc (1A, 1B)	IARC prob carc	EPA prob likel carc	GHS* muta (1A, 1B)	GHS* repro (1A, 1B)	EU EDC	GHS* C2 & R2	very bio acc	very pers water, soil or sediment	very toxic to aq. Organism	highly toxic bees
Imiprothrin	Environment																1
Indoxacarb	Environment																1
Iprodione	Long Term							1									
Iprovalicarb	Long Term							1									
Isopyrazam	Long Term, Environment							1							1	1	
Isoxaflutole	Long Term							1									
Isoxathion	Acute, Environment		1														1
Kresoxim-methyl	Long Term							1									
Lactofen	Long Term							1									
Lambda-cyhalothrin	Acute, Long TermEnvironment			1								1					1
Linuron	Long Term										1		1				
Lufenuron	Environment												1	1	1		
Magnesium phosphide	Acute			1													
Malathion	Long Term, Environment							1									1
Mancozeb	Long Term								1		1	1	1				
Maneb	Long Term								1				1				
Mecarbam	Acute		1														
Mecoprop; MCPP	Long Term											1					
Mepanipyrim	Long Term							1									
Meptyldinocap	Long Term										1						
Metaflumizone	Environment													1	1		1
Metam-potassium	Long Term								1								
Metam-sodium	Long Term								1				1				
Methabenzthiazuron	Environment																1
Methidathion	Acute, Environment		1														1
Methiocarb	Acute, Environment		1														1
Methomyl	Acute, Environment		1														1
Metiram	Long Term								1				1				
Metribuzin	Long Term												1				
Mevinphos	Acute, Environment	1															1
Milbemectin	Environment																1
Molinate	Long Term												1				
MON 4660; AD 67	Long Term								1								
Naled	Environment																1
Nicotine	Acute		1	1													
Nitenpyram	Environment																1
Nitrobenzene	Long Term										1		1				
Noviflumuron	Long Term								1								
Omethoate	Acute, Long TermEnvironment		1										1				1
Oryzalin	Long Term								1								
Oxadiazon	Long Term								1								
Oxamyl	Acute, Environment	1		1													1
Oxydemeton-methyl	Acute, Environment		1														1

Active Ingredient	Risk Category	Acute Toxicity			Long Term Effects									Environmental Toxicity			
		WHO Ia	WHO Ib	H330	EPA carc	IARC carc	GHS* carc (1A, 1B)	IARC prob carc	EPA prob likel carc	GHS* muta (1A, 1B)	GHS* repro (1A, 1B)	EU EDC	GHS* C2 & R2	very bio acc	very pers water, soil or sediment	very toxic to aq. Organism	highly toxic bees
Oxyfluorfen	Long Term							1									
Paraffin oils; mineral oils	Long Term						1		1								
Pendimethalin	Environment													1	1		
Permethrin	Long Term, Environment							1									1
Phenthoate	Environment																1
Phorate	Acute, Environment	1															1
Phosmet	Environment																1
Phosphine	Acute			1													
Pirimicarb	Long Term, Environment							1							1	1	
Pirimiphos-methyl	Environment																1
Potasan	Acute			1													
Prallethrin	Environment																1
Procymidone	Long Term							1				1					
Profenofos	Environment																1
Profoxydim	Long Term											1					
Propachlor	Long Term							1									
Propargite	Long Term, Environment							1						1		1	
Propetamphos	Acute		1														
Propiconazole	Long Term										1						
Propineb	Long Term							1									
Propoxur	Long Term, Environment							1									1
Propylene oxide, Oxirane	Long Term						1		1	1							
Prothiofos	Environment													1		1	
Pymetrozine	Long Term							1									
Pyraclofos	Environment																1
Pyraflufen-ethyl	Long Term							1									
Pyrazachlor	Long Term							1									
Pyrazophos	Environment																1
Pyrazoxon	Acute			1													
Pyrethrins, Pyrethrum extract	Environment																1
Pyridaben	Environment																1
Pyridalyl	Environment													1	1	1	
Pyridiphenthion	Environment																1
Pyrimidifen	Acute			1													
Quinalphos	Long Term, Environment											1					1
Quinoclamine	Environment																1
Quinolin-8-ol; 8hydroxyquinoline	Long Term										1						
Quinoxyfen	Environment													1		1	
Quizalofop-p-tefuryl	Long Term											1					
Resmethrin	Long Term, Environment							1				1					1
Rotenone	Environment																1
Silafluofen	Long Term, Environment										1						1
Simazine	Long Term											1					

Active Ingredient	Risk Category	Acute Toxicity			Long Term Effects									Environmental Toxicity			
		WHO Ia	WHO Ib	H330	EPA carc	IARC carc	GHS* carc (1A, 1B)	IARC prob carc	EPA prob likel carc	GHS* muta (1A, 1B)	GHS* repro (1A, 1B)	EU EDC	GHS* C2 & R2	very bio acc	very pers water, soil or sediment	very toxic to aq. Organism	highly toxic bees
Sodium cyanide	Acute		1														
Sodium fluoroacetate (1080)	Acute	1		1													
Spinetoram	Environment																1
Spinosad	Environment																1
Spirodiclofen	Long Term						1		1								
Strychnine	Acute		1														
Sulfotep	Acute	1															
Sulfoxaflor	Environment																1
Tau-fluvalinate	Acute			1													
TCMTB	Acute			1													
Tebuconazole	Acute, Long Term			1									1				
Tebupirimifos	Acute, Environment	1													1	1	
Tefluthrin	Acute, Environment		1	1													1
Temephos	Environment																1
Tepraloxydim	Long Term												1				
Terbufos	Acute	1															
Terrazole; Etridiazole	Long Term								1								
Tetrachlorvinphos	Long Term, Environment								1								1
Tetraconazole	Long Term												1				
Tetramethrin	Environment																1
Thiabendazole	Long Term								1		1						
Thiacloprid	Long Term								1		1						
Thiamethoxam	Environment																1
Thiodicarb	Long Term, Environment								1								1
Thiofanox	Acute, Environment		1														1
Thiometon	Acute, Environment		1														1
Thiophanate-methyl	Long Term								1								
Thiourea	Long Term												1				
Tioxazafen	Long Term								1								
Tolfenpyrad	Environment													1		1	
Tolylfluanid	Acute, Long Term			1					1								
Tralomethrin	Environment																1
Triadimenol	Long Term										1						
Tri-allate	Environment														1	1	
Triazophos	Acute		1														
Tribufos, Tribuphos	Long Term								1								
Trichloroacetic acid	Long Term												1				
Tridemorph	Long Term										1						
Triflumizole	Long Term										1						
Trifluralin	Long Term, Environment												1	1			
Validamycin	Environment																1
Vamidothion	Acute, Environment		1														1
Vinclozolin	Long Term										1		1				
Warfarin	Acute, Long Term		1	1							1						
XMC	Environment																1

Active Ingredient	Risk Category	Acute Toxicity			Long Term Effects								Environmental Toxicity				
		WHO Ia	WHO Ib	H330	EPA carc	IARC carc	GHS* carc (1A, 1B)	IARC prob carc	EPA prob likel carc	GHS* muta (1A, 1B)	GHS* repro (1A, 1B)	EU EDC	GHS* C2 & R2	very bio acc	very pers water, soil or sediment	very toxic to aq. Organism	highly toxic bees
zeta-Cypermethrin	Acute, Environment		1														1
Zinc phosphide	Acute		1														
Ziram	Acute			1													
Z-Phosphamidon	Acute	1															

## Appendix C: Areas of High Conservation Value (Requirement 9-1)

The Land Conversion (9-1) requirement for the Sustainable WA Winegrape Standard references sensitive habitat as well as areas of High Conservation Value (HCV). For an initial approach to the certification program, the HCV concept could be used to help define farm and farm areas that require assessment or that are not converted as part of the sustainability requirements in 9-1. Further explanation is provided below on a proposed approach leveraging the HCV concept that will be refined through stakeholder feedback and the certification pilot project.

International sustainability certification programs, including Forest Stewardship Council, have developed an approach for defining areas of High Conservation Value (HCV). The original definitions of HCV applied only to forest but is proposed to apply to any ecosystem type for the purposes of the Sustainable WA Winegrape Standard.

### The Six Categories of High Conservation Value Areas<sup>3</sup>

#### *HCV1. Species Diversity*

Concentrations of biological diversity including endemic species, and rare, threatened or endangered species, that are significant at global, regional or national levels.

#### *HCV2. Landscape Level Ecosystems*

Large landscape-level ecosystems, ecosystem mosaics and Intact Forest Landscapes (IFL) that are significant at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance.

#### *HCV3. Ecosystems and Habitats*

Rare, threatened, or endangered ecosystems, habitats or refugia.

#### *HCV4. Ecosystem Services*

Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes.

#### *HCV5. Community Needs*

Sites and resources fundamental for satisfying the basic necessities of local communities or indigenous peoples (for livelihoods, health, nutrition, water, etc...), identified through engagement with these communities or indigenous peoples.

#### *HCV6. Cultural Values*

Sites, resources, habitats and landscapes of global or national cultural, archaeological or historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or indigenous peoples, identified through engagement with these local communities or indigenous peoples.

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<sup>3</sup> Modified from HCV Network guidance "Common Guidance for the Identification of High Conservation Values" [https://hcvnetwork.org/wp-content/uploads/2018/03/HCVCommonGuide\\_English.pdf](https://hcvnetwork.org/wp-content/uploads/2018/03/HCVCommonGuide_English.pdf)