

Proposed Winery General Permit

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Agenda



PRESENTATION

- Background
- Why Develop a General Permit?
- Why It Matters
- **Questions**
- Collaboration and Partnerships
- Permit Considerations
- Permit Coverage
- **Questions**

LISTENING SESSION (If time allows)

- Additional Comments



Background

Department of Ecology

- Water Quality Program
 - Delegated by U.S. EPA to protect Water Quality.
- State's Water Pollution Control Act: RCW 90.48.160:

“Any person who conducts a **commercial or industrial operation of any type** which, results in the disposal of solid or liquid waste material into waters of the state, including discharges into municipal sewer systems, **shall obtain a permit before disposing of such waste.**”

What is a Waste Discharge Permit?

These permits describe:

1. What the discharger must do to protect water quality.
2. The types of monitoring and reporting the discharger must perform.
3. Limits on how much pollution can be discharged to maintain water quality.

Permit Types

- **Individual Permit**

- Covers a specific discharger and location
- Higher permit fees
- Time-consuming

- **General Permit**

- Covers a group of similar dischargers at diverse locations
- Lower permit fees
- Quicker permit issuance

Current ECY General Permits

- Aquatic Pesticide
- Boatyards
- Concentrated Animal Feed Operations
- Fresh Fruit Packing
- Sand and Gravel
- Stormwater
- Water Treatment Plants
- Upland Fin-Fish
- Industrial Stormwater

Permit Fees

- RCW 90.48.465
- Fees cover permit related expenses such as:
 - Processing permit applications and modifications
 - Monitoring and evaluating compliance with permits
 - Conducting inspections
 - Reviewing plans
 - Overhead expenses
- Currently individual winery permits fees range from \$350-\$6,000
- ECY is considering:
 - Revaluating fees
 - Changing the current metric from gallons of wastewater per day to gallons of wine produced per year
 - Scaling permit fees based on the size of the winery



Why Develop a General Permit?

Primary Purpose

- Protect Water Quality.
- Comply with State's Water Pollution Control Act (RCW 90.48.160):

“Any person who conducts a **commercial or industrial operation of any type** which, results in the disposal of solid or liquid waste material into waters of the state, including discharges into municipal sewer systems, **shall obtain a permit before disposing of such waste.**”

General Permit Benefits

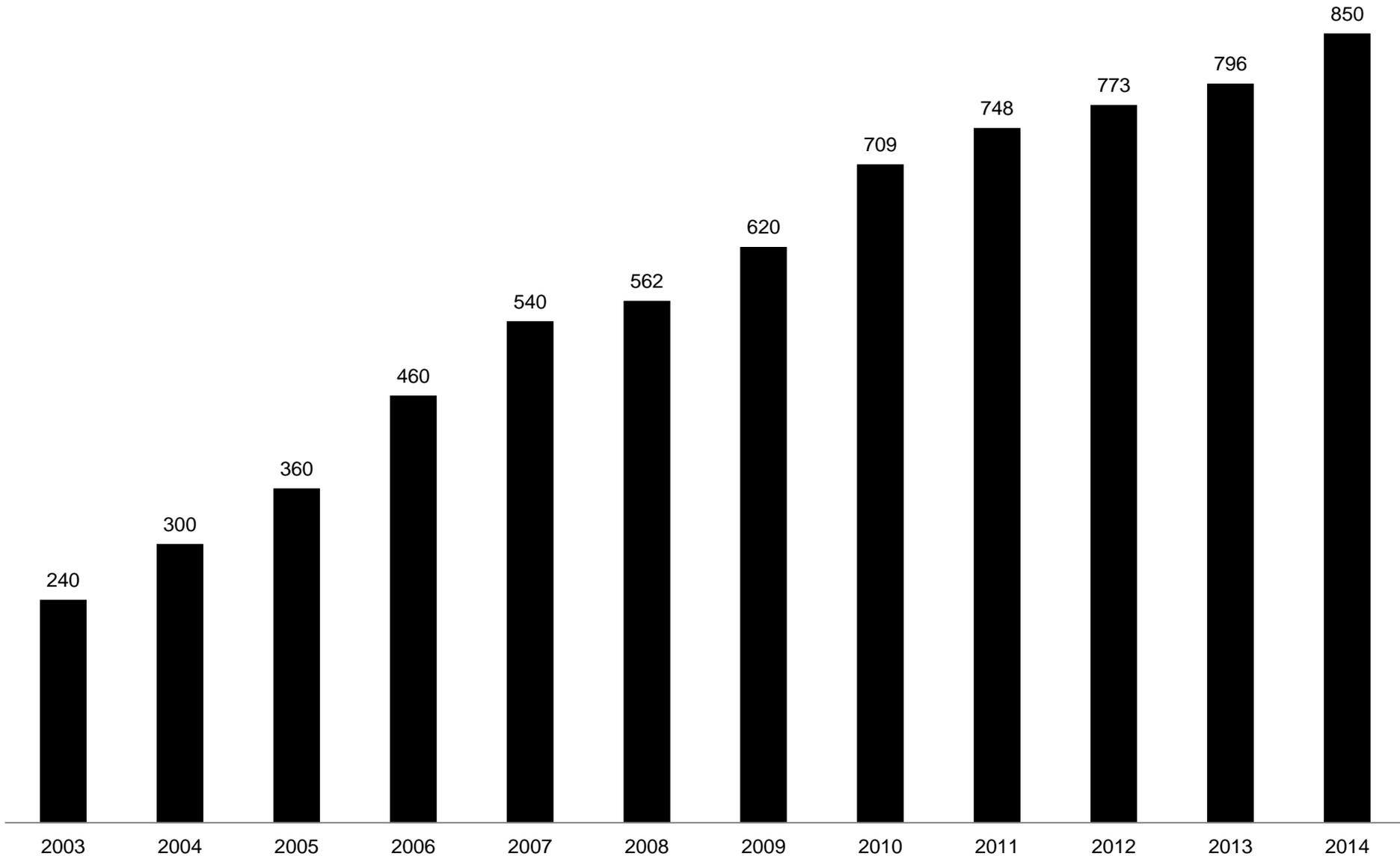
- Simplified, efficient process.
- Cheaper than individual permit.
- Quicker permit issuance.
- Provides consistency:
 - 13 wineries have individual permits from Ecology.
 - Others pay fees to discharge to a delegated sewage treatment plant.
 - The majority of wineries do not have permission to discharge their waste.

Industry Growth Continued

- Washington is the second largest wine producer in U.S.
 - Approximately 850 wineries.
- Provides an estimated \$8.6 billion to our state, 27,000 jobs, and \$1.06 billion in wine-related tourism.
- Over 20 million gallons of wine produced in 2013.
 - Assuming 1 gallons of wine = 6 gallons of wastewater.
 - Approximately 120 million gallons of wastewater was produced in 2013.

Industry Growth of Washington Wineries Per Year

(Source: Washington State Liquor Control Board,
Washington Wine Commission)



California

(Largest Wine Producer in U.S.)



Oregon

(Third largest wine Producer in U.S.)





Why It Matters

Raw Winery Wastewater

| Parameter | Units | Typical Winery Wastewater | | Typical Domestic Wastewater | Groundwater Quality Standards | Sewage Treatment Plant |
|-------------------------------|-------|---------------------------|-----------|-----------------------------|-------------------------------|------------------------|
| | | Crush | Non-Crush | Household | Numeric Criteria | Pre-treatment Standard |
| pH | SU | 2.5-9.5 | 3.5-11 | 6-9 | 6.5-8.5 | 6-9 |
| BOD5 | mg/L | 500-12000 | 300-3500 | 35-100 | - | 45/30* |
| Settleable Solids | mg/L | 25-100 | 2-100 | 5-20 | - | - |
| Total Suspended Solids | mg/L | 40-800 | 10-400 | 200-290 | | 45/30* |
| Total Nitrogen | mg/L | 1-40 | 1-40 | 20-70 | - | - |
| Nitrate | mg/L | 0.5-5 | - | 35-100 | 10 | - |
| Phosphorus | mg/L | 1-10 | 1-40 | 4-12 | - | - |
| Total Dissolved Solids | mg/L | 80-2900 | 80-2900 | 270-860 | 500 | - |
| Sodium | mg/L | 35-200 | 35-200 | 40-70 | - | - |

Source; California Regional Water Quality Control Board, General Waste Discharge Requirements, Order No. R3-2008-0018

* 7 day/ 30 day average

Wastewater Implications

Biochemical Oxygen Demand (BOD)

- Ranges from 1,000 to 12,000+ mg/liter.
- 5 to 50 times typical domestic sewage.
- Can affect crop growth.

Acidic pH

- As low as 2.5.
- Below discharge guideline.
- Corrosion of pipes/ failed sewers.
- Affects solubility of heavy metals in the soil.
- Can affect crop growth.

High solids levels (TSS):

- 800 mg/liter TSS during crush.
- Plugged pumps/fill wet wells.

Common Discharge Methods

- 1. Irrigation-** Engineered system for applying wastewater to crops. The wastewater is treated by chemical, biological, and physical processes prior to and as it flows through the soil.
- 2. Septic Tank-Drainfield-** Engineered system which discharges wastewater directly into the ground. Should be designed specifically for industrial wastewater.
- 3. Lagoons-** In-ground, engineered structures which rely on aeration for treatment or evaporation for water removal.
- 4. Publicly Owned Treatment Plant (POTW)-** A publically-owned treatment works. This is a sewage treatment plant and the collection system.

Irrigation

Pros

- Simple, performed on-site.
- Requires minimal technical expertise.
- Organic, reduces fertilizer use, and augments soil.
- Beneficial reuse of water. Saves water resources.
- Suitable for remote locations.

Cons

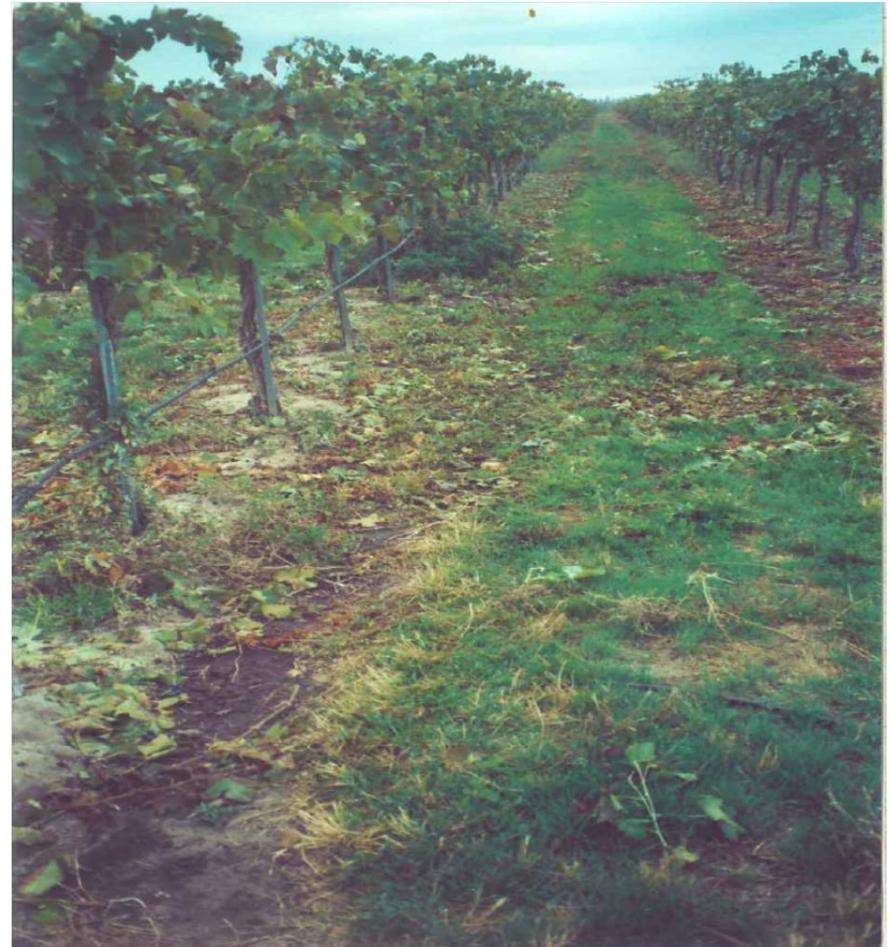
- Objectionable Odors, when improperly managed.
- Requires adequate land area.
- Can lead to anaerobic soil conditions.
- Can cause runoff of untreated wastewater to surface water.
- Could contaminate groundwater.
- Can affect solubility of metals in soil (i.e. manganese and arsenic).

Spray Irrigation

Properly Managed System



Poorly Managed System



Septic System

Pros

- Cheap, many wineries use one septic system to treat all their wastewater.
 - Not a best management practice.
- Can be used in remote locations.
- No odor, if properly maintained.

Cons

- Commingling industrial and domestic waste streams is prohibited by Dept. of Health:
 - Small systems- WAC 246-272A-0020
 - Large Systems- RCW 70.118B.020
- Typically designed for domestic wastewater.
- **Not** designed for intermittent flows of high strength, industrial wastewater.
 - Upgrading system can be expensive.
- No beneficial reuse of water.
- Overwhelmed systems lead to:
 - Anaerobic soils at drain field.
 - Groundwater pollution.

Example: Failed Drainfield



Lagoons

Pros

- Can handle intermittent flows and shock loading.
- Advantage of winter storage to prevent anaerobic soil conditions and use when vines need water.
- Can be used to augment irrigation.
- Double lined evaporation lagoons with leak detection **do not** need a permit.

Cons

- Large footprint.
- Objectionable odors.
- Unlined and Single-lined lagoons:
 - Undetected leaks.
 - Potential groundwater contamination.
 - May require monitoring wells and/or water balance calculations recognize leaks.
- Minor sludge accumulation.

Example: Unlined Lagoon



Double-Lined Evaporation Lagoon with Leak Detection



Discharges to Publicly Owned Treatment Works (POTW)

Pros

- No significant capital outlay.
- Easy option for wineries located near a POTW.
- Technical skill to properly treat wastewater.
- Often have excess capacity to accept large volumes of wastewater.

Cons

- Capacity might be limited by other seasonal discharges.
- May require pretreatment to adjust pH or lower strength before sending to POTW.
- High volumes of high strength winery wastewater can cause treatment upsets.
 - Negative environmental impacts.
 - Violations of POTW discharge permits.

Success Story: Central WA Winery

- Began discharging to City of Mattawa treatment plant in 2005:
 - Multiple treatment upsets/discharge violations led to canceling industrial user contract.
- **Port of Mattawa Treatment Plant (2008):**
 - Designed specifically for winery wastewater discharges.

Port of Mattawa

Aeration Basin



Settling Pond





Questions?



Collaboration & Partnership

Internal Team



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External Team

| Wineries | Associations & Consultants | POTWs |
|-----------------------|---------------------------------------|--------------|
| Vinmotion | WAWGG | Grandview |
| Constellation Brands | Washington Wine Institute | Kennewick |
| E&J Gallo | Winerywise | Richland |
| Chateau Ste. Michelle | Kennedy Jenks | |
| Claar Cellars | Lane Environmental Inc. | |
| Lost River Winery | | |
| 14 Hands | | |
| Ginkgo Forest | | |
| Madsen Family Cellars | | |
| Brian Carter Cellars | | |
| Hightower Cellars | | |
| Treveri Cellars | | |

Key Dates

| <u>Event</u> | <u>Dates</u> (Subject to change) |
|--|---|
| Website/listserv | May 2014 |
| Form Internal/External Advisory groups | April/December 2014 |
| Preliminary Draft Permit and Public Workshops | Expected August 2015 - 45 day comment period |
| Formal Draft Permit and Public Workshops | Expected January 2015 - 45 day comment period |
| Projected Permit Effective Date | Expected March 2016 |



Permit Considerations

Permit Considerations

- Neighboring states:
 - California & Oregon
- Diverse industry:
 - Small, medium, large, bulk production operations
 - 95 % of WA's wine produced by 5% of wineries
 - Recognize potential economic impacts to small wineries
- Varying environmental risks:
 - Winery size
 - Nutrient loadings
 - Soil type
 - Terrain
 - Depth to groundwater
 - Distance to surface water

California's Approach to Small Wineries

Central Coast Region

Waiver :

- Less than or equal to 10,000 cases or 26,000 gallons of wine per year.
- **AND** prove depth to groundwater at the:
 - Disposal area is greater than 50 feet.
 - Beneficial reuse site is greater than 8 feet.

North Coast Region

Waiver:

- Non-Commercial ;
- **AND** produce less than 200 gallons of wine per year.

Oregon's Approach to Waste Discharge Requirements

- Permit Coverage:
 - Wineries who discharge less than 25,000 gallons of wastewater per day to land.
 - No permit required for discharges to POTWs.
- Industrial and domestic waste streams must be kept separate.
 - Also a requirement in Washington.

Active Washington Wineries Per Washington State Liquor Control Board Data (2013)

| | | |
|--|-----|-------------------|
| Total licensees | 767 | |
| No Data: (New licensees; production facilities; missing reports; export only) | 160 | |
| Less than 500 gallons of wine per year | 184 | } Small Wineries* |
| 500 - 25,000 gallons of wine per year | 389 | |
| Greater than 25,000 gallons of wine per year | 34 | |

**The Family Wine Group of Washington defines small wineries as those producing less than 25,000 gallons of wine per year.*

Impacts to Small Wineries

- Clarifying, consolidating, or simplifying the compliance and reporting requirements.
- Establishing differing compliance or reporting requirements or timetables.
- Establishing performance rather than design standards.
- Exempting small wineries from parts of the general permit.
- Economic Impact Analysis (WAC 173-226-120).



Permit Coverage

The permit will apply to *new and existing wineries* that discharge *winery process wastewater* to land or to a non-delegated publicly owned treatment works (POTW) during any stage of the winemaking process.

WA's Delegated- POTWs

- King County (South, Westpoint, Carnation, Vashon, Brightwater)
- Lynnwood
- Everett
- Vancouver (Marine Park & Westside)
- Tacoma (#1 & #3)
- LOTT Budd Inlet & Martin Way
- Pierce County & Cascadia
- Yakima
- Richland
- City of Spokane
- Spokane County RWRF, Latah Creek, & Co-permittee w/ City
- Walla Walla
- Quincy
- Pasco (Municipal & Industrial)

Winery Process Wastewater:

Includes

1. Any water which, during wine manufacturing or processing, comes into direct contact or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

(i.e. Water that comes into contact with: pomace, lees, bottle and barrel rinse water, and equipment/floor wash water.)

Does NOT Include

1. Waste produced by agricultural operations associated with the growing of wine grapes.
2. Domestic wastewater (i.e. satellite tasting rooms and restaurant operations)

Permit Required

Wineries that produce greater than 500
gallons of wine per year.

No Permit Required

- Vineyards, wine grape growers, or satellite tasting rooms.
- Wineries that discharge only to a double-lined evaporation lagoon with leak detection.
- Wineries that discharge only to delegated STP, as authorized by the STP.

Excluded or Additional Coverage

- Wineries who discharge greater than 25,000 gallons of process wastewater per day to a POTW:
 - Significant Industrial Users category.
 - Need individual permit coverage.
- Stormwater discharges:
 - May need additional coverage under Industrial Stormwater General Permit.
- Discharges to surface waters of the state:
 - Need Individual Permit.

Questions?

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<http://www.ecy.wa.gov/programs/wq/permits/winery.html>

Listening Session

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