

Solving Winery Wastewater Challenges in Small/Medium-Sized Wineries

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Founder/CEO

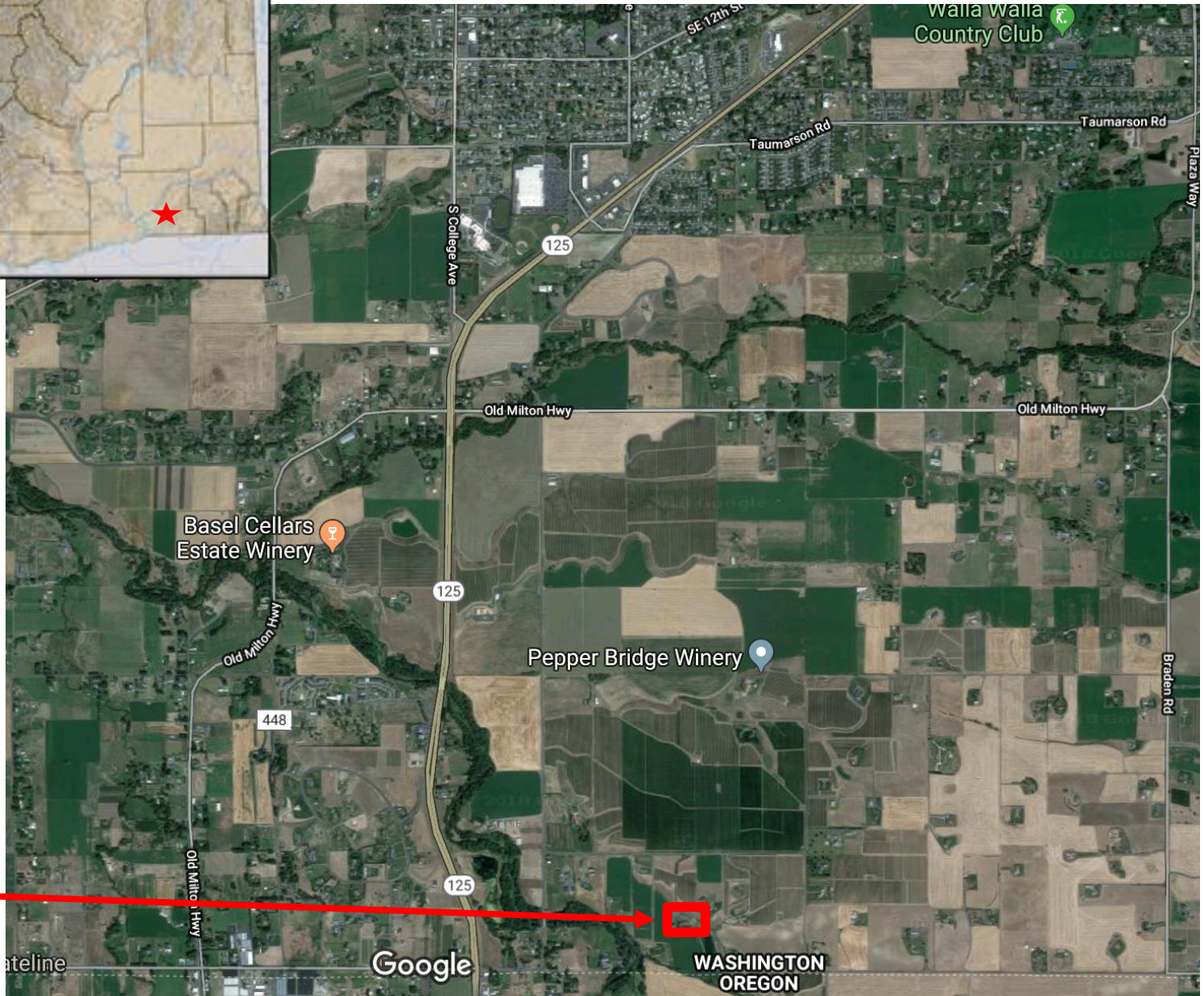
Megan Rounds P.E.
Water Quality Permit Unit

The **WestOne Group** LTD



West One Group Winery





West
One
Group
Winery



West One Group Winery



General Winery Permit

- Washington's first Winery General Permit regulates discharges of process wastewater from wineries to land, groundwater, and wastewater treatment plants. No surface water discharges are allowed under this permit.
- The permit was issued on May 17, 2018, **goes into effect on July 1, 2019**, and expires on July 1, 2024.



Wineries in Washington State

According to the Washington State Wine Commission, the number of Washington winemaking facilities increased by 23.8% from 2009 to 2013. Likewise, wine produced in Washington increased from just under **two million cases** in 1994 to **14.8 million cases** in 2013.



Water Used

The conversion of grapes into wine is a multi-step process that uses a significant amount of water.

The average facility uses about

- Eleven hundred (1,100) gallons of water per ton of grapes.
- Six (6) gallons of water for every one (1) gallon of wine produced.



Wastewater Calculation

- 14.8 million cases in **2013**
- Standard bottle of wine is **750** milliliters (ml), meaning a case of **12** bottles contains **9** liters, or **2.378** gallons per case.



Wastewater Calculation

Continued

- 6 gallons wastewater per gallon of wine produced x 2.3 gallons of wine per case x 14.8 million cases produced.
- 204 million gallons of wastewater



West One Group Winery

Highest flows will be during the crush season

- Average Flow 1,283 gpd
- Peak Flow 3,207 gpd



Crush Pad



Wastewater Options

- Land treatment
- Groundwater infiltration
- Discharge to a Wastewater treatment plants





Industrial Reuse

- **90.46.160**
Industrial reuse water—Permit.
- (1) The permit to use **industrial reuse water** shall be the permit issued under chapter [90.48](#) RCW to the owner of the plant that is the source of the industrial process water, who may then distribute the **water** according to provisions in the permit governing the location, rate, water quality, and purpose. In cases where the department of ecology determines that a proposed use may pose a significant risk to public health, the department shall refer the permit application to the department of health for review and consultation.
- (2) The owner of the industrial plant who obtains a permit under this section has the exclusive right to the use of any industrial reuse water generated from the plant and to the distribution of such water.



Industrial Reuse

	Monthly Average	Weekly Average
Total Nitrogen	10 mg/L	15 mg/L
BOD5	30 mg/L	45 mg/L
TSS	30 mg/L	45 mg/L
pH	Minimum	Maximum
	6 s.u.	9 s.u.
Total Coliform	7-Day Median	Sample Maximum
	2.2 MPN/100 mL or CFU/100 mL	23 MPN/mL or CFU/mL



Beneficial Use - Irrigation

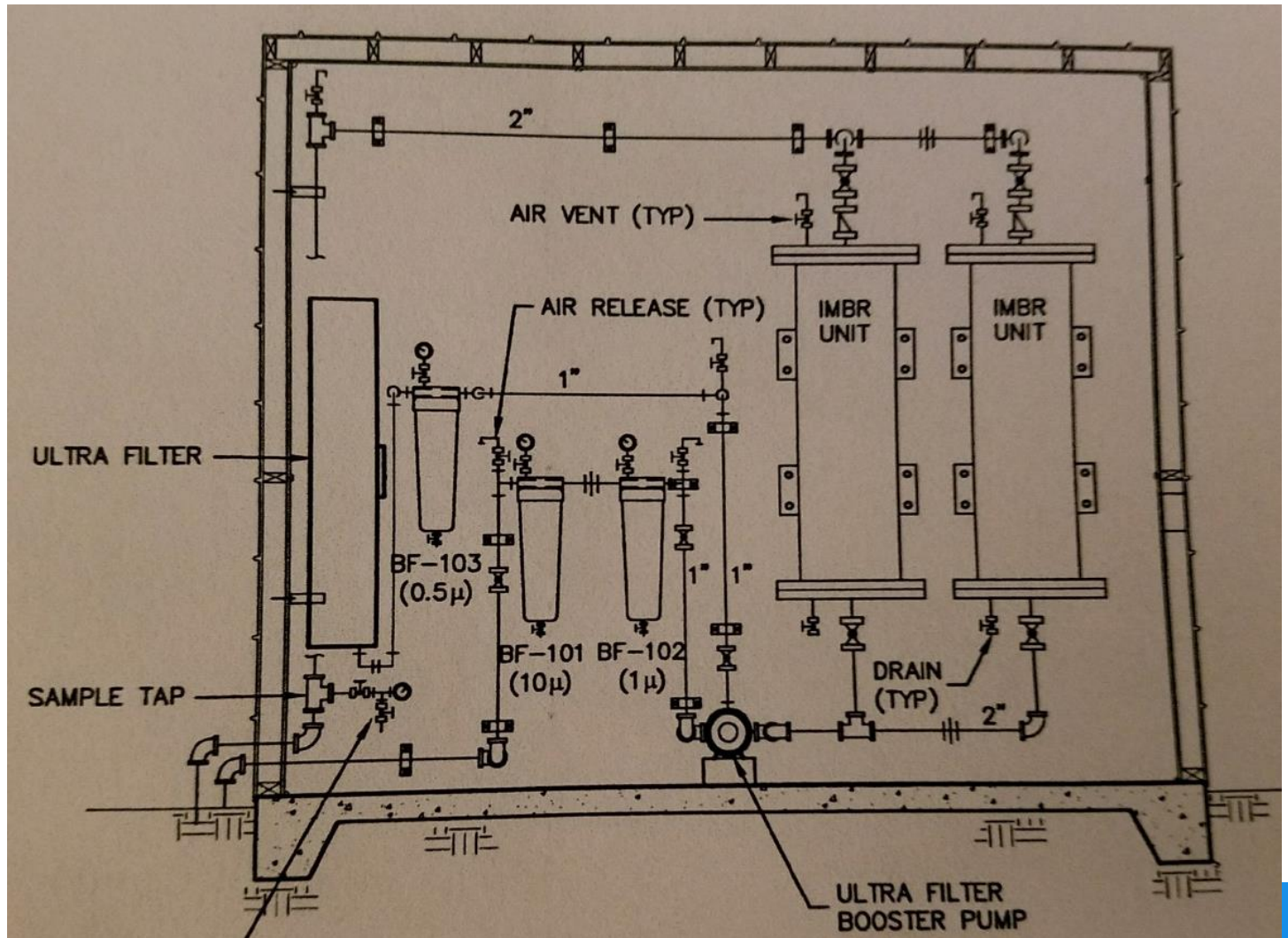




Treatment System



Treatment Plans



IMBR

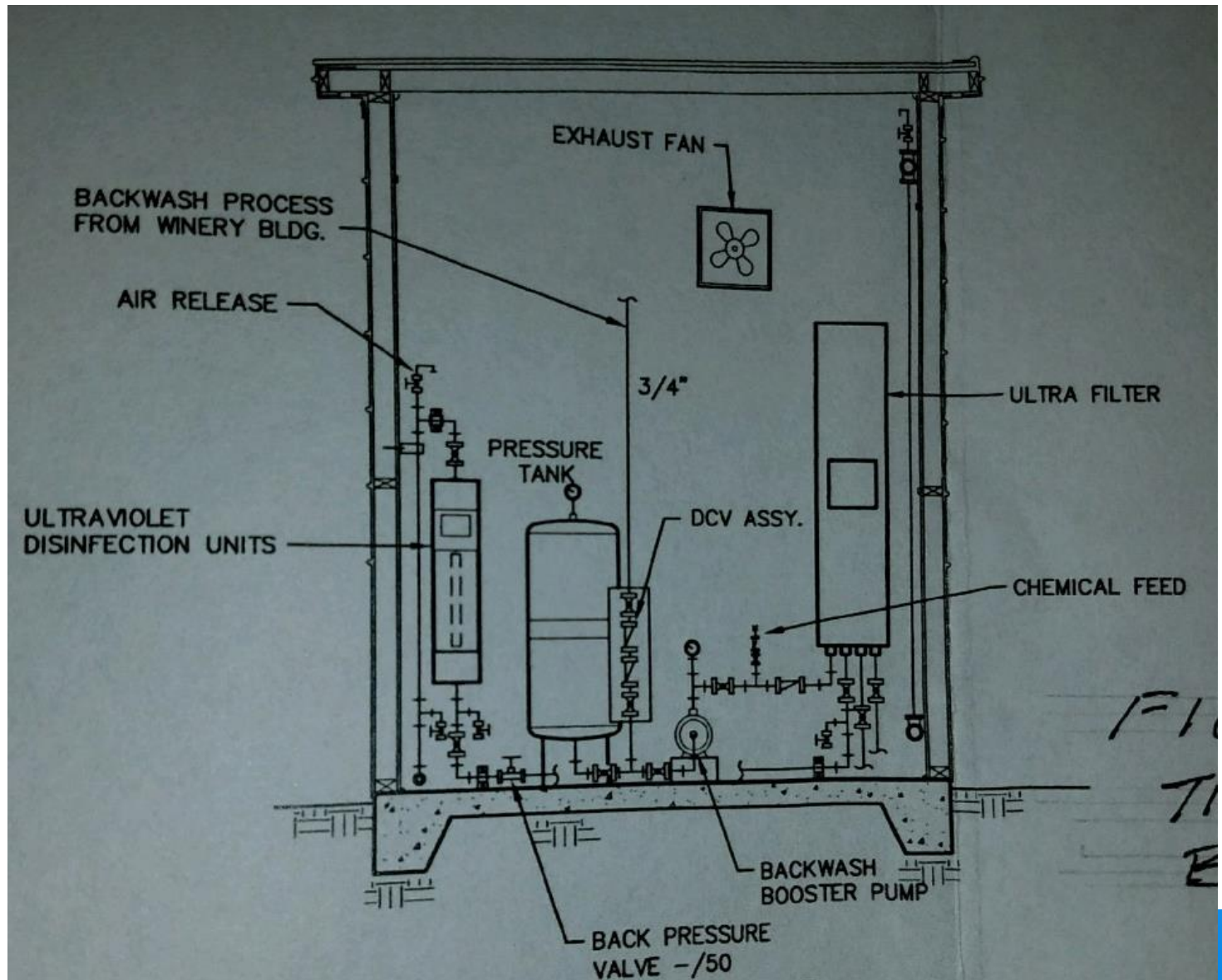
- 16 inch diameter
- 4.5 feet tall
- 150 pounds of inoculated media
- Bacteria immobilized within inert porous media



Treatment System



Treatment Plans





Questions?