Oregon DEQ Division 33 Limited License Review Summary Sheet



Application Information

| _ • • | | | |
|------------------------|---|------------------------------|---|
| Applicant Name: | Chris Ramsey; Domaine Serene Vineyards and Winery, Inc. | Application Number: | LL-1995 |
| Basin & Sub-basin: | Willamette, Middle Willamette | Requested Water Amount: | 0.045 CFS from Well 1 (Polk 54400), 11.15 AF |
| Nearest Surface Water: | King Creek | Nearest Receiving Waterbody: | King Creek |
| Proposed Use: | Irrigation to establish 22.28 acres of grapes | Requested Period of Use: | March 1 through October 31 |

| Division 33 Geographic Area ☑ Statewide | | | |
|--|------|-------|---------------------|
| Statewide: Will the proposed use result in water quality impacts that will cause either "loss" or "net loss" of essential habitat of sensitive threatened or endangered (ST&E) fish species? (Note: the presence of ST&E fish species is determined by Oregon Department of Fish and Wildlife.) | □ No | ⊠ Yes | ☐ Insufficient data |
| Recommended License Conditions | | | |

- 1. Water Quality: All water use under this license shall comply with state and federal water quality laws. The licensee shall not violate any state and federal water quality standards, shall not cause pollution of any waters of the state, and shall not place or cause to be placed any wastes in a location where such wastes are likely to escape or be carried into the waters of the state by any means. The use may be restricted if the quality of source stream or downstream waters decrease to the point that those waters no longer meet existing state or federal water quality standards. Licensee is responsible for obtaining any necessary state and federal licenses.
- 2. Agricultural Water Quality Management Area Rules: The licensee shall comply with basin-specific Agricultural Water Quality Management Area Rules described in Oregon Administrative Rule Chapter 603-095. The licensee shall protect riparian areas, including through irrigation practices and the management of any livestock, allowing site capable vegetation to establish and grow along streams, while providing the following functions: shade (on perennial and some intermittent streams), bank stability, and infiltration or filtration of overland runoff.
- **3. Flow Restrictor:** The licensee shall install a flow control valve on the diversion system to limit use to the licensed rate. The valve shall be in place, functional, and verified by the Certified Water Rights Examiner before a certificate is issued. The valve or a suitable replacement shall remain in place for the life of the water right.

| Mitigation | Obligation | | ⊠ Yes |
|--------------|------------|---------|-------|
| iviitigation | COMPANION | 1 1 110 | |

Prior to issuance of a Proposed Final Order, the applicant shall submit a mitigation proposal that is of no less volume and rate than the licensed use. The proposal shall include water that is sourced upstream of the point of diversion or appropriation, or the uppermost point on the stream at which the potential for surface water interference occurs. If a surface water right is used for mitigation, it shall be transferred instream for the **March 1 through October 31** time period and of similar water quality. The applicant should contact their OWRD caseworker to discuss flow mitigation options. Flow mitigation is site-specific, therefore DEQ recommends written approval of the mitigation proposal by DEQ prior to issuance of a proposed final order.

Seasonal Limitations

| Reason for limitation | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|

| TM | DL: 2024 Willamette Critical period | | | | | \boxtimes | \boxtimes | \boxtimes | \boxtimes | \boxtimes | \boxtimes | | |
|------------|--|-----------------------------|--------------------------|---|---------------------------------|--------------------------------|---------------------------|---------------------------|----------------------------|-----------------------------|------------------------------|-----------------------------|---------------------|
| WA | AB: > 20% flow allocated | | \boxtimes | \boxtimes | \boxtimes | | | \boxtimes | \boxtimes | \boxtimes | | | |
| Oth | ner: | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| Ad | ditional Reviewer comments No | ⊠ Ye | es. | | | | | | | | | | |
| Cre cur | /RD has determined that POA (POLK sek, therefore the Potential for Substanulative effects from the proposed uses of essential habitat for ST&E fish sp | antial se will | Interf | erenc | e (PSI) is | deter | mined | per 0 | OAR 69 | 90-009 | -0040 | (4)(a). | The |
| Usi | ng WARs data at 50% exceedance for | r the V | Villam | ette F | River ab | ove the | Mola | lla Ri | ver, th | e mon | ths of | Febru | arv, |
| | rch, April, July, August, and Septemb | | | | | | | | | | | | ,, |
| thr | e 2024 Willamette Subbasins Temper ough October 31, and so no addition eragency consultation: [Describe and | al use | shoul | <mark>d occı</mark> | ır durin | g this c | ritical | <mark>perio</mark> | <mark>d unle</mark> | ss enti | rely m | nitigate | <mark>ed</mark> . |
| | s discussed?] NA | , 30,03 | carre | | . agency | COLISC | itatioi | | o mas | Conta | cica c | | ·u· |
| | Q review prepared by: Steve Page 1 | arrett | | | Date co | omplet | e : 2/2 | 1/20 | 25 | | | | |
| Ant | tidegradation Policy: The purpose of DEQ's Antidegradati quality to prevent unnecessary furth pollution, and to protect, maintain, all existing beneficial uses. Oregon's increased water use. Temporary Use or Net Benefit | ner de and er Antid | grada nhanc legrad | tion fr e exis [:] ation | om nev ting suri Policy a | v or inc face wa Ilows e | reased Iter qu xemp | d poir uality tions | it and to ens and co | nonpo ure the onditio | int so e full إ ns for | urces o protect new o | of tion of or |
| | Does the applicant propose a temporal has determined provides a net ecolor human health and welfare, for which to threatened and endangered specific to the sp | ogical l h the a ies? | benef applic | it, or a | a tempo as demo | rary (la nstrate ⊠ No | sting led that | less th t they | nan six will m Yes | mont ninimiz | hs) us e adv | e to pr erse ef | otect fects |
| | If yes, recommend approval of the a the habitat of ST&E fish species. You | | | | • | ondition | ns nec | essar | y to pr | otect | water | quality | y for |
| 2. | Outstanding Resource Water Does the applicant propose withdra for ST&E fish species? | wing o | directl | y fron | | tstandi ⊠ No | ng Re | | e Wat Yes | er with | n critic | :al hab | itat |
| | If yes, then prior to license issuance, question 7. | , the a | pplica | nt mu | ist prov | ide suit | able f | low m | nitigati | on. Yo | u may | skip t | 0 |
| 3. | Water Quality Limited Is this source Water Quality Limited downstream review to 6 th field HUC oxygen, pH, etc.). | | | | | | | can af | | | | | lved |

Integrated Report 303(d) List Summary Table

| Assessment Unit Name | Assessment Unit Description | Parameter | | Status* | Beneficial Uses |
|-------------------------|--|------------------------|----------|------------|-----------------------|
| | | Dissolved Oxygen spa | awn | Category 5 | Fish and Aquatic Life |
| Willamette | Willowette Claugh | Biological Criteria | | Category 5 | Fish and Aquatic Life |
| River | Willamette Slough to Chehalem Creek | Temperature year | ar-round | Category 5 | Fish and Aquatic Life |
| Rivei | to chenalem creek | Temperature spa | awn | Category 5 | Fish and Aquatic Life |
| | | Toxics (DDT 4,4; Dield | rin) | Category 5 | Fish and Aquatic Life |
| | | | | | |
| | | | | | |

*Integrated Report Category

Category 4 - Data indicate that at least one designated use is not supported, but a TMDL is not needed to address the pollutant

Category 4A - Clean-up plans (also called TMDLs) that will result in the waterbody meeting water quality standards and supporting its beneficial uses have been approved

Category 4B - Other pollution control requirements are expected to address pollutant of concern and will result in attainment of water quality standards

Category 4C - The impairment is caused by pollution, not a pollutant. For example, flow, or lack of flow, are not considered pollutants, but may be affecting the waterbody's beneficial uses

Category 5 - Data indicate a designated use is not supported or a water quality standard is not attained and a TMDL is needed. This category constitutes the Section 303(d) list that EPA will approve or disapprove under the Clean Water Act

Analysis:

The following parameters can be impacted by additional water withdrawals:

Dissolved Oxygen

Decreased dissolved oxygen levels adversely impact sensitive, threatened, and endangered fish. Oregon's dissolved oxygen limits are based on the most sensitive species and the life history stage of those species at the location and season of concern. The Willamette River does not meet Oregon's spawning dissolved oxygen standards. Reduced flows may increase water temperature and reduce surface area and turbulence, which can decrease dissolved oxygen. Therefore, reducing flow in waterbodies that are connected to downstream dissolved oxygen-impaired waterbodies, such as King Creek, could result in lower stream dissolved oxygen levels and stressed conditions for aquatic life, particularly during the summer months when stream flow is lowest.

Biological Criteria

Waters of the State must be of sufficient quality to support aquatic species without detrimental changes in the resident biological communities. Oregon's biological criteria narrative standard is based on EPA guidance recommending using biological community assessments as an indicator for aquatic life beneficial use support. Resident biological communities are the local food webs that support fish and other aquatic life. Reduced flows, habitat loss, and increases in pollutant loads or concentrations may degrade the biological community onsite or downstream and therefore result in the diminution of habitat for ST&E species.

Temperature

Increases in temperature adversely impact sensitive, threatened, and endangered fish. Fish require different temperature based on species and life history stage. Oregon's temperature limits are based on the most sensitive species and the life history stage of those species at the location and season of concern. The Willamette River does not meet Oregon's year-round or spawning stream temperature standards. Generally, water temperatures increase as flow decreases. Therefore, reducing flow in waterbodies that are connected to downstream temperature-impaired waterbodies, such as King Creek, could result in higher stream temperatures and stressed conditions for aquatic life, particularly during the summer months when stream flow is lowest. If year-round standard triggered: The critical warm period when stream conditions are most likely to exceed the year-round temperature standards is July 1 – September 30.

Recommended Conditions: [Consider if water quality can be protected by limiting the rate and quantity of water used, period of use, or by including other license conditions.]

Water Quality, Agricultural Water Quality Management Area Rules, Mitigation, Flow Restrictor

4. Total Maximum Daily Load Summary

Are there TMDLs established for parameters identified as being affected by flow modification? □ No ☒ Yes

Analysis:

Middle Willamette

The TMDLs that include the Middle Willamette Subbasin are the 2006 Willamette Basin Temperature TMDL, 2006 Willamette Basin Bacteria TMDL, 2019 Willamette Basin Mercury TMDL, and the 2024 Willamette Subbasins Temperature TMDL. The 2006 Willamette Basin Temperature TMDL remains in effect for the Willamette River, Willamette Slough, Mission Lake, and Lambert Slough until the Amendment to the 2024 Willamette Subbasin Temperature TMDL is approved. All other perennial and intermittent streams in this subbasin are currently regulated for stream temperature under the 2024 Willamette Subbasins Temperature TMDL.

The critical condition for stream temperature and heat loading is the seasonal period of maximum stream temperatures and lowest stream flows. Maximum stream temperatures are a function of combining the effects of atmospheric inputs (solar radiation) and low stream flows. In the Middle Willamette Subbasin, the critical period is May 1 – October 31

Recommended Conditions:

Water Quality, Agricultural Water Quality Management Area Rules, Mitigation, Flow Restrictor

5. Cumulative Withdrawals Effects

| Is it likely that the proposed activity, together with e | existing withdrawals i | in the OWRD's Water | Availability Basin |
|--|------------------------|---------------------|--------------------|
| (WAB), will lower water quality and impair aquatic I | ife? \square No | | |

Water Availability and Cumulative Impacts Summary Table

Percent of natural flow = (consumptive use/natural stream flow)*100. See Appendix for additional instructions.

WILLAMETTE R > COLUMBIA R - AB MOLALLA R

| Watershed ID | Exceedance Level | Month | Natural Stream Flow | Consumptive Use | Expected Stream Flow | Reserved Stream Flows | Instream Requirement | Net Water Available | Percent of Flow |
|-----------------|---------------------|-------|---------------------------|--------------------|----------------------------|-----------------------------|-------------------------|------------------------|--------------------|
| 182 | 50 | JAN | 38500 | 2310 | 36200 | 0 | 1500 | 34700 | 6 |
| 182 | 50 | FEB | 37100 | 7490 | 29600 | 0 | 1500 | 28100 | 20.18868 |
| 182 | 50 | MAR | 32800 | 7260 | 25500 | 0 | 1500 | 24000 | 22.13415 |
| 182 | 50 | APR | 28300 | 6910 | 21400 | 0 | 1500 | 19900 | 24.41696 |
| 182 | 50 | MAY | 22200 | 4250 | 17900 | 0 | 1500 | 16400 | 19.14414 |
| 182 | 50 | JUN | 12500 | 1980 | 10500 | 0 | 1500 | 9020 | 15.84 |
| 182 | 50 | JUL | 6330 | 1810 | 4520 | 0 | 1500 | 3020 | 28.594 |
| 182 | 50 | AUG | 4290 | 1650 | 2640 | 0 | 1500 | 1140 | 38.46154 |
| 182 | 50 | SEP | 4420 | 1390 | 3030 | 0 | 1500 | 1530 | 31.44796 |
| 182 | 50 | OCT | 6690 | 753 | 5940 | 0 | 1500 | 4440 | 11.25561 |

| 182 | 50 | NOV | 19000 | 887 | 18100 | 0 | 1500 | 16600 | 4.668421 |
|-----|----|-----|----------|---------|----------|---|---------|----------|----------|
| 182 | 50 | DEC | 40700 | 975 | 39700 | 0 | 1500 | 38200 | 2.395577 |
| 182 | 50 | ANN | 15200000 | 2250000 | 13000000 | 0 | 1090000 | 11900000 | 14.80263 |

| | Monthly flow in Cubic Feet per Second (CFS). Annual flow in Acre Feet (AF)). Highlight months that exceed 20% of percent of flow. |
|----|--|
| 6. | Flow Modification Compliance with State and Federal Water Quality Standards Based on responses to questions 3, 4, and 5, is the use in compliance with state and federal water quality standards or can compliance with state and federal water quality standards be assured, and ST&E habitat loss prevented through flow mitigation and/or by imposing license condition(s)? □ No □ Yes |
| | Recommended Conditions: |
| | Flow Restrictor, Mitigation |
| | |
| 7. | Compliance with other State and Federal Water Quality Standards ORS 468B.025 prohibits pollution of waters of the state. Are there additional water quality impairments that would result from this proposed used by degrading surface water or groundwater quality? ☑ No ☐ Yes |
| 7. | ORS 468B.025 prohibits pollution of waters of the state. Are there additional water quality impairments that would result from this proposed used by degrading surface water or groundwater quality? |

PRE-PROPOSED FINAL ORDER ACTIONS

DEQ recommends that the applicant provide suitable replacement water as mitigation for anticipated impacts to water quality and more specifically the habitat of sensitive, threatened, and endangered fish species. Additional mitigation may be required from other Interagency Review Team members (for example: OWRD may require mitigation for periods when water is not available). Surface water flow mitigation is unlikely to provide the same benefit that groundwater can provide to gaining stream reaches. However, if groundwater mitigation is unavailable within the same aquifer, surface water mitigation may provide suitable mitigation.

Flow Mitigation Obligation:

Prior to issuance of a Proposed Final Order, the applicant shall submit a mitigation proposal that is of no less volume and rate than the licensed use. The proposal shall include water that is sourced upstream of the point of diversion or appropriation, or the uppermost point on the stream at which the potential for surface water interference occurs. If a surface water right is used for mitigation, it shall be instream for the *month - month time period* and of similar water quality. The applicant should contact their OWRD caseworker to discuss flow mitigation options.

Riparian: If the riparian area is disturbed in the process of developing, modifying or repairing a point of diversion under this water use license, the licensee shall be responsible for restoration and enhancement of such riparian area in accordance with the Oregon Department of Fish and Wildlife's Habitat Mitigation Policy described in Oregon Administrative Rule OAR Chapter 635-415. Prior to development, modification or repairs at the point of diversion, the licensee shall submit, to the Oregon Water Resources Department, either a Riparian Mitigation Plan approved in writing by Oregon Department of Fish and Wildlife (ODFW) or a written declaration from ODFW that riparian mitigation is not necessary. The licensee shall maintain the riparian area for the life of the license and subsequent certificate per the approved Riparian Mitigation Plan. The licensee is hereby directed to contact the local Oregon Department of Fish and Wildlife Fish Biologist prior to development of the point of diversion.

Water Storage Construction: The applicant shall locate the reservoir outside of the stream's natural channel. identify waterbody and set back to prevent stream capture and justification for distance selected.

(Note to reviewer: The 1200C license requires a 50-foot setback, which is cited from the National General Construction License OAR-660-023-0090(5). Requiring the storage reservoir to be outside of the mapped 100 year floodway may also be a protective buffer.)

Construction Activities: 1200-C NPDES Stormwater Construction license coverage is required from DEQ or Agent for construction activities (clearing, grading, excavation, grubbing, stumping, demolition, staging, stockpiling and other land disturbing activities) that will disturb one or more acres, or that will disturb less than one acre of land but is part of a common plan of development or sale that will ultimately disturb one or more acres of land and have the potential to discharge to surface waters or to a conveyance system that leads to surface waters of the state.

In-Water or Riparian Construction: For in-water or riparian construction, licensee may be required to obtain additional licenses from the Oregon Department of State Lands, the U.S. Army Corps of Engineers, and the DEQ Section 401 certification program prior to construction. The applicant must contact these agencies to confirm requirements.

Herbicide Applications: When herbicide application is within three feet of water, the licensee is responsible for ensuring that herbicide application laws are met, and that they obtain from DEQ any necessary pesticide application licenses, including the 2300-A Pesticide General License or the 2000-J NPDES General License. Polluted return flows are not allowed to enter waters of the state per ORS 468B.025(1).

STANDARIZED MENU OF CONDITIONS

Water Quality: All water use under this license shall comply with state and federal water quality laws. The licensee shall not violate any state and federal water quality standards, shall not cause pollution of any waters of the state, and shall not place or cause to be placed any wastes in a location where such wastes are likely to escape or be carried into the waters of the state by any means. The use may be restricted if the quality of source stream or downstream waters decrease to the point that those waters no longer meet existing state or federal water quality standards. Licensee is responsible for obtaining any necessary state and federal licenses.

Agricultural Water Quality Management Area Rules: The licensee shall comply with basin-specific Agricultural Water Quality Management Area Rules described in Oregon Administrative Rule Chapter 603-095. The licensee shall protect riparian areas, including through irrigation practices and the management of any livestock, allowing site capable vegetation to establish and grow along streams, while providing the following functions: shade (on perennial and some intermittent streams), bank stability, and infiltration or filtration of overland runoff.

Flow Restrictor: The licensee shall install a flow control valve on the diversion system to limit use to the licensed rate. The valve shall be in place, functional, and verified by the Certified Water Rights Examiner before a certificate is issued. The valve or a suitable replacement shall remain in place for the life of the water right.

Limit Rate: Water withdrawal shall be limited to *Enter CFS or AF for the defined period, or a month by month rate or volume*.

Limit Period of Use: Water use shall be limited to the period: *start date through end date*.

(Note to reviewer: Do not split the irrigation season. Require mitigation if water is not available during the requested time period.)

Limit Diversion: The licensee shall not divert water under this water use license unless streamflow in the waterbody name is at or above *CFS* cubic foot per second, as determined at **Gaging Station ID** .

Off-Channel Stored Water Releases: The licensee shall not release polluted water from this off-channel reservoir into waters of the state except when the release is directed by the State Engineer to prevent dam failure.

On-Channel Reservoir: The licensee shall design and operate the water storage facility such that all waters within and below the reservoir meet water quality criteria. The licensee shall develop a reservoir operations plan that details how water quality criteria and standards will be met. A Certified Water Rights Examiner shall verify that the reservoir operations are consistent with the plan before a certificate is issued. The reservoir operator shall maintain a copy of the plan and make it available for review upon request.

Restrict Reservoir Release: To prevent pollution downstream, the licensee shall not release water from the reservoir when the flow at Gaging Station ID (gage name) is below the Mean Daily Discharge of *CFS* (discharge which was equaled or exceeded for 90% percent of the time) except when the release is directed by the State Engineer to prevent dam failure.

Live Flow: Once the allocated volume has been stored, licensee shall pass all live flow downstream at a rate equal to inflow, using methods that protect instream water quality.

Lining: The licensee shall line the reservoir with *include material or allowable infiltration rate* to minimize seepage and protect groundwater quality per Oregon Administrative Rule 340-040. The liner is to be in place, inspected,

and approved by the Certified Water Rights examiner prior to storage of water.* If the liner fails, the water user shall replace it within one calendar year. **Site-Specific Condition**: The licensee shall

^{*} OAR 690-410-0010(2)(a), OAR 690-310-0120, OAR 690-310-0140

Appendix: General Overview, Instructions for Water Availability Analysis, and Process Flow Chart

General Overview

The purpose of OAR Chapter 690, Division 33 is to aid the Oregon Water Resources Department (OWRD) in determining whether a proposed use will impair or be detrimental to the public interest with regard to listed sensitive, threatened, or endangered (ST&E) fish species. Oregon's stream temperature, dissolved oxygen (DO), pH and several other water quality standards are based on the life cycle needs of salmonids and other resident fish and aquatic life. Exceeding the standards can disrupt the life cycle of a ST&E fish species and may cause death. In addition, OWRD must consider water quality impacts as part of a public interest review, OAR 690-310-0120. Water quality impacts and conditions unrelated to ST&E species should be noted as "Division 310" in the recommendations to OWRD. The DEQ's Water Right Application Review Procedures document contains a full description of the review process.

The two main categories of Division 33 reviews are based on the geographic distribution of ST&E fish species:

- o **For Proposed Uses in the Columbia River Basin,** reviews must determine whether a proposed use complies with existing state and federal water quality standards. Upper Columbia applications specifically require applicants to provide evidence that the proposed use complies with existing state and federal water quality standards. <u>Geographic scope</u>: Columbia River Basin (includes all waters that ultimately drain into the Columbia River).
- o **For Proposed Uses Statewide**, review is conducted under the "Statewide review" procedure. Statewide reviews must determine whether a proposed use may affect ST&E fish species habitat. The statewide review procedure is intended to identify license conditions that can prevent the "loss" or "net loss" of essential habitat of ST&E fish species. When license conditions cannot be identified that meet this standard, then the DEQ recommends denial of the license. <u>Geographic scope</u>: all areas outside the Columbia River Basin where OWRD determines ST&E fish species are present.

Instructions for Populating the Water Availability Summary Table using data from OWRD's WAB (Section 5)

- Open OWRD's Water Availability Reporting System.
- Search for the water availability basin of interest. Select 50% exceedance. The 50% exceedance stream flow is the stream flow that occurs at least half of the time.
- The water availability analysis will display a nested list of watersheds that contain the POD. Select the highest nesting order WAB that contains the POD.
- Download to an Excel spreadsheet. Percent of flow is calculated using this equation:

$$Percent of Flow = \frac{Consumptive Use}{Natural Stream Flow} * 100$$

You may choose to add the proposed rate (or storage amount) to the consumptive use.

Instructions for Water Availability Analysis

To complete Section 6, review and consider the cumulative impact of consumptive withdrawals using the OWRD WAB. All water withdrawals and the following factors should be considered when conducting a water availability analysis.

- Instream Flow: Consider the percent of natural flow removed from the stream in each month (see right-most column in Water Availability and Cumulative Impacts Summary Table). Based on best professional judgment, evaluate if the cumulative withdrawal is likely to cause impairment to aquatic life or water quality. Water quality standards are established to protect aquatic life. In scientific literature, researchers have identified ecological harm occurring when flows are reduced by >6-35% of daily flow¹. Consider the seasonality of any listings and season of withdrawal to determine impact for each month of the year.
- Antidegradation: Rule 340-041-0004 applies: withdrawals cannot cumulatively increase a waterbody's temperature by more than 0.5 degrees Fahrenheit or cause a 0.1 mg/l decrease in dissolved oxygen from the upstream end of a stream reach to the downstream end of the reach so long as it has no adverse effects on threatened and endangered species. See OAR 340-041-0004(3)-(5) for a description in rule of activities that do not result in lowering of water quality.
- Flow modification: Consider if cumulative withdrawals are contributing to flow modification and a likely limiting factor in the waterbody at certain times of the year. Temperature and dissolved oxygen are flow-related parameters. When streamflow is reduced, assimilative capacity is reduced. As a waterbody heats up, dissolved oxygen concentrations decline. Reduced stream flows (including groundwater inputs to streamflow), exacerbate temperature and/or dissolved oxygen impairments.
- **Temperature**: Increases in temperature or a reduction in dissolved oxygen adversely impacts ST&E fish. Fish require different temperature and concentrations of dissolved oxygen based on species and life history stage. Oregon's temperature and dissolved oxygen limits are based on the most sensitive species and the life history stage of those species at the location and season of concern. Additional heat or reduction in dissolved oxygen concentrations will further impact these species habitat. Reduced flows can also increase the concentrations of phosphorous, bacteria, pesticides and metals.

Instructions for Calculating "Limit Diversion" Rate

This condition is selected to limit withdrawals once the cumulative withdrawals in the watershed have exceeded the protective threshold of 20 percent and/or the ISWR is not fully protective of aquatic life. A different value can be selected, but the reviewer should state why a particular percent was selected.

"Natural stream flow" is obtained from OWRD's Water Availability Reporting System. The condition is applied on a monthly timeframe based on OWRD's data.

"Natural stream flow" - (percent of flow * "natural stream flow") = Expected Stream Flow

The applicant would have to stop using when instream flows drop below the Expected Stream Flow.

Example:

Natural stream flow for a particular month = 1200 CFS

1200 CFS - (.2 * 1200 CFS) = 960 CFS

¹ Richter BD, Davis MM, Apse C, Konrad C. 2011. Short Communication, A Presumptive Standard For Environmental Flow Protection. River Research and Applications. Published online in Wiley Online Library (wileyonlinelibrary.com), DOI: 10.002/rra.1551

DEQ Water Right Review Flow Chart

