

# Wastewater Solutions

**Affordable Wastewater Treatment Solutions from Orenco Systems<sup>®</sup> Inc.**

Orenco has installed wastewater treatment systems at nearly 60 wineries throughout the world, from California to New Zealand. We've learned plenty about the winemaking process since installing our first system at a California winery in 2002. Dozens of winery installations later, Orenco's wastewater treatment systems serve visitor hotels and tasting rooms, as well as process water facilities — from crush through fermentation, clarification, filtering, and bottling.



Summit Engineering, Integrated Water Services, and Cello & Maudru Construction teamed up to install six of Orenco's AdvanTex<sup>®</sup> AX100 treatment units at the Presqu'ile Winery. Photo: Presqu'ile Winery, Santa Maria, California.

## Presqu'ile Winery, Santa Maria Valley, California

### *Accommodating a small footprint*

Presqu'ile Winery on California's Central Coast constructed a winery facility that required a wastewater treatment system for its process water. The facility was intended to include all aspects of wine making, from crush through fermentation and bottling.

Summit Engineering of Santa Rosa designed a six-unit AdvanTex<sup>®</sup> AX100 Treatment System to accommodate the production of up to 25,000 cases of wine per year. A small footprint was paramount to the system design, to accommodate landscaping features and a parking lot for the new tasting room. Treated water is dispersed on-site onto a spray field covered with native plants. Integrated Water Services completed the AdvanTex system construction within a two-month time frame to keep the rest of the facility construction on track.

### **Design Considerations for WINERIES**

Because of its high strength and surge flows, winery process wastewater requires ample primary tankage followed by a robust secondary treatment system.

Commercial AdvanTex<sup>®</sup> Treatment Systems use a multiple-pass, packed-bed wastewater treatment technology that is well suited for winery applications. The moist bed of synthetic textile in the AdvanTex filter pod provides an environment that is highly favorable to both aerobic and anaerobic treatment processes, allowing large volumes of wastewater to be treated in a small space. Because effluent is recirculated through the system in timed doses, treatment proceeds consistently, regardless of variations in influent flow.

Active ventilation systems are required for all process wastewater treatment facilities. Adjustment of pH may also be necessary.

Typically, effluent from the treatment system is reused to irrigate vines, replenishing nutrients in the soil.

Orenco offers a supplementary document titled "AdvanTex Design Criteria for Treatment of Winery Process Wastewater" to assist the designer. Call to request your copy: 800-348-9843, +1-541-459-4449.

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*Innoflow Technologies provided an AdvanTex AX100 Treatment System to serve the Craggy Range Winery, including its world-class Terrôir restaurant. Photo: Craggy Range Winery, New Zealand.*



*Jim Ball Vineyards in Mendocino, California, installed two AdvanTex AX100 units to treat processing waste from the winery and three AX20 units to treat domestic waste from the tasting facility.*

## Craggy Range Winery, New Zealand

### *Setting a standard of excellence*

Located in a stunningly beautiful setting, Craggy Range Winery is one of the most technically advanced wineries ever built in New Zealand. In 2004, an AdvanTex AX100 Treatment System was installed to serve the exclusive Terrôir restaurant, guest cottages, winery office, restrooms, and employee residences. The system successfully handles up to 2,600 gallons (9840 L) per day of domestic-strength waste.

## Bin to Bottle, Napa Valley, California

### *Saving on sanitary sewer district surcharges*

Bin to Bottle is a wine processing and bottling facility in Napa Valley, California. The company's success led to a need for expanded capacity and a new facility, as well as a wastewater pretreatment system to lower BOD<sub>5</sub> levels before discharging to the Napa Sanitary District. This pretreatment allowed for a reduction in associated sewer surcharges.

Because Bin to Bottle provides services for many different vineyard clients, they have longer crush and bottling periods than a single winery would have (three months in the fall for crush and three months in the winter for bottling). The associated wastewater treatment system needed to handle a huge flux in flow throughout the season, as well as quick increases in capacity. During peak seasons, the facility needed to treat 2,000 gallons (7570 L) per day of high-strength process waste.

After evaluating their options, Bin to Bottle finally settled on primary treatment with aeration followed by Orenco's AdvanTex textile filters for final treatment. Orenco also provided training to the facility manager and crew to help operate the system.

## Jim Ball Vineyards, Mendocino, California

### *Treatment for winery process and domestic wastewater*

Jim Ball Vineyards at Middleridge Ranch in Mendocino County, California, needed a treatment system for wine processing waste streams, as well as for domestic waste streams from visitor facilities and a residence. The owners selected Orenco's AdvanTex Treatment Systems. For winery process waste, two AdvanTex AX100 units were installed to handle up to 1500 gallons (5680 L) per day. For the tasting room and the residence, three AdvanTex AX20 units were installed to handle up to 1000 gallons (3785 L) per day. All the effluent discharges to a subsurface drainfield.

## Dana Estates, Santa Rosa, California

### *Trusted for the heart of Napa Valley, with irrigation reuse*

A popular wine-tour destination, Dana Estates boasts a full-service winery located in the heart of California's Napa Valley. In 2007, two AdvanTex AX100 treatment units were installed to treat winery process waste with peak flows reaching 2,650 gallons (10,030 L) per day. In addition, two AdvanTex AX20 units treat domestic-strength waste from the building housing the tasting room. The clear effluent has minimal odor and is dispersed on-site via subsurface soil trenches used for irrigation.

These five systems are just a small sample of the wineries that have selected Orenco's AdvanTex Treatment Systems to meet their wastewater needs. To learn more about our recommendations for treatment of winery process wastewater, request Orenco's supplementary Advantex Design Criteria specific to winery applications.

*Data used by Orenco to derive the representations and conclusions contained within this Case Study were current as of September, 2016.*

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