

## Sustainable Management of Wastewater and Energy in the Winery



- New York Regulations
  - T. Martinson
- General planning for wastewater treatment
  - William D. Smith, Rochester
- Winery Self-assessment worksheets from California
  - Chris Savage, E&J Gallo
  - Bob Chrobak, Kennedy-Jenks Consulting
- Draft design for land application
  - Lisa Greenwood, RIT

## Winery Wastewater Regulation in NY

- Wineries are industrial food processing facilities
- SPDES permit required
- <10% of 200 NYS wineries have one
- Wineries liable to enforcement, potential fines
- DEC enforcement responds to complaints

*Don't Ask, Don't Tell*

## Providing NY wineries with basic information on winery wastewater permitting, management and design options

- Factsheets
  - General issues and regulations:
  - SPDES permits
  - 'Part 360' Land Application
  - Design and treatment options, based on size and volume
  - Practical First Steps (to reduce cost)
- Discussion of regulatory issues with DEC and stakeholders



Funding:  
 •NY Wine and Grape Foundation  
 •John Martini (Anthony Rd. Winery)

## What this covers:

- Waste water generated by wine production only
- NOT sanitary wastes (eg. tasting room septic systems)
- Separate winery waste streams from septic sanitary wastes.

## What water quality problems addressed?

- 'Biochemical oxygen demand' (BOD).
  - Presence can deplete oxygen in water.
- Winery wastes vs sanitary wastes
  - Winery: 2,000-5,000 mg/L (ppm) Winery
  - Household: 100-200 mg/L
  - 10 to 25x 'potency'
- Inorganic Ions (N, K), inorganic salts (cleaning products)

## SPDES Permits

*Dave Kiser, Region IV presentation at Viticulture 2007*

- Regulate discharge to surface or ground water
- Requires licensed engineer to develop treatment plans and design specifications.
- Review, Approval by DEC water quality engineer
- No 'size' threshold. Apply whether 300 or 300,000 gal of wine produced.

## Information to Support Design

- Volume of wastewater
- Composition of wastewater
- Seasonal flows
- Site characteristics (e.g. perc. rates)
- Beverage supplement:
  - Amount of grapes processed during crush
  - Volume of finished product (gal. produced)

## The Process

- Complete application (Licensed Engineer)
- DEC develops set of conditions and numerical limits for discharge
- Design and plan by licensed engineer reviewed and approved
- Permit issued (6 Month process?)

## Monitoring Reports *After installation*

- Regularly sample, analyze and report discharges
- Quarterly, Monthly, or Annually
- Includes: testing by Dept. of Health-certified laboratory

## 'Part 360 Land Application'

*John Thompson, DEC Div. Solid Waste presentation at Viticulture 2007*

- Land application of process water
- Registration (not 'Permit') by application
- No formal review, engineering
- Good for 'life of facility'

## Registration requirements

- Fill out an application form
- USGS topographic map or soil map of site
- One representative analysis of wastes
  - Heavy metals
  - Organic constituents
- Send in the form to DEC
- Receive form back with registration number attached.

## Part 360 Application form

### What this would require

- On-site storage (holding tank for liquid wastes)
- Land sufficient to apply wastes at 'agronomic rates'
  - By N and/or P content
  - 25,000 gal/acre approx 60-70 lb/acre N (2.5% solids in waste water)

100,000 gal wastewater would require << 4 acres of land

### Land Application Area Requirements

- Setbacks from property lines
- Depth to bedrock (>2 ft)
- Hydraulic loading (< 16,000 gal/acre per application – 2/3 in rain equivalent)
- Slope < 8%, <4% if frozen
- Soils: not gravelly
- 'Agronomic rates'

### Size Limits

There are no size limits.

Limitation is availability of sufficient land suitable for application at agronomic rates

A low-cost, simple solution to winery wastewater disposal?