

**San Joaquin Valley  
Air Pollution Control District**

**PERMIT UNIT:** N-956-185-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK  
3074 WITH PRESSURE/VACUUM VALVE

**PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

These terms and conditions are part of the Facility-wide Permit to Operate.

**San Joaquin Valley  
Air Pollution Control District**

**PERMIT UNIT:** N-956-186-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK  
3076 WITH PRESSURE/VACUUM VALVE

**PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

These terms and conditions are part of the Facility-wide Permit to Operate.

**San Joaquin Valley  
Air Pollution Control District**

**PERMIT UNIT:** N-956-187-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK  
3077 WITH PRESSURE/VACUUM VALVE

**PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: THE WINE GROUP, INC.

Location: 17000 E HIGHWAY 120, RIPON, CA 95366

N-956-187-0: May 19 2010 11:33AM - SIONGCOJ

**San Joaquin Valley  
Air Pollution Control District**

**PERMIT UNIT:** N-956-188-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK  
3078 WITH PRESSURE/VACUUM VALVE

**PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

These terms and conditions are part of the Facility-wide Permit to Operate.

**San Joaquin Valley  
Air Pollution Control District**

**PERMIT UNIT:** N-956-189-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK  
3079 WITH PRESSURE/VACUUM VALVE

**PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

These terms and conditions are part of the Facility-wide Permit to Operate.

**San Joaquin Valley  
Air Pollution Control District**

**PERMIT UNIT:** N-956-190-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

650,000 GALLON GLASS LINED WINE STORAGE TANK 6013 WITH PRESSURE/VACUUM VALVE

**PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

These terms and conditions are part of the Facility-wide Permit to Operate.

**San Joaquin Valley  
Air Pollution Control District**

**PERMIT UNIT:** N-956-191-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

650,000 GALLON GLASS LINED WINE STORAGE TANK 6014 WITH PRESSURE/VACUUM VALVE

**PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: THE WINE GROUP, INC.

Location: 17000 E HIGHWAY 120, RIPON, CA 95366

N-956-191-0: May 19 2010 11:34AM -- SONGCOJ

San Joaquin Valley  
Air Pollution Control District

**PERMIT UNIT:** N-956-192-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

650,000 GALLON GLASS LINED WINE STORAGE TANK 6015 WITH PRESSURE/VACUUM VALVE

**PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

These terms and conditions are part of the Facility-wide Permit to Operate.

San Joaquin Valley  
Air Pollution Control District

**PERMIT UNIT:** N-956-193-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

650,000 GALLON GLASS LINED WINE STORAGE TANK 6019 WITH PRESSURE/VACUUM VALVE

**PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

These terms and conditions are part of the Facility-wide Permit to Operate.

**San Joaquin Valley  
Air Pollution Control District**

**PERMIT UNIT:** N-956-194-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

650,000 GALLON GLASS LINED WINE STORAGE TANK 6020 WITH PRESSURE/VACUUM VALVE

**PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

These terms and conditions are part of the Facility-wide Permit to Operate.

**San Joaquin Valley  
Air Pollution Control District**

**PERMIT UNIT:** N-956-195-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

650,000 GALLON GLASS LINED ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 6021  
WITH PRESSURE/VACUUM VALVE

**PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: THE WINE GROUP, INC.

Location: 17000 E HIGHWAY 120, RIPON, CA 95366

N-956-195-0: May 19 2010 11:34AM - SIONGCOJ

**San Joaquin Valley  
Air Pollution Control District**

**PERMIT UNIT:** N-956-196-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

650,000 GALLON GLASS LINED ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 6022  
WITH PRESSURE/VACUUM VALVE

**PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: THE WINE GROUP, INC.

Location: 17000 E HIGHWAY 120, RIPON, CA 95366

N-956-196-0 : May 19 2010 11:34AM -- SIONGCOJ

**San Joaquin Valley  
Air Pollution Control District**

**PERMIT UNIT:** N-956-197-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

650,000 GALLON GLASS LINED ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 6023  
WITH PRESSURE/VACUUM VALVE

**PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: THE WINE GROUP, INC.

Location: 17000 E HIGHWAY 120, RIPON, CA 95366

N-956-197-0 : May 19 2010 11:34AM -- SIONGCOJ

**San Joaquin Valley  
Air Pollution Control District**

**PERMIT UNIT:** N-956-198-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

650,000 GALLON GLASS LINED ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 6024  
WITH PRESSURE/VACUUM VALVE

**PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: THE WINE GROUP, INC.

Location: 17000 E HIGHWAY 120.RIPON, CA 95366

N-956-198-0: May 19 2010 11:34AM -- SIONGCOJ

**San Joaquin Valley  
Air Pollution Control District**

**PERMIT UNIT:** N-956-199-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

705,000 GALLON STAINLESS STEEL WINE STORAGE TANK 7001 WITH PRESSURE/VACUUM VALVE

**PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: THE WINE GROUP, INC.

Location: 17000 E HIGHWAY 120, RIPON, CA 95366

N-956-199-0 : May 19 2010 11:34AM -- SIONGCOJ

**San Joaquin Valley  
Air Pollution Control District**

**PERMIT UNIT:** N-956-200-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

705,000 GALLON STAINLESS STEEL WINE STORAGE TANK 7002 WITH PRESSURE/VACUUM VALVE

**PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: THE WINE GROUP, INC.

Location: 17000 E HIGHWAY 120, RIPON, CA 95366

N-956-200-0; May 16 2010 11:34AM - SIONGCOJ

San Joaquin Valley  
Air Pollution Control District

**PERMIT UNIT:** N-956-201-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

705,000 GALLON STAINLESS STEEL WINE STORAGE TANK 7003 WITH PRESSURE/VACUUM VALVE

**PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: THE WINE GROUP, INC.

Location: 17000 E HIGHWAY 120, RIPON, CA 95366

N-956-201-0: May 19 2010 11:34AM -- SIONGCOJ

**San Joaquin Valley  
Air Pollution Control District**

**PERMIT UNIT:** N-956-202-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

705,000 GALLON STAINLESS STEEL WINE STORAGE TANK 7004 WITH PRESSURE/VACUUM VALVE

**PERMIT UNIT REQUIREMENTS**

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1. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: THE WINE GROUP, INC.

Location: 17000 E HIGHWAY 120, RIFON, CA 95366

N-956-202-0: May 19 2010 11:35AM -- SIONGCOJ

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-956-203-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 205) WITH PRESSURE/VACUUM VALVE

## PERMIT UNIT REQUIREMENTS

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1. The wine storage tank shall be equipped and operated with a pressure-vacuum relief valve, set to operate within 10% of the maximum allowable working pressure of the tank and permanently labeled with the operating pressure settings. [District Rule 4694]
2. The pressure-vacuum relief valve shall be installed and operated in accordance with the manufacturer's instructions. [District Rule 4694]
3. The pressure-vacuum relief valve and wine storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rule 4694]
4. The temperature of each batch of wine placed, stored, or held in the tank shall not exceed 75 degrees F after 60 days following completion of fermentation. [District Rule 4694]
5. The maximum temperature of each batch of wine placed, stored, or held in the tank shall be recorded weekly. [District Rule 4694]
6. Records of filling and emptying operations shall be kept for this tank including the date of the operation, a unique identifier for each batch, the volume percent ethanol in the batch and the volume of wine transferred. [District Rule 4694]
7. The wine batch identifier and volume stored in the tank shall be recorded weekly. [District Rule 4694]

These terms and conditions are part of the Facility-wide Permit to Operate.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-956-204-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 206) WITH PRESSURE/VACUUM VALVE

## PERMIT UNIT REQUIREMENTS

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1. The wine storage tank shall be equipped and operated with a pressure-vacuum relief valve, set to operate within 10% of the maximum allowable working pressure of the tank and permanently labeled with the operating pressure settings. [District Rule 4694]
2. The pressure-vacuum relief valve shall be installed and operated in accordance with the manufacturer's instructions. [District Rule 4694]
3. The pressure-vacuum relief valve and wine storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rule 4694]
4. The temperature of each batch of wine placed, stored, or held in the tank shall not exceed 75 degrees F after 60 days following completion of fermentation. [District Rule 4694]
5. The maximum temperature of each batch of wine placed, stored, or held in the tank shall be recorded weekly. [District Rule 4694]
6. Records of filling and emptying operations shall be kept for this tank including the date of the operation, a unique identifier for each batch, the volume percent ethanol in the batch and the volume of wine transferred. [District Rule 4694]
7. The wine batch identifier and volume stored in the tank shall be recorded weekly. [District Rule 4694]

These terms and conditions are part of the Facility-wide Permit to Operate.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-956-205-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 207) WITH PRESSURE/VACUUM VALVE

## PERMIT UNIT REQUIREMENTS

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1. The wine storage tank shall be equipped and operated with a pressure-vacuum relief valve, set to operate within 10% of the maximum allowable working pressure of the tank and permanently labeled with the operating pressure settings. [District Rule 4694]
2. The pressure-vacuum relief valve shall be installed and operated in accordance with the manufacturer's instructions. [District Rule 4694]
3. The pressure-vacuum relief valve and wine storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rule 4694]
4. The temperature of each batch of wine placed, stored, or held in the tank shall not exceed 75 degrees F after 60 days following completion of fermentation. [District Rule 4694]
5. The maximum temperature of each batch of wine placed, stored, or held in the tank shall be recorded weekly. [District Rule 4694]
6. Records of filling and emptying operations shall be kept for this tank including the date of the operation, a unique identifier for each batch, the volume percent ethanol in the batch and the volume of wine transferred. [District Rule 4694]
7. The wine batch identifier and volume stored in the tank shall be recorded weekly. [District Rule 4694]

These terms and conditions are part of the Facility-wide Permit to Operate.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-956-206-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 208) WITH PRESSURE/VACUUM VALVE

## PERMIT UNIT REQUIREMENTS

---

1. The wine storage tank shall be equipped and operated with a pressure-vacuum relief valve, set to operate within 10% of the maximum allowable working pressure of the tank and permanently labeled with the operating pressure settings. [District Rule 4694]
2. The pressure-vacuum relief valve shall be installed and operated in accordance with the manufacturer's instructions. [District Rule 4694]
3. The pressure-vacuum relief valve and wine storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rule 4694]
4. The temperature of each batch of wine placed, stored, or held in the tank shall not exceed 75 degrees F after 60 days following completion of fermentation. [District Rule 4694]
5. The maximum temperature of each batch of wine placed, stored, or held in the tank shall be recorded weekly. [District Rule 4694]
6. Records of filling and emptying operations shall be kept for this tank including the date of the operation, a unique identifier for each batch, the volume percent ethanol in the batch and the volume of wine transferred. [District Rule 4694]
7. The wine batch identifier and volume stored in the tank shall be recorded weekly. [District Rule 4694]

These terms and conditions are part of the Facility-wide Permit to Operate.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-956-207-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 209) WITH PRESSURE/VACUUM VALVE

## PERMIT UNIT REQUIREMENTS

---

1. The wine storage tank shall be equipped and operated with a pressure-vacuum relief valve, set to operate within 10% of the maximum allowable working pressure of the tank and permanently labeled with the operating pressure settings. [District Rule 4694]
2. The pressure-vacuum relief valve shall be installed and operated in accordance with the manufacturer's instructions. [District Rule 4694]
3. The pressure-vacuum relief valve and wine storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rule 4694]
4. The temperature of each batch of wine placed, stored, or held in the tank shall not exceed 75 degrees F after 60 days following completion of fermentation. [District Rule 4694]
5. The maximum temperature of each batch of wine placed, stored, or held in the tank shall be recorded weekly. [District Rule 4694]
6. Records of filling and emptying operations shall be kept for this tank including the date of the operation, a unique identifier for each batch, the volume percent ethanol in the batch and the volume of wine transferred. [District Rule 4694]
7. The wine batch identifier and volume stored in the tank shall be recorded weekly. [District Rule 4694]

These terms and conditions are part of the Facility-wide Permit to Operate.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-956-208-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 210) WITH PRESSURE/VACUUM VALVE

## PERMIT UNIT REQUIREMENTS

---

1. The wine storage tank shall be equipped and operated with a pressure-vacuum relief valve, set to operate within 10% of the maximum allowable working pressure of the tank and permanently labeled with the operating pressure settings. [District Rule 4694]
2. The pressure-vacuum relief valve shall be installed and operated in accordance with the manufacturer's instructions. [District Rule 4694]
3. The pressure-vacuum relief valve and wine storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rule 4694]
4. The temperature of each batch of wine placed, stored, or held in the tank shall not exceed 75 degrees F after 60 days following completion of fermentation. [District Rule 4694]
5. The maximum temperature of each batch of wine placed, stored, or held in the tank shall be recorded weekly. [District Rule 4694]
6. Records of filling and emptying operations shall be kept for this tank including the date of the operation, a unique identifier for each batch, the volume percent ethanol in the batch and the volume of wine transferred. [District Rule 4694]
7. The wine batch identifier and volume stored in the tank shall be recorded weekly. [District Rule 4694]

These terms and conditions are part of the Facility-wide Permit to Operate.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-956-209-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 211) WITH PRESSURE/VACUUM VALVE

## PERMIT UNIT REQUIREMENTS

---

1. The wine storage tank shall be equipped and operated with a pressure-vacuum relief valve, set to operate within 10% of the maximum allowable working pressure of the tank and permanently labeled with the operating pressure settings. [District Rule 4694]
2. The pressure-vacuum relief valve shall be installed and operated in accordance with the manufacturer's instructions. [District Rule 4694]
3. The pressure-vacuum relief valve and wine storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rule 4694]
4. The temperature of each batch of wine placed, stored, or held in the tank shall not exceed 75 degrees F after 60 days following completion of fermentation. [District Rule 4694]
5. The maximum temperature of each batch of wine placed, stored, or held in the tank shall be recorded weekly. [District Rule 4694]
6. Records of filling and emptying operations shall be kept for this tank including the date of the operation, a unique identifier for each batch, the volume percent ethanol in the batch and the volume of wine transferred. [District Rule 4694]
7. The wine batch identifier and volume stored in the tank shall be recorded weekly. [District Rule 4694]

These terms and conditions are part of the Facility-wide Permit to Operate.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-956-210-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 212) WITH PRESSURE/VACUUM VALVE

## PERMIT UNIT REQUIREMENTS

---

1. The wine storage tank shall be equipped and operated with a pressure-vacuum relief valve, set to operate within 10% of the maximum allowable working pressure of the tank and permanently labeled with the operating pressure settings. [District Rule 4694]
2. The pressure-vacuum relief valve shall be installed and operated in accordance with the manufacturer's instructions. [District Rule 4694]
3. The pressure-vacuum relief valve and wine storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rule 4694]
4. The temperature of each batch of wine placed, stored, or held in the tank shall not exceed 75 degrees F after 60 days following completion of fermentation. [District Rule 4694]
5. The maximum temperature of each batch of wine placed, stored, or held in the tank shall be recorded weekly. [District Rule 4694]
6. Records of filling and emptying operations shall be kept for this tank including the date of the operation, a unique identifier for each batch, the volume percent ethanol in the batch and the volume of wine transferred. [District Rule 4694]
7. The wine batch identifier and volume stored in the tank shall be recorded weekly. [District Rule 4694]

These terms and conditions are part of the Facility-wide Permit to Operate.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-956-211-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 213) WITH PRESSURE/VACUUM VALVE

## PERMIT UNIT REQUIREMENTS

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1. The wine storage tank shall be equipped and operated with a pressure-vacuum relief valve, set to operate within 10% of the maximum allowable working pressure of the tank and permanently labeled with the operating pressure settings. [District Rule 4694]
2. The pressure-vacuum relief valve shall be installed and operated in accordance with the manufacturer's instructions. [District Rule 4694]
3. The pressure-vacuum relief valve and wine storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rule 4694]
4. The temperature of each batch of wine placed, stored, or held in the tank shall not exceed 75 degrees F after 60 days following completion of fermentation. [District Rule 4694]
5. The maximum temperature of each batch of wine placed, stored, or held in the tank shall be recorded weekly. [District Rule 4694]
6. Records of filling and emptying operations shall be kept for this tank including the date of the operation, a unique identifier for each batch, the volume percent ethanol in the batch and the volume of wine transferred. [District Rule 4694]
7. The wine batch identifier and volume stored in the tank shall be recorded weekly. [District Rule 4694]

These terms and conditions are part of the Facility-wide Permit to Operate.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-956-212-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 214) WITH PRESSURE/VACUUM VALVE

## PERMIT UNIT REQUIREMENTS

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1. The wine storage tank shall be equipped and operated with a pressure-vacuum relief valve, set to operate within 10% of the maximum allowable working pressure of the tank and permanently labeled with the operating pressure settings. [District Rule 4694]
2. The pressure-vacuum relief valve shall be installed and operated in accordance with the manufacturer's instructions. [District Rule 4694]
3. The pressure-vacuum relief valve and wine storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rule 4694]
4. The temperature of each batch of wine placed, stored, or held in the tank shall not exceed 75 degrees F after 60 days following completion of fermentation. [District Rule 4694]
5. The maximum temperature of each batch of wine placed, stored, or held in the tank shall be recorded weekly. [District Rule 4694]
6. Records of filling and emptying operations shall be kept for this tank including the date of the operation, a unique identifier for each batch, the volume percent ethanol in the batch and the volume of wine transferred. [District Rule 4694]
7. The wine batch identifier and volume stored in the tank shall be recorded weekly. [District Rule 4694]

These terms and conditions are part of the Facility-wide Permit to Operate.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-956-213-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 215) WITH PRESSURE/VACUUM VALVE

## PERMIT UNIT REQUIREMENTS

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1. The wine storage tank shall be equipped and operated with a pressure-vacuum relief valve, set to operate within 10% of the maximum allowable working pressure of the tank and permanently labeled with the operating pressure settings. [District Rule 4694]
2. The pressure-vacuum relief valve shall be installed and operated in accordance with the manufacturer's instructions. [District Rule 4694]
3. The pressure-vacuum relief valve and wine storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rule 4694]
4. The temperature of each batch of wine placed, stored, or held in the tank shall not exceed 75 degrees F after 60 days following completion of fermentation. [District Rule 4694]
5. The maximum temperature of each batch of wine placed, stored, or held in the tank shall be recorded weekly. [District Rule 4694]
6. Records of filling and emptying operations shall be kept for this tank including the date of the operation, a unique identifier for each batch, the volume percent ethanol in the batch and the volume of wine transferred. [District Rule 4694]
7. The wine batch identifier and volume stored in the tank shall be recorded weekly. [District Rule 4694]

These terms and conditions are part of the Facility-wide Permit to Operate.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-956-214-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 216) WITH PRESSURE/VACUUM VALVE

## PERMIT UNIT REQUIREMENTS

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1. The wine storage tank shall be equipped and operated with a pressure-vacuum relief valve, set to operate within 10% of the maximum allowable working pressure of the tank and permanently labeled with the operating pressure settings. [District Rule 4694]
2. The pressure-vacuum relief valve shall be installed and operated in accordance with the manufacturer's instructions. [District Rule 4694]
3. The pressure-vacuum relief valve and wine storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rule 4694]
4. The temperature of each batch of wine placed, stored, or held in the tank shall not exceed 75 degrees F after 60 days following completion of fermentation. [District Rule 4694]
5. The maximum temperature of each batch of wine placed, stored, or held in the tank shall be recorded weekly. [District Rule 4694]
6. Records of filling and emptying operations shall be kept for this tank including the date of the operation, a unique identifier for each batch, the volume percent ethanol in the batch and the volume of wine transferred. [District Rule 4694]
7. The wine batch identifier and volume stored in the tank shall be recorded weekly. [District Rule 4694]

These terms and conditions are part of the Facility-wide Permit to Operate.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-956-215-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 217) WITH PRESSURE/VACUUM VALVE

## PERMIT UNIT REQUIREMENTS

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1. The wine storage tank shall be equipped and operated with a pressure-vacuum relief valve, set to operate within 10% of the maximum allowable working pressure of the tank and permanently labeled with the operating pressure settings. [District Rule 4694]
2. The pressure-vacuum relief valve shall be installed and operated in accordance with the manufacturer's instructions. [District Rule 4694]
3. The pressure-vacuum relief valve and wine storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rule 4694]
4. The temperature of each batch of wine placed, stored, or held in the tank shall not exceed 75 degrees F after 60 days following completion of fermentation. [District Rule 4694]
5. The maximum temperature of each batch of wine placed, stored, or held in the tank shall be recorded weekly. [District Rule 4694]
6. Records of filling and emptying operations shall be kept for this tank including the date of the operation, a unique identifier for each batch, the volume percent ethanol in the batch and the volume of wine transferred. [District Rule 4694]
7. The wine batch identifier and volume stored in the tank shall be recorded weekly. [District Rule 4694]

These terms and conditions are part of the Facility-wide Permit to Operate.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-956-216-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 218) WITH PRESSURE/VACUUM VALVE

## PERMIT UNIT REQUIREMENTS

---

1. The wine storage tank shall be equipped and operated with a pressure-vacuum relief valve, set to operate within 10% of the maximum allowable working pressure of the tank and permanently labeled with the operating pressure settings. [District Rule 4694]
2. The pressure-vacuum relief valve shall be installed and operated in accordance with the manufacturer's instructions. [District Rule 4694]
3. The pressure-vacuum relief valve and wine storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rule 4694]
4. The temperature of each batch of wine placed, stored, or held in the tank shall not exceed 75 degrees F after 60 days following completion of fermentation. [District Rule 4694]
5. The maximum temperature of each batch of wine placed, stored, or held in the tank shall be recorded weekly. [District Rule 4694]
6. Records of filling and emptying operations shall be kept for this tank including the date of the operation, a unique identifier for each batch, the volume percent ethanol in the batch and the volume of wine transferred. [District Rule 4694]
7. The wine batch identifier and volume stored in the tank shall be recorded weekly. [District Rule 4694]

These terms and conditions are part of the Facility-wide Permit to Operate.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-956-217-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 219) WITH PRESSURE/VACUUM VALVE

## PERMIT UNIT REQUIREMENTS

---

1. The wine storage tank shall be equipped and operated with a pressure-vacuum relief valve, set to operate within 10% of the maximum allowable working pressure of the tank and permanently labeled with the operating pressure settings. [District Rule 4694]
2. The pressure-vacuum relief valve shall be installed and operated in accordance with the manufacturer's instructions. [District Rule 4694]
3. The pressure-vacuum relief valve and wine storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rule 4694]
4. The temperature of each batch of wine placed, stored, or held in the tank shall not exceed 75 degrees F after 60 days following completion of fermentation. [District Rule 4694]
5. The maximum temperature of each batch of wine placed, stored, or held in the tank shall be recorded weekly. [District Rule 4694]
6. Records of filling and emptying operations shall be kept for this tank including the date of the operation, a unique identifier for each batch, the volume percent ethanol in the batch and the volume of wine transferred. [District Rule 4694]
7. The wine batch identifier and volume stored in the tank shall be recorded weekly. [District Rule 4694]

These terms and conditions are part of the Facility-wide Permit to Operate.

# San Joaquin Valley Air Pollution Control District

**PERMIT UNIT:** N-956-218-0

**EXPIRATION DATE:** 09/30/2013

**EQUIPMENT DESCRIPTION:**

19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 220) WITH PRESSURE/VACUUM VALVE

## PERMIT UNIT REQUIREMENTS

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1. The wine storage tank shall be equipped and operated with a pressure-vacuum relief valve, set to operate within 10% of the maximum allowable working pressure of the tank and permanently labeled with the operating pressure settings. [District Rule 4694]
2. The pressure-vacuum relief valve shall be installed and operated in accordance with the manufacturer's instructions. [District Rule 4694]
3. The pressure-vacuum relief valve and wine storage tank shall remain in a gas-tight condition except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rule 4694]
4. The temperature of each batch of wine placed, stored, or held in the tank shall not exceed 75 degrees F after 60 days following completion of fermentation. [District Rule 4694]
5. The maximum temperature of each batch of wine placed, stored, or held in the tank shall be recorded weekly. [District Rule 4694]
6. Records of filling and emptying operations shall be kept for this tank including the date of the operation, a unique identifier for each batch, the volume percent ethanol in the batch and the volume of wine transferred. [District Rule 4694]
7. The wine batch identifier and volume stored in the tank shall be recorded weekly. [District Rule 4694]

These terms and conditions are part of the Facility-wide Permit to Operate.

## **APPENDIX B**

### **Pre-Project Equipment Descriptions**

## PRE-PROJECT EQUIPMENT DESCRIPTIONS

PERMIT NO.	EQUIPMENT DESCRIPTION
N-956 - 11 - 0	: 15,000 GALLON STAINLESS STEEL WINE STORAGE TANK B1 WITH PRESSURE/VACUUM VALVE
N-956 - 12 - 0	: 15,000 GALLON STAINLESS STEEL WINE STORAGE TANK B2 WITH PRESSURE/VACUUM VALVE
N-956 - 13 - 0	: 10,000 GALLON STAINLESS STEEL WINE STORAGE TANK 24 WITH PRESSURE/VACUUM VALVE
N-956 - 14 - 0	: 10,000 GALLON STAINLESS STEEL WINE STORAGE TANK 39 WITH PRESSURE/VACUUM VALVE
N-956 - 15 - 0	: 120,000 GALLON STAINLESS STEEL WINE STORAGE TANK 44 WITH PRESSURE/VACUUM VALVE
N-956 - 16 - 0	: 120,000 GALLON STAINLESS STEEL WINE STORAGE TANK 45 WITH PRESSURE/VACUUM VALVE
N-956 - 17 - 0	: 120,000 GALLON STAINLESS STEEL WINE STORAGE TANK 46 WITH PRESSURE/VACUUM VALVE
N-956 - 18 - 0	: 120,000 GALLON STAINLESS STEEL WINE STORAGE TANK 47 WITH PRESSURE/VACUUM VALVE
N-956 - 19 - 0	: 120,000 GALLON STAINLESS STEEL WINE STORAGE TANK 48 WITH PRESSURE/VACUUM VALVE
N-956 - 20 - 0	: 120,000 GALLON STAINLESS STEEL WINE STORAGE TANK 49 WITH PRESSURE/VACUUM VALVE
N-956 - 21 - 0	: 120,000 GALLON STAINLESS STEEL WINE STORAGE TANK 50 WITH PRESSURE/VACUUM VALVE
N-956 - 22 - 0	: 30,000 GALLON STAINLESS STEEL WINE STORAGE TANK 51 WITH PRESSURE/VACUUM VALVE
N-956 - 23 - 0	: 30,000 GALLON STAINLESS STEEL WINE STORAGE TANK 52 WITH PRESSURE/VACUUM VALVE
N-956 - 24 - 0	: 30,000 GALLON STAINLESS STEEL WINE STORAGE TANK 53 WITH PRESSURE/VACUUM VALVE
N-956 - 25 - 0	: 30,000 GALLON STAINLESS STEEL WINE STORAGE TANK 54 WITH PRESSURE/VACUUM VALVE
N-956 - 26 - 0	: 20,000 GALLON STAINLESS STEEL WINE STORAGE TANK 55 WITH PRESSURE/VACUUM VALVE
N-956 - 27 - 0	: 60,000 GALLON STAINLESS STEEL WINE STORAGE TANK 56 WITH PRESSURE/VACUUM VALVE
N-956 - 28 - 0	: 60,000 GALLON STAINLESS STEEL WINE STORAGE TANK 57 WITH PRESSURE/VACUUM VALVE
N-956 - 29 - 0	: 60,000 GALLON STAINLESS STEEL WINE STORAGE TANK 58 WITH PRESSURE/VACUUM VALVE
N-956 - 30 - 0	: 60,000 GALLON STAINLESS STEEL WINE STORAGE TANK 59 WITH PRESSURE/VACUUM VALVE
N-956 - 31 - 0	: 60,000 GALLON STAINLESS STEEL WINE STORAGE TANK 60 WITH PRESSURE/VACUUM VALVE
N-956 - 32 - 0	: 12,000 GALLON STAINLESS STEEL WINE STORAGE TANK 62 WITH PRESSURE/VACUUM VALVE
N-956 - 33 - 0	: 120,000 GALLON STAINLESS STEEL WINE STORAGE TANK 116 WITH PRESSURE/VACUUM VALVE
N-956 - 34 - 0	: 120,000 GALLON STAINLESS STEEL WINE STORAGE TANK 117 WITH PRESSURE/VACUUM VALVE
N-956 - 35 - 0	: 120,000 GALLON STAINLESS STEEL WINE STORAGE TANK 118 WITH PRESSURE/VACUUM VALVE
N-956 - 36 - 0	: 15,000 GALLON STAINLESS STEEL WINE STORAGE TANK 131 WITH PRESSURE/VACUUM VALVE
N-956 - 37 - 0	: 15,000 GALLON STAINLESS STEEL WINE STORAGE TANK 132 WITH PRESSURE/VACUUM VALVE
N-956 - 38 - 0	: 30,000 GALLON STAINLESS STEEL WINE STORAGE TANK 133 WITH PRESSURE/VACUUM VALVE
N-956 - 39 - 0	: 30,000 GALLON STAINLESS STEEL WINE STORAGE TANK 134 WITH PRESSURE/VACUUM VALVE
N-956 - 40 - 0	: 30,000 GALLON STAINLESS STEEL WINE STORAGE TANK 135 WITH PRESSURE/VACUUM VALVE
N-956 - 41 - 0	: 30,000 GALLON STAINLESS STEEL WINE STORAGE TANK 136 WITH PRESSURE/VACUUM VALVE
N-956 - 42 - 0	: 5,000 GALLON STAINLESS STEEL WINE STORAGE TANK 196 WITH PRESSURE/VACUUM VALVE
N-956 - 43 - 0	: 105,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 1001 WITH PRESSURE/VACUUM VALVE
N-956 - 44 - 0	: 105,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 1002 WITH PRESSURE/VACUUM VALVE
N-956 - 45 - 0	: 105,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 1003 WITH PRESSURE/VACUUM VALVE
N-956 - 46 - 0	: 105,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 1004 WITH PRESSURE/VACUUM VALVE

## PRE-PROJECT EQUIPMENT DESCRIPTIONS

PERMIT NO.	EQUIPMENT DESCRIPTION
N-956 - 47 - 0	: 105,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 1005 WITH PRESSURE/VACUUM VALVE
N-956 - 48 - 0	: 105,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 1006 WITH PRESSURE/VACUUM VALVE
N-956 - 49 - 0	: 105,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 1007 WITH PRESSURE/VACUUM VALVE
N-956 - 50 - 0	: 105,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 1008 WITH PRESSURE/VACUUM VALVE
N-956 - 51 - 0	: 105,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 1009 WITH PRESSURE/VACUUM VALVE
N-956 - 52 - 0	: 105,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 1011 WITH PRESSURE/VACUUM VALVE
N-956 - 53 - 0	: 105,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 1012 WITH PRESSURE/VACUUM VALVE
N-956 - 54 - 0	: 106,000 GALLON STAINLESS STEEL WINE STORAGE TANK 1013 WITH PRESSURE/VACUUM VALVE
N-956 - 55 - 0	: 106,000 GALLON STAINLESS STEEL WINE STORAGE TANK 1014 WITH PRESSURE/VACUUM VALVE
N-956 - 56 - 0	: 106,000 GALLON STAINLESS STEEL WINE STORAGE TANK 1015 WITH PRESSURE/VACUUM VALVE
N-956 - 57 - 0	: 106,000 GALLON STAINLESS STEEL WINE STORAGE TANK 1016 WITH PRESSURE/VACUUM VALVE
N-956 - 58 - 0	: 106,000 GALLON STAINLESS STEEL WINE STORAGE TANK 1017 WITH PRESSURE/VACUUM VALVE
N-956 - 59 - 0	: 106,000 GALLON STAINLESS STEEL WINE STORAGE TANK 1018 WITH PRESSURE/VACUUM VALVE
N-956 - 60 - 0	: 106,000 GALLON STAINLESS STEEL WINE STORAGE TANK 1019 WITH PRESSURE/VACUUM VALVE
N-956 - 61 - 0	: 106,000 GALLON STAINLESS STEEL WINE STORAGE TANK 1020 WITH PRESSURE/VACUUM VALVE
N-956 - 62 - 0	: 106,000 GALLON STAINLESS STEEL WINE STORAGE TANK 1021 WITH PRESSURE/VACUUM VALVE
N-956 - 63 - 0	: 106,000 GALLON STAINLESS STEEL WINE STORAGE TANK 1022 WITH PRESSURE/VACUUM VALVE
N-956 - 64 - 0	: 106,000 GALLON STAINLESS STEEL WINE STORAGE TANK 1023 WITH PRESSURE/VACUUM VALVE
N-956 - 65 - 0	: 106,000 GALLON STAINLESS STEEL WINE STORAGE TANK 1024 WITH PRESSURE/VACUUM VALVE
N-956 - 66 - 0	: 106,000 GALLON STAINLESS STEEL WINE STORAGE TANK 1025 WITH PRESSURE/VACUUM VALVE
N-956 - 67 - 0	: 103,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 1026 WITH PRESSURE/VACUUM VALVE
N-956 - 68 - 0	: 103,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 1027 WITH PRESSURE/VACUUM VALVE
N-956 - 69 - 0	: 103,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 1028 WITH PRESSURE/VACUUM VALVE
N-956 - 70 - 0	: 103,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 1029 WITH PRESSURE/VACUUM VALVE
N-956 - 71 - 0	: 103,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 1030 WITH PRESSURE/VACUUM VALVE
N-956 - 72 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2001 WITH PRESSURE/VACUUM VALVE
N-956 - 73 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2002 WITH PRESSURE/VACUUM VALVE
N-956 - 74 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2003 WITH PRESSURE/VACUUM VALVE
N-956 - 75 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2004 WITH PRESSURE/VACUUM VALVE

## PRE-PROJECT EQUIPMENT DESCRIPTIONS

PERMIT NO.	EQUIPMENT DESCRIPTION
N-956 - 76 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2005 WITH PRESSURE/VACUUM VALVE
N-956 - 77 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2006 WITH PRESSURE/VACUUM VALVE
N-956 - 78 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2007 WITH PRESSURE/VACUUM VALVE
N-956 - 79 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2008 WITH PRESSURE/VACUUM VALVE
N-956 - 80 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2009 WITH PRESSURE/VACUUM VALVE
N-956 - 81 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2010 WITH PRESSURE/VACUUM VALVE
N-956 - 82 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2011 WITH PRESSURE/VACUUM VALVE
N-956 - 83 - 0	: 218,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 2012 WITH PRESSURE/VACUUM VALVE
N-956 - 84 - 0	: 218,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 2013 WITH PRESSURE/VACUUM VALVE
N-956 - 85 - 0	: 218,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 2014 WITH PRESSURE/VACUUM VALVE
N-956 - 86 - 0	: 218,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 2015 WITH PRESSURE/VACUUM VALVE
N-956 - 87 - 0	: 218,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 2016 WITH PRESSURE/VACUUM VALVE
N-956 - 88 - 0	: 218,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 2017 WITH PRESSURE/VACUUM VALVE
N-956 - 89 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2018 WITH PRESSURE/VACUUM VALVE
N-956 - 90 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2019 WITH PRESSURE/VACUUM VALVE
N-956 - 91 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2020 WITH PRESSURE/VACUUM VALVE
N-956 - 92 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2021 WITH PRESSURE/VACUUM VALVE
N-956 - 93 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2022 WITH PRESSURE/VACUUM VALVE
N-956 - 94 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2023 WITH PRESSURE/VACUUM VALVE
N-956 - 95 - 0	: 217,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 2025 WITH PRESSURE/VACUUM VALVE
N-956 - 96 - 0	: 217,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 2026 WITH PRESSURE/VACUUM VALVE
N-956 - 97 - 0	: 217,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 2027 WITH PRESSURE/VACUUM VALVE
N-956 - 98 - 0	: 217,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 2028 WITH PRESSURE/VACUUM VALVE
N-956 - 99 - 0	: 217,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 2029 WITH PRESSURE/VACUUM VALVE
N-956 - 100 - 0	: 217,000 GALLON STAINLESS STEEL ENCLOSED TOP RED WINE FERMENTATION AND WINE STORAGE TANK 2030 WITH PRESSURE/VACUUM VALVE
N-956 - 101 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2031 WITH PRESSURE/VACUUM VALVE
N-956 - 102 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2032 WITH PRESSURE/VACUUM VALVE
N-956 - 103 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2033 WITH PRESSURE/VACUUM VALVE
N-956 - 104 - 0	: 217,000 GALLON STAINLESS STEEL WINE STORAGE TANK 2034 WITH PRESSURE/VACUUM VALVE

## PRE-PROJECT EQUIPMENT DESCRIPTIONS

PERMIT NO.	EQUIPMENT DESCRIPTION
N-956 - 105 - 0	: 217,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 2039 WITH PRESSURE/VACUUM VALVE
N-956 - 106 - 0	: 217,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 2040 WITH PRESSURE/VACUUM VALVE
N-956 - 107 - 0	: 217,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 2041 WITH PRESSURE/VACUUM VALVE
N-956 - 108 - 0	: 217,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 2042 WITH PRESSURE/VACUUM VALVE
N-956 - 109 - 0	: 217,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 2043 WITH PRESSURE/VACUUM VALVE
N-956 - 110 - 0	: 217,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 2044 WITH PRESSURE/VACUUM VALVE
N-956 - 111 - 0	: 217,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 2045 WITH PRESSURE/VACUUM VALVE
N-956 - 112 - 0	: 217,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 2047 WITH PRESSURE/VACUUM VALVE
N-956 - 113 - 0	: 217,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 2048 WITH PRESSURE/VACUUM VALVE
N-956 - 114 - 0	: 217,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 2049 WITH PRESSURE/VACUUM VALVE
N-956 - 115 - 0	: 350,000 GALLON STAINLESS STEEL WINE STORAGE TANK 3001 WITH PRESSURE/VACUUM VALVE
N-956 - 116 - 0	: 350,000 GALLON STAINLESS STEEL WINE STORAGE TANK 3002 WITH PRESSURE/VACUUM VALVE
N-956 - 117 - 0	: 350,000 GALLON STAINLESS STEEL WINE STORAGE TANK 3003 WITH PRESSURE/VACUUM VALVE
N-956 - 118 - 0	: 323,000 GALLON GLASS LINED WINE STORAGE TANK 3004 WITH PRESSURE/VACUUM VALVE
N-956 - 119 - 0	: 323,000 GALLON GLASS LINED WINE STORAGE TANK 3005 WITH PRESSURE/VACUUM VALVE
N-956 - 120 - 0	: 323,000 GALLON GLASS LINED WINE STORAGE TANK 3006 WITH PRESSURE/VACUUM VALVE
N-956 - 121 - 0	: 323,000 GALLON GLASS LINED WINE STORAGE TANK 3007 WITH PRESSURE/VACUUM VALVE
N-956 - 122 - 0	: 323,000 GALLON GLASS LINED WINE STORAGE TANK 3008 WITH PRESSURE/VACUUM VALVE
N-956 - 123 - 0	: 323,000 GALLON GLASS LINED WINE STORAGE TANK 3009 WITH PRESSURE/VACUUM VALVE
N-956 - 124 - 0	: 323,000 GALLON GLASS LINED WINE STORAGE TANK 3010 WITH PRESSURE/VACUUM VALVE
N-956 - 125 - 0	: 323,000 GALLON GLASS LINED WINE STORAGE TANK 3011 WITH PRESSURE/VACUUM VALVE
N-956 - 126 - 0	: 324,000 GALLON STAINLESS STEEL WINE STORAGE TANK 3012 WITH PRESSURE/VACUUM VALVE
N-956 - 127 - 0	: 350,000 GALLON STAINLESS STEEL WINE STORAGE TANK 3013 WITH PRESSURE/VACUUM VALVE
N-956 - 128 - 0	: 350,000 GALLON STAINLESS STEEL WINE STORAGE TANK 3014 WITH PRESSURE/VACUUM VALVE
N-956 - 129 - 0	: 350,000 GALLON STAINLESS STEEL WINE STORAGE TANK 3015 WITH PRESSURE/VACUUM VALVE
N-956 - 130 - 0	: 350,000 GALLON STAINLESS STEEL WINE STORAGE TANK 3016 WITH PRESSURE/VACUUM VALVE
N-956 - 131 - 0	: 350,000 GALLON STAINLESS STEEL WINE STORAGE TANK 3017 WITH PRESSURE/VACUUM VALVE
N-956 - 132 - 0	: 350,000 GALLON STAINLESS STEEL WINE STORAGE TANK 3018 WITH PRESSURE/VACUUM VALVE
N-956 - 133 - 0	: 350,000 GALLON STAINLESS STEEL WINE STORAGE TANK 3019 WITH PRESSURE/VACUUM VALVE
N-956 - 134 - 0	: 350,000 GALLON STAINLESS STEEL WINE STORAGE TANK 3020 WITH PRESSURE/VACUUM VALVE
N-956 - 135 - 0	: 350,000 GALLON STAINLESS STEEL WINE STORAGE TANK 3021 WITH PRESSURE/VACUUM VALVE



## PRE-PROJECT EQUIPMENT DESCRIPTIONS

PERMIT NO.	EQUIPMENT DESCRIPTION
N-956 - 165 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3051 WITH PRESSURE/VACUUM VALVE
N-956 - 166 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3052 WITH PRESSURE/VACUUM VALVE
N-956 - 167 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3053 WITH PRESSURE/VACUUM VALVE
N-956 - 168 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3054 WITH PRESSURE/VACUUM VALVE
N-956 - 169 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3055 WITH PRESSURE/VACUUM VALVE
N-956 - 170 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3056 WITH PRESSURE/VACUUM VALVE
N-956 - 171 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3057 WITH PRESSURE/VACUUM VALVE
N-956 - 172 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3058 WITH PRESSURE/VACUUM VALVE
N-956 - 173 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3059 WITH PRESSURE/VACUUM VALVE
N-956 - 174 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3060 WITH PRESSURE/VACUUM VALVE
N-956 - 175 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3061 WITH PRESSURE/VACUUM VALVE
N-956 - 176 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3062 WITH PRESSURE/VACUUM VALVE
N-956 - 177 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3063 WITH PRESSURE/VACUUM VALVE
N-956 - 178 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3064 WITH PRESSURE/VACUUM VALVE
N-956 - 179 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3065 WITH PRESSURE/VACUUM VALVE
N-956 - 180 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3066 WITH PRESSURE/VACUUM VALVE
N-956 - 181 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3067 WITH PRESSURE/VACUUM VALVE
N-956 - 182 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3068 WITH PRESSURE/VACUUM VALVE
N-956 - 183 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3070 WITH PRESSURE/VACUUM VALVE
N-956 - 184 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3072 WITH PRESSURE/VACUUM VALVE

## PRE-PROJECT EQUIPMENT DESCRIPTIONS

PERMIT NO.	EQUIPMENT DESCRIPTION
N-956 - 185 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3074 WITH PRESSURE/VACUUM VALVE
N-956 - 186 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3076 WITH PRESSURE/VACUUM VALVE
N-956 - 187 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3077 WITH PRESSURE/VACUUM VALVE
N-956 - 188 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3078 WITH PRESSURE/VACUUM VALVE
N-956 - 189 - 0	: 350,000 GALLON STAINLESS STEEL ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 3079 WITH PRESSURE/VACUUM VALVE
N-956 - 190 - 0	: 650,000 GALLON GLASS LINED WINE STORAGE TANK 6013 WITH PRESSURE/VACUUM VALVE
N-956 - 191 - 0	: 650,000 GALLON GLASS LINED WINE STORAGE TANK 6014 WITH PRESSURE/VACUUM VALVE
N-956 - 192 - 0	: 650,000 GALLON GLASS LINED WINE STORAGE TANK 6015 WITH PRESSURE/VACUUM VALVE
N-956 - 193 - 0	: 650,000 GALLON GLASS LINED WINE STORAGE TANK 6019 WITH PRESSURE/VACUUM VALVE
N-956 - 194 - 0	: 650,000 GALLON GLASS LINED WINE STORAGE TANK 6020 WITH PRESSURE/VACUUM VALVE
N-956 - 195 - 0	: 650,000 GALLON GLASS LINED ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 6021 WITH PRESSURE/VACUUM VALVE
N-956 - 196 - 0	: 650,000 GALLON GLASS LINED ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 6022 WITH PRESSURE/VACUUM VALVE
N-956 - 197 - 0	: 650,000 GALLON GLASS LINED ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 6023 WITH PRESSURE/VACUUM VALVE
N-956 - 198 - 0	: 650,000 GALLON GLASS LINED ENCLOSED TOP WHITE WINE FERMENTATION AND WINE STORAGE TANK 6024 WITH PRESSURE/VACUUM VALVE
N-956 - 199 - 0	: 705,000 GALLON STAINLESS STEEL WINE STORAGE TANK 7001 WITH PRESSURE/VACUUM VALVE
N-956 - 200 - 0	: 705,000 GALLON STAINLESS STEEL WINE STORAGE TANK 7002 WITH PRESSURE/VACUUM VALVE
N-956 - 201 - 0	: 705,000 GALLON STAINLESS STEEL WINE STORAGE TANK 7003 WITH PRESSURE/VACUUM VALVE
N-956 - 202 - 0	: 705,000 GALLON STAINLESS STEEL WINE STORAGE TANK 7004 WITH PRESSURE/VACUUM VALVE
N-956 - 203 - 0	: 19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 205) WITH PRESSURE/VACUUM VALVE
N-956 - 204 - 0	: 19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 206) WITH PRESSURE/VACUUM VALVE
N-956 - 205 - 0	: 19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 207) WITH PRESSURE/VACUUM VALVE
N-956 - 206 - 0	: 19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 208) WITH PRESSURE/VACUUM VALVE
N-956 - 207 - 0	: 19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 209) WITH PRESSURE/VACUUM VALVE
N-956 - 208 - 0	: 19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 210) WITH PRESSURE/VACUUM VALVE
N-956 - 209 - 0	: 19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 211) WITH PRESSURE/VACUUM VALVE
N-956 - 210 - 0	: 19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 212) WITH PRESSURE/VACUUM VALVE
N-956 - 211 - 0	: 19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 213) WITH PRESSURE/VACUUM VALVE
N-956 - 212 - 0	: 19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 214) WITH PRESSURE/VACUUM VALVE
N-956 - 213 - 0	: 19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 215) WITH PRESSURE/VACUUM VALVE
N-956 - 214 - 0	: 19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 216) WITH PRESSURE/VACUUM VALVE
N-956 - 215 - 0	: 19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 217) WITH PRESSURE/VACUUM VALVE
N-956 - 216 - 0	: 19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 218) WITH PRESSURE/VACUUM VALVE

## PRE-PROJECT EQUIPMENT DESCRIPTIONS

PERMIT NO.	EQUIPMENT DESCRIPTION
N-956 - 217 - 0	: 19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 219) WITH PRESSURE/VACUUM VALVE
N-956 - 218 - 0	: 19,500 GALLON STAINLESS STEEL WINE STORAGE TANK (TANK 220) WITH PRESSURE/VACUUM VALVE

## **APPENDIX C**

### **ATC Equipment Descriptions**

## POST-PROJECT EQUIPMENT DESCRIPTIONS

PERMIT NO.	EQUIPMENT DESCRIPTION
N-956 - 11 - 2	: 15,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK B1 WITH PRESSURE/VACUUM VALVE
N-956 - 12 - 2	: 15,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK B2 WITH PRESSURE/VACUUM VALVE
N-956 - 13 - 2	: 10,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 24 WITH PRESSURE/VACUUM VALVE
N-956 - 14 - 2	: 10,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 39 WITH PRESSURE/VACUUM VALVE
N-956 - 15 - 2	: 120,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 44 WITH PRESSURE/VACUUM VALVE
N-956 - 16 - 2	: 120,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 45 WITH PRESSURE/VACUUM VALVE
N-956 - 17 - 2	: 120,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 46 WITH PRESSURE/VACUUM VALVE
N-956 - 18 - 2	: 120,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 47 WITH PRESSURE/VACUUM VALVE
N-956 - 19 - 2	: 120,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 48 WITH PRESSURE/VACUUM VALVE
N-956 - 20 - 2	: 120,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 49 WITH PRESSURE/VACUUM VALVE
N-956 - 21 - 2	: 120,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 50 WITH PRESSURE/VACUUM VALVE
N-956 - 22 - 2	: 30,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 51 WITH PRESSURE/VACUUM VALVE
N-956 - 23 - 2	: 30,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 52 WITH PRESSURE/VACUUM VALVE
N-956 - 24 - 2	: 30,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 53 WITH PRESSURE/VACUUM VALVE
N-956 - 25 - 2	: 30,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 54 WITH PRESSURE/VACUUM VALVE
N-956 - 26 - 2	: 20,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 55 WITH PRESSURE/VACUUM VALVE
N-956 - 27 - 2	: 60,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 56 WITH PRESSURE/VACUUM VALVE
N-956 - 28 - 2	: 60,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 57 WITH PRESSURE/VACUUM VALVE
N-956 - 29 - 2	: 60,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 58 WITH PRESSURE/VACUUM VALVE
N-956 - 30 - 2	: 60,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 59 WITH PRESSURE/VACUUM VALVE

## POST-PROJECT EQUIPMENT DESCRIPTIONS

PERMIT NO.	EQUIPMENT DESCRIPTION
N-956 - 31 - 2	: 60,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 60 WITH PRESSURE/VACUUM VALVE
N-956 - 32 - 2	: 12,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 62 WITH PRESSURE/VACUUM VALVE
N-956 - 33 - 2	: 120,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 116 WITH PRESSURE/VACUUM VALVE
N-956 - 34 - 2	: 120,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 117 WITH PRESSURE/VACUUM VALVE
N-956 - 35 - 2	: 120,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 118 WITH PRESSURE/VACUUM VALVE
N-956 - 36 - 2	: 15,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 131 WITH PRESSURE/VACUUM VALVE
N-956 - 37 - 2	: 15,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 132 WITH PRESSURE/VACUUM VALVE
N-956 - 38 - 2	: 30,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 133 WITH PRESSURE/VACUUM VALVE
N-956 - 39 - 2	: 30,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 134 WITH PRESSURE/VACUUM VALVE
N-956 - 40 - 2	: 30,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 135 WITH PRESSURE/VACUUM VALVE
N-956 - 41 - 2	: 30,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 136 WITH PRESSURE/VACUUM VALVE
N-956 - 42 - 2	: 5,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 196 WITH PRESSURE/VACUUM VALVE
N-956 - 43 - 2	: 105,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1001 WITH PRESSURE/VACUUM VALVE
N-956 - 44 - 2	: 105,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1002 WITH PRESSURE/VACUUM VALVE
N-956 - 45 - 2	: 105,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1003 WITH PRESSURE/VACUUM VALVE
N-956 - 46 - 2	: 105,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1004 WITH PRESSURE/VACUUM VALVE
N-956 - 47 - 2	: 105,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1005 WITH PRESSURE/VACUUM VALVE
N-956 - 48 - 2	: 105,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1006 WITH PRESSURE/VACUUM VALVE
N-956 - 49 - 2	: 105,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1007 WITH PRESSURE/VACUUM VALVE
N-956 - 50 - 2	: 105,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1008 WITH PRESSURE/VACUUM VALVE

## POST-PROJECT EQUIPMENT DESCRIPTIONS

PERMIT NO.	EQUIPMENT DESCRIPTION
N-956 - 51 - 2	: 105,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1009 WITH PRESSURE/VACUUM VALVE
N-956 - 52 - 2	: 105,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1011 WITH PRESSURE/VACUUM VALVE
N-956 - 53 - 2	: 105,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1012 WITH PRESSURE/VACUUM VALVE
N-956 - 54 - 2	: 106,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1013 WITH PRESSURE/VACUUM VALVE
N-956 - 55 - 2	: 106,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1014 WITH PRESSURE/VACUUM VALVE
N-956 - 56 - 2	: 106,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1015 WITH PRESSURE/VACUUM VALVE
N-956 - 57 - 2	: 106,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1016 WITH PRESSURE/VACUUM VALVE
N-956 - 58 - 2	: 106,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1017 WITH PRESSURE/VACUUM VALVE
N-956 - 59 - 2	: 106,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1018 WITH PRESSURE/VACUUM VALVE
N-956 - 60 - 2	: 106,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1019 WITH PRESSURE/VACUUM VALVE
N-956 - 61 - 2	: 106,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1020 WITH PRESSURE/VACUUM VALVE
N-956 - 62 - 2	: 106,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1021 WITH PRESSURE/VACUUM VALVE
N-956 - 63 - 2	: 106,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1022 WITH PRESSURE/VACUUM VALVE
N-956 - 64 - 2	: 106,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1023 WITH PRESSURE/VACUUM VALVE
N-956 - 65 - 2	: 106,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1024 WITH PRESSURE/VACUUM VALVE
N-956 - 66 - 2	: 106,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1025 WITH PRESSURE/VACUUM VALVE
N-956 - 67 - 2	: 103,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1026 WITH PRESSURE/VACUUM VALVE
N-956 - 68 - 2	: 103,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1027 WITH PRESSURE/VACUUM VALVE
N-956 - 69 - 2	: 103,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1028 WITH PRESSURE/VACUUM VALVE
N-956 - 70 - 2	: 103,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1029 WITH PRESSURE/VACUUM VALVE

## POST-PROJECT EQUIPMENT DESCRIPTIONS

PERMIT NO.	EQUIPMENT DESCRIPTION
N-956 - 71 - 2	103,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 1030 WITH PRESSURE/VACUUM VALVE
N-956 - 72 - 2	217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2001 WITH PRESSURE/VACUUM VALVE
N-956 - 73 - 2	217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2002 WITH PRESSURE/VACUUM VALVE
N-956 - 74 - 2	217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2003 WITH PRESSURE/VACUUM VALVE
N-956 - 75 - 2	217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2004 WITH PRESSURE/VACUUM VALVE
N-956 - 76 - 2	217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2005 WITH PRESSURE/VACUUM VALVE
N-956 - 77 - 2	217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2006 WITH PRESSURE/VACUUM VALVE
N-956 - 78 - 2	217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2007 WITH PRESSURE/VACUUM VALVE
N-956 - 79 - 2	217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2008 WITH PRESSURE/VACUUM VALVE
N-956 - 80 - 2	217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2009 WITH PRESSURE/VACUUM VALVE
N-956 - 81 - 2	217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2010 WITH PRESSURE/VACUUM VALVE
N-956 - 82 - 2	217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2011 WITH PRESSURE/VACUUM VALVE
N-956 - 83 - 2	218,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2012 WITH PRESSURE/VACUUM VALVE
N-956 - 84 - 2	218,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2013 WITH PRESSURE/VACUUM VALVE
N-956 - 85 - 2	218,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2014 WITH PRESSURE/VACUUM VALVE
N-956 - 86 - 2	218,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2015 WITH PRESSURE/VACUUM VALVE
N-956 - 87 - 2	218,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2016 WITH PRESSURE/VACUUM VALVE
N-956 - 88 - 2	218,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2017 WITH PRESSURE/VACUUM VALVE
N-956 - 89 - 2	217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2018 WITH PRESSURE/VACUUM VALVE
N-956 - 90 - 2	217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2019 WITH PRESSURE/VACUUM VALVE

## POST-PROJECT EQUIPMENT DESCRIPTIONS

PERMIT NO.	EQUIPMENT DESCRIPTION
N-956 - 91 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2020 WITH PRESSURE/VACUUM VALVE
N-956 - 92 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2021 WITH PRESSURE/VACUUM VALVE
N-956 - 93 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2022 WITH PRESSURE/VACUUM VALVE
N-956 - 94 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2023 WITH PRESSURE/VACUUM VALVE
N-956 - 95 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2025 WITH PRESSURE/VACUUM VALVE
N-956 - 96 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2026 WITH PRESSURE/VACUUM VALVE
N-956 - 97 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2027 WITH PRESSURE/VACUUM VALVE
N-956 - 98 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2028 WITH PRESSURE/VACUUM VALVE
N-956 - 99 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2029 WITH PRESSURE/VACUUM VALVE
N-956 - 100 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2030 WITH PRESSURE/VACUUM VALVE
N-956 - 101 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2031 WITH PRESSURE/VACUUM VALVE
N-956 - 102 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2032 WITH PRESSURE/VACUUM VALVE
N-956 - 103 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2033 WITH PRESSURE/VACUUM VALVE
N-956 - 104 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2034 WITH PRESSURE/VACUUM VALVE
N-956 - 105 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2039 WITH PRESSURE/VACUUM VALVE
N-956 - 106 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2040 WITH PRESSURE/VACUUM VALVE
N-956 - 107 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2041 WITH PRESSURE/VACUUM VALVE
N-956 - 108 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2042 WITH PRESSURE/VACUUM VALVE
N-956 - 109 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2043 WITH PRESSURE/VACUUM VALVE
N-956 - 110 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2044 WITH PRESSURE/VACUUM VALVE

## POST-PROJECT EQUIPMENT DESCRIPTIONS

PERMIT NO.	EQUIPMENT DESCRIPTION
N-956 - 111 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2045 WITH PRESSURE/VACUUM VALVE
N-956 - 112 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2047 WITH PRESSURE/VACUUM VALVE
N-956 - 113 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2048 WITH PRESSURE/VACUUM VALVE
N-956 - 114 - 2	: 217,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 2049 WITH PRESSURE/VACUUM VALVE
N-956 - 115 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3001 WITH PRESSURE/VACUUM VALVE
N-956 - 116 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3002 WITH PRESSURE/VACUUM VALVE
N-956 - 117 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3003 WITH PRESSURE/VACUUM VALVE
N-956 - 118 - 2	: 323,000 GALLON GLASS LINED RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3004 WITH PRESSURE/VACUUM VALVE
N-956 - 119 - 2	: 323,000 GALLON GLASS LINED RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3005 WITH PRESSURE/VACUUM VALVE
N-956 - 120 - 2	: 323,000 GALLON GLASS LINED RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3006 WITH PRESSURE/VACUUM VALVE
N-956 - 121 - 2	: 323,000 GALLON GLASS LINED RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3007 WITH PRESSURE/VACUUM VALVE
N-956 - 122 - 2	: 323,000 GALLON GLASS LINED RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3008 WITH PRESSURE/VACUUM VALVE
N-956 - 123 - 2	: 323,000 GALLON GLASS LINED RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3009 WITH PRESSURE/VACUUM VALVE
N-956 - 124 - 2	: 323,000 GALLON GLASS LINED RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3010 WITH PRESSURE/VACUUM VALVE
N-956 - 125 - 2	: 323,000 GALLON GLASS LINED RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3011 WITH PRESSURE/VACUUM VALVE
N-956 - 126 - 2	: 324,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3012 WITH PRESSURE/VACUUM VALVE
N-956 - 127 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3013 WITH PRESSURE/VACUUM VALVE
N-956 - 128 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3014 WITH PRESSURE/VACUUM VALVE
N-956 - 129 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3015 WITH PRESSURE/VACUUM VALVE
N-956 - 130 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3016 WITH PRESSURE/VACUUM VALVE

## POST-PROJECT EQUIPMENT DESCRIPTIONS

PERMIT NO.	EQUIPMENT DESCRIPTION
N-956 - 131 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3017 WITH PRESSURE/VACUUM VALVE
N-956 - 132 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3018 WITH PRESSURE/VACUUM VALVE
N-956 - 133 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3019 WITH PRESSURE/VACUUM VALVE
N-956 - 134 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3020 WITH PRESSURE/VACUUM VALVE
N-956 - 135 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3021 WITH PRESSURE/VACUUM VALVE
N-956 - 136 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3022 WITH PRESSURE/VACUUM VALVE
N-956 - 137 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3023 WITH PRESSURE/VACUUM VALVE
N-956 - 138 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3024 WITH PRESSURE/VACUUM VALVE
N-956 - 139 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3025 WITH PRESSURE/VACUUM VALVE
N-956 - 140 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3026 WITH PRESSURE/VACUUM VALVE
N-956 - 141 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3027 WITH PRESSURE/VACUUM VALVE
N-956 - 142 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3028 WITH PRESSURE/VACUUM VALVE
N-956 - 143 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3029 WITH PRESSURE/VACUUM VALVE
N-956 - 144 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3030 WITH PRESSURE/VACUUM VALVE
N-956 - 145 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3031 WITH PRESSURE/VACUUM VALVE
N-956 - 146 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3032 WITH PRESSURE/VACUUM VALVE
N-956 - 147 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3033 WITH PRESSURE/VACUUM VALVE
N-956 - 148 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3034 WITH PRESSURE/VACUUM VALVE
N-956 - 149 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3035 WITH PRESSURE/VACUUM VALVE
N-956 - 150 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3036 WITH PRESSURE/VACUUM VALVE

## POST-PROJECT EQUIPMENT DESCRIPTIONS

PERMIT NO.	EQUIPMENT DESCRIPTION
N-956 - 151 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3037 WITH PRESSURE/VACUUM VALVE
N-956 - 152 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3038 WITH PRESSURE/VACUUM VALVE
N-956 - 153 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3039 WITH PRESSURE/VACUUM VALVE
N-956 - 154 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3040 WITH PRESSURE/VACUUM VALVE
N-956 - 155 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3041 WITH PRESSURE/VACUUM VALVE
N-956 - 156 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3042 WITH PRESSURE/VACUUM VALVE
N-956 - 157 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3043 WITH PRESSURE/VACUUM VALVE
N-956 - 158 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3044 WITH PRESSURE/VACUUM VALVE
N-956 - 159 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3045 WITH PRESSURE/VACUUM VALVE
N-956 - 160 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3046 WITH PRESSURE/VACUUM VALVE
N-956 - 161 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3047 WITH PRESSURE/VACUUM VALVE
N-956 - 162 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3048 WITH PRESSURE/VACUUM VALVE
N-956 - 163 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3049 WITH PRESSURE/VACUUM VALVE
N-956 - 164 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3050 WITH PRESSURE/VACUUM VALVE
N-956 - 165 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3051 WITH PRESSURE/VACUUM VALVE
N-956 - 166 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3052 WITH PRESSURE/VACUUM VALVE
N-956 - 167 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3053 WITH PRESSURE/VACUUM VALVE
N-956 - 168 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3054 WITH PRESSURE/VACUUM VALVE
N-956 - 169 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3055 WITH PRESSURE/VACUUM VALVE
N-956 - 170 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3056 WITH PRESSURE/VACUUM VALVE

## POST-PROJECT EQUIPMENT DESCRIPTIONS

PERMIT NO.	EQUIPMENT DESCRIPTION
N-956 - 171 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3057 WITH PRESSURE/VACUUM VALVE
N-956 - 172 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3058 WITH PRESSURE/VACUUM VALVE
N-956 - 173 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3059 WITH PRESSURE/VACUUM VALVE
N-956 - 174 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3060 WITH PRESSURE/VACUUM VALVE
N-956 - 175 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3061 WITH PRESSURE/VACUUM VALVE
N-956 - 176 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3062 WITH PRESSURE/VACUUM VALVE
N-956 - 177 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3063 WITH PRESSURE/VACUUM VALVE
N-956 - 178 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3064 WITH PRESSURE/VACUUM VALVE
N-956 - 179 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3065 WITH PRESSURE/VACUUM VALVE
N-956 - 180 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3066 WITH PRESSURE/VACUUM VALVE
N-956 - 181 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3067 WITH PRESSURE/VACUUM VALVE
N-956 - 182 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3068 WITH PRESSURE/VACUUM VALVE
N-956 - 183 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3070 WITH PRESSURE/VACUUM VALVE
N-956 - 184 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3072 WITH PRESSURE/VACUUM VALVE
N-956 - 185 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3074 WITH PRESSURE/VACUUM VALVE
N-956 - 186 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3076 WITH PRESSURE/VACUUM VALVE
N-956 - 187 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3077 WITH PRESSURE/VACUUM VALVE
N-956 - 188 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3078 WITH PRESSURE/VACUUM VALVE
N-956 - 189 - 2	: 350,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 3079 WITH PRESSURE/VACUUM VALVE
N-956 - 190 - 2	: 650,000 GALLON GLASS LINED RED AND WHITE WINE FERMENTATION AND STORAGE TANK 6013 WITH PRESSURE/VACUUM VALVE

## POST-PROJECT EQUIPMENT DESCRIPTIONS

PERMIT NO.	EQUIPMENT DESCRIPTION
N-956 - 191 - 2	: 650,000 GALLON GLASS LINED RED AND WHITE WINE FERMENTATION AND STORAGE TANK 6014 WITH PRESSURE/VACUUM VALVE
N-956 - 192 - 2	: 650,000 GALLON GLASS LINED RED AND WHITE WINE FERMENTATION AND STORAGE TANK 6015 WITH PRESSURE/VACUUM VALVE
N-956 - 193 - 2	: 650,000 GALLON GLASS LINED RED AND WHITE WINE FERMENTATION AND STORAGE TANK 6019 WITH PRESSURE/VACUUM VALVE
N-956 - 194 - 2	: 650,000 GALLON GLASS LINED RED AND WHITE WINE FERMENTATION AND STORAGE TANK 6020 WITH PRESSURE/VACUUM VALVE
N-956 - 195 - 2	: 650,000 GALLON GLASS LINED RED AND WHITE WINE FERMENTATION AND STORAGE TANK 6021 WITH PRESSURE/VACUUM VALVE
N-956 - 196 - 2	: 650,000 GALLON GLASS LINED RED AND WHITE WINE FERMENTATION AND STORAGE TANK 6022 WITH PRESSURE/VACUUM VALVE
N-956 - 197 - 2	: 650,000 GALLON GLASS LINED RED AND WHITE WINE FERMENTATION AND STORAGE TANK 6023 WITH PRESSURE/VACUUM VALVE
N-956 - 198 - 2	: 650,000 GALLON GLASS LINED RED AND WHITE WINE FERMENTATION AND STORAGE TANK 6024 WITH PRESSURE/VACUUM VALVE
N-956 - 199 - 2	: 705,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 7001 WITH PRESSURE/VACUUM VALVE
N-956 - 200 - 2	: 705,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 7002 WITH PRESSURE/VACUUM VALVE
N-956 - 201 - 2	: 705,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 7003 WITH PRESSURE/VACUUM VALVE
N-956 - 202 - 2	: 705,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK 7004 WITH PRESSURE/VACUUM VALVE
N-956 - 203 - 1	: 19,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 205) WITH PRESSURE/VACUUM VALVE
N-956 - 204 - 1	: 19,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 206) WITH PRESSURE/VACUUM VALVE
N-956 - 205 - 1	: 19,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 207) WITH PRESSURE/VACUUM VALVE
N-956 - 206 - 1	: 19,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 208) WITH PRESSURE/VACUUM VALVE
N-956 - 207 - 1	: 19,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 209) WITH PRESSURE/VACUUM VALVE
N-956 - 208 - 1	: 19,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 210) WITH PRESSURE/VACUUM VALVE
N-956 - 209 - 1	: 19,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 211) WITH PRESSURE/VACUUM VALVE
N-956 - 210 - 1	: 19,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 212) WITH PRESSURE/VACUUM VALVE

## POST-PROJECT EQUIPMENT DESCRIPTIONS

PERMIT NO.	EQUIPMENT DESCRIPTION
N-956 - 211 - 1	19,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 213) WITH PRESSURE/VACUUM VALVE
N-956 - 212 - 1	19,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 214) WITH PRESSURE/VACUUM VALVE
N-956 - 213 - 1	19,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 215) WITH PRESSURE/VACUUM VALVE
N-956 - 214 - 1	19,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 216) WITH PRESSURE/VACUUM VALVE
N-956 - 215 - 1	19,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 217) WITH PRESSURE/VACUUM VALVE
N-956 - 216 - 1	19,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 218) WITH PRESSURE/VACUUM VALVE
N-956 - 217 - 1	19,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 219) WITH PRESSURE/VACUUM VALVE
N-956 - 218 - 1	19,500 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK (TANK 220) WITH PRESSURE/VACUUM VALVE
N-956 - 236 - 0	20,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK WITH PRESSURE/VACUUM VALVE
N-956 - 237 - 0	20,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK WITH PRESSURE/VACUUM VALVE
N-956 - 238 - 0	14,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK WITH PRESSURE/VACUUM VALVE
N-956 - 239 - 0	14,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK WITH PRESSURE/VACUUM VALVE
N-956 - 240 - 0	14,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK WITH PRESSURE/VACUUM VALVE
N-956 - 241 - 0	14,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK WITH PRESSURE/VACUUM VALVE
N-956 - 242 - 0	14,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK WITH PRESSURE/VACUUM VALVE
N-956 - 243 - 0	14,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK WITH PRESSURE/VACUUM VALVE
N-956 - 244 - 0	14,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK WITH PRESSURE/VACUUM VALVE
N-956 - 245 - 0	14,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK WITH PRESSURE/VACUUM VALVE
N-956 - 246 - 0	14,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK WITH PRESSURE/VACUUM VALVE
N-956 - 247 - 0	14,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK WITH PRESSURE/VACUUM VALVE

## POST-PROJECT EQUIPMENT DESCRIPTIONS

PERMIT NO.	EQUIPMENT DESCRIPTION
N-956 - 248 - 0 :	14,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK WITH PRESSURE/VACUUM VALVE
N-956 - 249 - 0 :	14,000 GALLON STAINLESS STEEL RED AND WHITE WINE FERMENTATION AND STORAGE TANK WITH PRESSURE/VACUUM VALVE

## **APPENDIX D**

### **Draft Policy for Calculation of Winery Emissions**

# DRAFT

**TO:** Permit Services Division Staff

**FROM:** Dennis Roberts

**DATE:** June 30, 2009

**SUBJECT:** Calculation of the Potential to Emit for VOC Emissions from Wine Fermentation and Storage Operations

## **Purpose**

The purpose of this policy is to establish a framework for calculating the collective Potential to Emit for VOCs from wine fermentation and storage tanks which have been previously permitted by in-house Permits to Operate based on loss-of-exemption. Such calculation is primarily performed for purposes of establishing the collective Pre-Project Potential to Emit (PE1) to form the basis for a Specific Limiting Condition (SLC) on all wine tanks at a facility which limits PE2 = PE1.

## **Applicability**

This policy applies to all wine fermentation and storage operations.

## **Background**

The District began issuing permits for wine fermentation and storage tanks on August 21, 2005. In-house PTO's were issued for existing tanks based on a loss or exemption and therefore the tank permits were not subject to New Source Review. Currently, majority of all wine tank permits in the San Joaquin Valley are still in-house PTO's and thus do not contain emission limits such as they would have if subjected to New Source Review (NSR).

Due to changing consumer tastes, the wine industry in the San Joaquin Valley is changing from the production of wines typically made in large tanks to the production of wine in smaller tanks, using smaller batches of select grapes and smaller fermentation batch sizes, with the objective of producing higher quality wines. To produce the same volume of wine in this manner requires more tanks and smaller tanks. Permitting of additional new, smaller wine fermentation and storage tanks could require the purchase of emissions offsets, even in those cases when a winery is just changing to smaller lot production and overall production is not increasing. Where all tanks meet the requirements for Best Available Control Technology (BACT), a potential permitting approach for adding tanks to a facility, for purposes of product flexibility and without triggering offsets, is to establish an SLC on all the tanks which limits the collective annual PE2 to the calculated collective PE1 for all the existing tanks. Since all units meet BACT, Baseline Emissions (BE) are equal to PE1 and calculated offsets are thus zero pursuant to Rule 2201.

The tanks at a winery are highly interdependent in operation and in the absence of a pre-established permit limit they cannot be considered as independent emissions units. By their nature, the various tank operations which convert crushed grapes into finished wine (fermentation, pressing, racking, filtration, etc.) cannot be all conducted in a single tank. In addition, other associated equipment such as that required for

crushing and pressing may serve to limit wine production by the facility. Therefore, a calculation of the PE for wine tanks requires that the tanks be considered in terms of a collective wine production capacity and that other production bottlenecks such as crushing and pressing limitations also be considered. This policy provides a theoretical basis and methodology for performing such a calculation.

### **Wine Production Process Description**

- The VOC emissions associated with winemaking are produced from two separate operations:
  1. Wine Fermentation (a chemical reaction process which converts sugar into ethanol)
  2. Storage Tank Operations during which post-fermentation operations such as racking, cold stabilization, filtration, etc., are also conducted.

Typically, all tanks in a winery are used for both purposes; thus a wine tank commonly consists of two separate emissions units.

- A general process description for wine production is given in U.S. EPA AP-42 Section 9.12.2. There are many variations to the basic process that reflect the individuality of the winemaking and which may be considered proprietary at most facilities. Some additions to the AP-42 description: White wines are fermented without the grape solids, which minimizes the amount of solids settling out in the fermentation tank, allowing white wine to potentially be fermented in any wine tank.
- Red wine is generally fermented with the grape solids which give the red color and other distinctive characteristics to the wine. Because of the solids settling out with red wine fermentation, specialized red wine fermentation tanks with sloped bottoms or constructed as a horizontal rotating drums are generally used to ease solids removal during tank cleaning.
- The tanks in a winery are highly interdependent in operation and therefore must be considered in terms of the collective production capacity. The fermentation capacity of a facility is not only a function of the capacity of the tanks actually performing fermentation but is also a function of the downstream storage tank capacity which may serve to bottleneck the upstream fermentation operation. The wine production process flow diagram in U.S. EPA AP-42 Figure 9.12.2.-1 is illustrative. Post fermentation operations such as cold stabilization, filtration, malolactic fermentation, etc., have historically required a post fermentation residence time in storage tanks of 40 days or less.
- The facility's grape crushing/destemming and pressing equipment may serve to bottleneck the overall operation, establishing the PE by limiting daily throughput of the facility or of individual fermentation tanks.
- Wine production in the San Joaquin Valley is a seasonal event, coinciding with the grape harvest season ("crush season"). Wine production typically occurs in the months of August through December. Fermentation is at its peak during

September through October; about 74% of wine fermentation occurs within those months in the San Joaquin Valley.

### **Basis and Assumptions for PE Calculation**

- Since the annual emissions from a winery operation are proportional to the annual wine production, the basic approach for calculating the PE for a winery operation is to determine the limiting factor for wine production at the facility and base the calculation on this factor. The following items are considered in determination of the actual "bottleneck" to wine production at a facility:

Grape Crushing/Destemming Capacity: Daily production is limited by the facility's capacity to receive and crush grapes. This capacity is established by the manufacturer's rated crushing capacity in tons per hour for the crushing equipment actually located at the facility.

Wine Pressing Capacity: Following crushing, the grape skins must be separated from the wine in the presses. For white wines, this occurs immediately after crushing. For red wines, pressing is performed after the fermentation step. This capacity is established by the manufacturer's rated pressing capacity in tons per hour for the pressing equipment actually located at the facility.

Winery Tank Capacity: Due to the highly inter-related operation of winery tanks, the collective production capacity of winery tankage, in terms of a required collective "minimum residence time" for wine processing, is the basis for the calculation rather than a consideration of the sum of individual theoretical production capacities for each tank. The capacity of the available tankage to produce both red and white wines is considered separately and the scenario which produces the highest potential emissions is considered to be the facility's basis for calculating the PE based on storage tanks limitations.

- The crushing of grapes is assumed to produce 200 gallons of produced wine based on data provided by The Wine Institute.
- Batch fermentation processing is assumed to require a 5 day turnaround for a red wine fermentation tank and a 10 day turnaround for white wine, i.e., a red wine fermenter can produce a batch every 5 days while a white wine fermenter can produce a batch every 10 days. These durations were previously established as a result of information provided by the Wine Institute during development of District Rule 4694 – *Wine Fermentation and Storage Tanks*.
- Post-fermentation processing is assumed to require a maximum of 40 days of retention time based on estimates by The Wine Institute (this duration may be less at some facilities depending upon the products and operating philosophy). This retention time accounts for the tank residence time required for post-fermentation processing such as malolactic fermentation, bentonite addition, filtration(s), blending(s), tartrate stabilization, bottling/packaging or bulk shipping.

- Maximum batch size in a red wine fermenter is 80% of nominal tank capacity due to potential expansion of the fermentation mass during operation as a result of rapid evolution of CO<sub>2</sub> from the fermentation reaction. White wine fermentation batches are assumed to be 100% of the tank's nominal capacity.
- Emission factors for wine fermentation are taken from District Rule 4694 as follows:

6.2 lb-VOC/1000 gallons produced red wine  
2.5 lb-VOC/1000 gallons produced white wine

- Emissions from post-fermentation storage tank operations will be calculated based on 8 inter-tank transfers during post-fermentation operations. The number of inter-tank transfers is at least 8 for wine fermented on-site per information provided by the Wine Institute. Each batch of wine is moved for the following processing operations at a minimum : 1) from fermentation to storage; 2) coarse filtration, 3) special processing (ex: ion exchange, centrifugation, addition of fining agents), 4) initial blending, 5) fine filtration, 6) final blending, 7) tartrate stabilization, 8) packaging or bulk shipping. (NOTE: The processing may not occur in this order for all wineries).
- Maximum average ethanol content for wine handled in the storage tank operations is 16 volume % (based on Wine Institute estimate for a typical winery).
- The emission factor for wine storage operations is taken from District FYI-114, *Estimating VOC Emissions from Wine Storage Tanks*. Since all tanks are assumed to meet BACT for wine storage, it will be assumed that breathing losses from the storage tanks are negligible since, pursuant to the current District BACT guideline, the tanks must be insulated or have equivalent isolation from significant diurnal impacts. Based on this assumption, the emission factor from FYI-114 is 0.23 lb-VOC/1000 gallons of tank throughput.
- Fermentation is assumed to occur only during the crush season. Based on documentation provided by the Wine institute, the duration of both the red and white wine crush seasons in the San Joaquin Valley is potentially 120 days each.
- Generally, in the absence of other restrictions, all tanks at a facility may be used for white wine fermentation. However, in some wineries, some tanks may have been added to the facility as storage-only tanks through an NSR permitting action subsequent to the initial in-house PTO's. These would not be available for white wine fermentation and their volume must be subtracted from the total tankage capacity to determine the actual white fermenter capacity. White wine production capacity is then calculated by the following general method:

*Given total white fermenter capacity  $V_w$  and the 10-day batch turnaround for white fermenters as stated above, the daily white fermenter capacity limit  $W_{w1}$  (gallons per day) during crush season is:*

$$W_{w1} = V_w \div 10$$

To determine the potential limitation due to storage tank capacity, the limiting daily white wine production capacity for a collection of fermentation & storage tanks with a total "effective" capacity  $V_t$  gallons may be calculated by considering a total wine residence time = 10 days fermentation + 50 days post-fermentation processing = 50 days total retention time (grape to finished wine). Where the facility does not include storage-only tanks with an NSR throughput limitation as mentioned above, the "effective" total tank capacity is equal to the total capacity of all tanks at the facility. Where the facility has NSR limited storage tanks, an effective total volume is calculated as outlined in Appendix A. The total tank production capacity for white wine  $W_{w2}$  (gallons per day) during crush season is then calculated as,

$$W_{w2} = V_t \div 50$$

The actual facility limit for white wine production  $W_w$  is then taken as the least of either the white fermenter capacity limit  $W_{w1}$  or the total tank capacity for white wine production  $W_{w2}$

- Since the fermentation of red wine requires specialized fermenters, the consideration of the capacity of the winery tankage to produce red wine must consider the fermentation capacity of these specialized red fermenters separately from the total processing capacity of the tanks. The smallest of either the red fermenter capacity or the total red wine processing capacity of the tanks is taken to be the red wine production limit for the facility:

Given total red fermenter capacity  $V_r$  and the 5-day batch turnaround for red fermenters as stated above, the daily red fermenter capacity limit  $W_{r1}$  (gallons per day) during crush season is:

$$W_{r1} = V_r \div 5$$

To determine the potential limitation due to storage tank capacity, the limiting daily red wine production capacity for a collection of fermentation & storage tanks with a total "effective" capacity  $V_t$  gallons may be calculated by considering a total wine residence time = 10 days fermentation + 50 days post-fermentation processing = 50 days total retention time (grape to finished wine). Note that the total tank volume is an "effective" volume as described above for white wine. The total tank production capacity for red wine  $W_{r2}$  (gallons per day) during crush season is then calculated as,

$$W_{r2} = V_t \div 45$$

The actual maximum daily capacity for red wine production  $W_r$  is then taken as the least of either the red fermenter capacity limit  $W_{r1}$  or the total tank capacity for red wine production  $W_{r2}$

### Calculation Model Sequence:

The Potentials to Emit for both a facility's wine fermentation operations and for the facility's storage tank operations are determined in the following sequence:

1. Potential fermentation emissions from a 100% white wine production scenario are first determined:

White wine production capacity is determined as the lesser of the production capacities of either the crushing, pressing or tankage.

$W_W$  = White wine production capacity (gallons per year as measured immediately after pressing) and is the lesser of the following three calculations:

$$W1 = C \times D_w \times M \text{ (limited by crusher capacity)}$$

$$W2 = P \times D_w \times M \text{ (limited by pressing capacity)}$$

$$W3 = (V_{FW} \times D_w) / W_{FW} \text{ (limited by white fermenter volume)}$$

$$W4 = (V_T \times D_w) / R_{TW} \text{ (limited by overall tank processing)}$$

C = grape crushing capacity, tons/day

$D_w$  = days in a white wine crush season = 120 days

M = gallons of grape juice produced per ton of grapes = 200 gallons/ton

P = pressing capacity, tons per day

$W_{FW}$  = White fermentation period = 10 days

$R_{TW}$  = Total winery retention time for white wine, 40 + 10 = 50 days

$V_{FW}$  = total volume of white wine fermenters

$V_T$  = Effective Total Winery Cooperage (gal) for white wine – see Appendix A

Potential white wine fermentation emissions are then determined by applying the white fermentation emission factor to the production capacity determined above:

$$PE_{\text{whitefermentation}} = E_{fw} \times W_W$$

where,

$E_{fw}$  = white wine emission factor = 2.5 lb-VOC/1000 gal (District Rule 4694)

2. Potential fermentation emissions from a 100% red wine production scenario are then determined:

Red wine production capacity is determined as the lesser of the production capacities of either the crushing, pressing or tankage.

$W_R$  = Red wine production capacity (gallons per year as measured immediately after pressing) and is the lesser of the following four calculations:

$$W1 = C \times D_r \times M \text{ (limited by crusher capacity)}$$

$$W2 = P \times D_r \times M \text{ (limited by pressing capacity)}$$

$$W3 = (V_{FR} \times F \times D_r) / R_{FR} \text{ (limited by red fermenter volume)}$$

$$W4 = (V_T \times D_r) / R_{TS} \text{ (limited by overall tank processing)}$$

C = grape crushing capacity, tons/day

$D_r$  = days in a red wine crush season = 100 days

F = Fill factor for red wine fermentation = 80%

M = gallons of grape juice produced per ton of grapes = 200 gallons/ton

P = pressing capacity, tons per day

$R_{FR}$  = Red fermentation period = 5 days

$R_{TS}$  = Total winery retention time for red wine,  $40 + 5 = 45$  days

$V_{FR}$  = total volume of red wine fermenters

$V_T$  = Effective Total Winery Cooperage (gal) for red wine – see Appendix A

Potential red wine fermentation emissions are then determined by applying the red fermentation emission factor to the production capacity determined above:

$$PE_{\text{redfermentation}} = E_{fr} \times W_R$$

where,

$E_{fr}$  = red wine emission factor = 6.2 lb-VOC/1000 gal (District Rule 4694)

3. The facility's PE for fermentation operations is then taken to be the greater of either the white or red PE's determined above.

$$PE_{\text{fermentation}} = \text{greater of } PE_{\text{whitefermentation}} \text{ and } PE_{\text{redfermentation}}$$

4. Emissions from storage tank operations are then determined for both the red and white wine production cases by applying the factors described above.

$$PE_{\text{whitestorage}} = E_s \times T \times W_W$$

$$PE_{\text{redstorage}} = E_s \times T \times W_R$$

$E_s$  = wine storage emission factor based on District FYI-114 = 0.230 lb-VOC/1000 gallons of wine transferred

$T$  = Total post fermentation inter-tank transfers per batch of wine = 8

The facility's PE for storage tank operations is taken to be the larger of the PE's for either red or white wine production.

$$PE_{\text{storage}} = \text{greater of } PE_{\text{whitestorage}} \text{ and } PE_{\text{redstorage}}$$

### Example:

The wine production Potentials to Emit for VOCs will be determined for a hypothetical Winery. The hypothetical winery has in-house Permits to Operate for all its wine tanks for operation as both fermenters and storage tanks except for eight (8) 60,000 gallon wine storage-only tanks (480,000 gallons total) which were permitted by an NSR action subsequent to the initial permitting. The eight storage-only tanks are limited by an SLC to a total annual throughput of 2,000,000 gallons per year with a maximum ethanol content of 14%. All fermentation and storage tanks meet Achieved-in-Practice BACT. Crushing and pressing equipment ratings are 150 and 100 tons per hour respectively.

The effective tank capacities and the wine grape processing equipment are summarized as follows:

- Effective Total Tankage Capacity = 14,625,000 and 14,614,000 gallons for white and red wine respectively =  $V_T$  (see Appendix A)
- Red Fermenter Capacity = 2,000,000 gallons =  $V_{FR}$
- White Fermenter Capacity = total cooperage – storage only tanks = 14,520,000 gallons

- All storage tanks are insulated and equipped with PVRV's (storage tank breathing losses may be ignored).
- Crushing Capacity = 3,600 tons per day (150 tons/hour) = C
- Pressing Capacity = 2,400 tons per day (100 tons per hour) = P

1. Scenario 1 (all white):

$$W1 = C \times D_w \times M = 3,600 \times 120 \times 200 = 72.0 \text{ MG/yr (million gallons per year)}$$

$$W2 = P \times D_w \times M = 2,400 \times 120 \times 200 = 48.0 \text{ MG/yr}$$

$$W3 = (V_{FW} \times D_w) / W_{FW} = (14,520,000 \times 120) / 10 = 174 \text{ MG/yr}$$

$$W4 = (V_T \times D_w) / R_{TW} = (14,625,000 \times 120) / 50 = 35.1 \text{ MG/yr}$$

Taking the lesser of the four:

$$W_w = W2 = 35.1 \text{ MG/yr}$$

Then,

$$PE_{\text{whitefermentation}} = E_{fw} \times W / 1,000 = 2.5 \times 35.1 \times 10^6 / 1000 = 87,750 \text{ lb-VOC/year}$$

2. Scenario 2 (all red)

$$- W1 = C \times D_r \times M = 3,600 \times 120 \times 200 = 72.0 \text{ MG/yr}$$

$$- W2 = P \times D_r \times M = 2,400 \times 120 \times 200 = 48.0 \text{ MG/yr}$$

$$- W3 = (V_{FR} \times F \times D_r) / R_{FR} = (2,000,000 \times 80\% \times 120) / 5 = 38.4 \text{ MG/yr}$$

$$- W4 = V_T \times D_r / R_S = 14,614,000 \times 120 / 45 = 39.0 \text{ MG/yr}$$

Taking the lesser of the four:

$$W_r = W2 = 38.4 \text{ MG/yr}$$

Then,

$$PE_{\text{redfermentation}} = E_{fr} \times W / 1,000 = 6.2 \times 38.4 \times 10^6 / 1000 = 238,080 \text{ lb-VOC/year}$$

3. Establish PE for fermentation

$$PE_{\text{fermentation}} = \text{greater of } PE_{\text{whitefermentation}} \text{ and } PE_{\text{redfermentation}}$$

$$PE_{\text{fermentation}} = 238,080 \text{ lb-VOC/year}$$

4. Calculate PE for Storage Operations

Since the calculated wine production rates have already considered the limitation introduced by the NSR limit on the storage-only tanks, no further consideration of throughput capacity is required for calculation the PE for storage operations. However, the storage-only tanks are limited to 14% ethanol for their maximum throughput of 2,000,000 gallons which requires a different emission factor. Per FYI-114, an emission factor of 0.198 lb-VOC/1000 gallons is applicable. Since the potential production of red wine is

greater than that of white as calculated above, storage throughput will be based on this production value (38.4 MG/yr) and a minimum of 8 transfers per gallon of wine:

$$PE_{\text{storage}} = E_s \times T \times W_R = 0.23/1000 \times (8 \times 38.4 - 2.0) \times 10^6 \\ + (0.198/1000) \times 2.0 \times 10^6 = 70,592 \text{ lb-VOC/year}$$

## Appendix A

### **Calculation of Effective Tank Volume**

Most wine tanks in the District have been permitted as in-house PTO's and thus have no NSR limitations on their operation. However, subsequent to the initial permitting action, some wineries may have added storage tanks, permitted under NSR, either as Routine Replacements or as Fully Offset Units. These tanks are subject to throughput limits and thus may have an impact on the overall production capacity of the winery. To evaluate this impact within the calculation model presented in this policy, it is necessary to determine an "effective volume" which represents the total volume of the tankage at the facility and allows the calculation model to account for any limitation on production capacity resulting from the NSR limit on these additional tanks. The correction procedure is based on comparing the maximum number of annual tank turns (throughput expressed as the number of tank volumes per year) allowed for the NSR-limited tanks with the average minimum number of tank turns required to process the facility throughput based on residence time considerations only. Note that when a minimum of eight wine transfers during storage (per the calculation model) are considered for each gallon of wine produced, the minimum average number of tank turns is independent of the total capacity of the tanks and is established from the tank production capacity equation as follows:

White Wine:

$$W4 = (8 \times (V_T \times D_w) / R_{TW}) \div V_T = (8 \times D_w / R_{TW}) = 8 \times 120/50 = 19.2 \text{ turns}$$

Red Wine:

$$W4 = (8 \times (V_T \times D_r) / R_{TR}) \div V_T = (8 \times D_r / R_{TR}) = 8 \times 120/45 = 21.3 \text{ turns}$$

When the maximum number of turns allowed for certain NSR-permitted storage tanks is less than this average, these tanks are assumed to limit production capacity and an effective volume for these tanks, used for purposes of determining production capacity, must be determined. The actual volume of the NSR-limited tanks is adjusted by the ratio of the maximum allowed number of turns to the average minimum number of tank turns. This adjusted volume is used, in turn, to determine the effective volume of all tankage at the facility. The following example illustrates the correction:

#### Volume Correction Example

Using the example PE calculation presented in this policy, total tankage capacity is 15,000,000 gallons which includes 480,000 gallons of storage tanks limited to 2,000,000 gallons per year. The 2,000,000 gallon per year limitation for the NSR-limited tanks limits the number of turns for these tanks to:

$$2,000,000 \text{ gal/yr} \div 480,000 \text{ gal/turn} = 4.2 \text{ turns}$$

The effective capacity for wine production for the NSR-limited tanks is considered to be limited to the extent that the maximum allowable number of turns is less than the minimum average number of turns required for wine production. Therefore, the effective volume for these tanks is considered to be:

$(4.2/19.2) \times 480,000 = 105,000$  gallons for white wine production

$(4.2/21.3) \times 480,000 = 94,600$  gallons for red wine production

Total tank capacity for the facility is then adjusted to an effective value by deducting the storage-only tanks from the total and then adding back the effective volume of the storage-only tanks, or

$V_{\text{effective}} = 15,000,000 - 480,000 + 105,000 = 14,625,000$  gallons for white wine

$V_{\text{effective}} = 15,000,000 - 480,000 + 94,600 = 14,614,000$  gallons for red wine

## **APPENDIX E**

### **Daily PE1 for Fermentation Tank Emissions Unit**

### Daily Pre-Project Potential to Emit for Fermentation Emissions Units

Basis: Daily emission Factor is 3.46 lb-VOC/1000 gal for red wine fermentation and 1.62 lb-VOC/1000 gal for white wine fermentation per FYI-114

Permit Number			Capacity (Gallons)	Emission Factor lb-VOC/1000 gal	Daily Emissions (lb-VOC/day)
N-956-	43	-0	105,000	3.46	363.3
N-956-	44	-0	105,000	3.46	363.3
N-956-	45	-0	105,000	3.46	363.3
N-956-	46	-0	105,000	3.46	363.3
N-956-	47	-0	105,000	3.46	363.3
N-956-	48	-0	105,000	3.46	363.3
N-956-	49	-0	105,000	3.46	363.3
N-956-	50	-0	105,000	3.46	363.3
N-956-	51	-0	105,000	3.46	363.3
N-956-	52	-0	105,000	3.46	363.3
N-956-	53	-0	105,000	3.46	363.3
N-956-	67	-0	103,000	1.62	166.9
N-956-	68	-0	103,000	1.62	166.9
N-956-	69	-0	103,000	1.62	166.9
N-956-	70	-0	103,000	1.62	166.9
N-956-	71	-0	103,000	1.62	166.9
N-956-	83	-0	218,000	3.46	754.3
N-956-	84	-0	218,000	3.46	754.3
N-956-	85	-0	218,000	3.46	754.3
N-956-	86	-0	218,000	3.46	754.3
N-956-	87	-0	218,000	3.46	754.3
N-956-	88	-0	218,000	3.46	754.3
N-956-	95	-0	217,000	3.46	750.8
N-956-	96	-0	217,000	3.46	750.8
N-956-	97	-0	217,000	3.46	750.8
N-956-	98	-0	217,000	3.46	750.8
N-956-	99	-0	217,000	3.46	750.8
N-956-	100	-0	217,000	3.46	750.8
N-956-	105	-0	217,000	1.62	351.5
N-956-	106	-0	217,000	1.62	351.5
N-956-	107	-0	217,000	1.62	351.5
N-956-	108	-0	217,000	1.62	351.5
N-956-	109	-0	217,000	1.62	351.5
N-956-	110	-0	217,000	1.62	351.5
N-956-	111	-0	217,000	1.62	351.5
N-956-	112	-0	217,000	1.62	351.5
N-956-	113	-0	217,000	1.62	351.5
N-956-	114	-0	217,000	1.62	351.5
N-956-	153	-0	350,000	1.62	567
N-956-	154	-0	350,000	1.62	567
N-956-	155	-0	350,000	1.62	567
N-956-	156	-0	350,000	1.62	567
N-956-	157	-0	350,000	1.62	567
N-956-	158	-0	350,000	1.62	567
N-956-	159	-0	350,000	1.62	567
N-956-	160	-0	350,000	1.62	567
N-956-	161	-0	350,000	1.62	567
N-956-	162	-0	350,000	1.62	567
N-956-	163	-0	350,000	1.62	567
N-956-	164	-0	350,000	1.62	567
N-956-	165	-0	350,000	1.62	567
N-956-	166	-0	350,000	1.62	567
N-956-	167	-0	350,000	1.62	567
N-956-	168	-0	350,000	1.62	567

### Daily Pre-Project Potential to Emit for Fermentation Emissions Units

Basis: Daily emission Factor is 3.46 lb-VOC/1000 gal for red wine fermentation and 1.62 lb-VOC/1000 gal for white wine fermentation per FYI-114

Permit Number			Capacity (Gallons)	Emission Factor lb-VOC/1000 gal	Daily Emissions (lb-VOC/day)
N-956-	169	-0	350,000	1.62	567
N-956-	170	-0	350,000	1.62	567
N-956-	171	-0	350,000	1.62	567
N-956-	172	-0	350,000	1.62	567
N-956-	173	-0	350,000	1.62	567
N-956-	174	-0	350,000	1.62	567
N-956-	175	-0	350,000	1.62	567
N-956-	176	-0	350,000	1.62	567
N-956-	177	-0	350,000	1.62	567
N-956-	178	-0	350,000	1.62	567
N-956-	179	-0	350,000	1.62	567
N-956-	180	-0	350,000	1.62	567
N-956-	181	-0	350,000	1.62	567
N-956-	182	-0	350,000	1.62	567
N-956-	183	-0	350,000	1.62	567
N-956-	184	-0	350,000	1.62	567
N-956-	185	-0	350,000	1.62	567
N-956-	186	-0	350,000	1.62	567
N-956-	187	-0	350,000	1.62	567
N-956-	188	-0	350,000	1.62	567
N-956-	189	-0	350,000	1.62	567
N-956-	195	-0	650,000	1.62	1053
N-956-	196	-0	650,000	1.62	1053
N-956-	197	-0	650,000	1.62	1053
N-956-	198	-0	650,000	1.62	1053

## **APPENDIX F**

### **Daily PE1 for Storage Tank Emissions Units**

## Daily Pre-Project Potential to Emit for Storage Emissions Units

**Basis:**

- Daily emission Factor is 0.335 lb-VOC/1000 gal for 16% alcohol wine
- all tanks are insulated - hence all emissions are due to working losses
- Daily throughput is assumed to be the maximum tank capacity for units ≥ 200,000 gallons and twice the maximum tank capacity for units < 200,000 gallons.

Permit Number			Capacity (Gallons)	Throughput (Gallons/day)	Emission Factor lb-VOC/1000 gal	Daily Emissions (lb-VOC/day)
N-956-	11	-0	15,000	30,000	0.335	10.1
N-956-	12	-0	15,000	30,000	0.335	10.1
N-956-	13	-0	10,000	20,000	0.335	6.7
N-956-	14	-0	10,000	20,000	0.335	6.7
N-956-	15	-0	120,000	240,000	0.335	80.4
N-956-	16	-0	120,000	240,000	0.335	80.4
N-956-	17	-0	120,000	240,000	0.335	80.4
N-956-	18	-0	120,000	240,000	0.335	80.4
N-956-	19	-0	120,000	240,000	0.335	80.4
N-956-	20	-0	120,000	240,000	0.335	80.4
N-956-	21	-0	120,000	240,000	0.335	80.4
N-956-	22	-0	30,000	60,000	0.335	20.1
N-956-	23	-0	30,000	60,000	0.335	20.1
N-956-	24	-0	30,000	60,000	0.335	20.1
N-956-	25	-0	30,000	60,000	0.335	20.1
N-956-	26	-0	20,000	40,000	0.335	13.4
N-956-	27	-0	60,000	120,000	0.335	40.2
N-956-	28	-0	60,000	120,000	0.335	40.2
N-956-	29	-0	60,000	120,000	0.335	40.2
N-956-	30	-0	60,000	120,000	0.335	40.2
N-956-	31	-0	60,000	120,000	0.335	40.2
N-956-	32	-0	12,000	24,000	0.335	8.0
N-956-	33	-0	120,000	240,000	0.335	80.4
N-956-	34	-0	120,000	240,000	0.335	80.4
N-956-	35	-0	120,000	240,000	0.335	80.4
N-956-	36	-0	15,000	30,000	0.335	10.1
N-956-	37	-0	15,000	30,000	0.335	10.1
N-956-	38	-0	30,000	60,000	0.335	20.1
N-956-	39	-0	30,000	60,000	0.335	20.1
N-956-	40	-0	30,000	60,000	0.335	20.1
N-956-	41	-0	30,000	60,000	0.335	20.1
N-956-	42	-0	5,000	10,000	0.335	3.4
N-956-	54	-0	106,000	212,000	0.335	71.0
N-956-	55	-0	106,000	212,000	0.335	71.0
N-956-	56	-0	106,000	212,000	0.335	71.0
N-956-	57	-0	106,000	212,000	0.335	71.0
N-956-	58	-0	106,000	212,000	0.335	71.0
N-956-	59	-0	106,000	212,000	0.335	71.0
N-956-	60	-0	106,000	212,000	0.335	71.0
N-956-	61	-0	106,000	212,000	0.335	71.0
N-956-	62	-0	106,000	212,000	0.335	71.0
N-956-	63	-0	106,000	212,000	0.335	71.0
N-956-	64	-0	106,000	212,000	0.335	71.0
N-956-	65	-0	106,000	212,000	0.335	71.0
N-956-	66	-0	106,000	212,000	0.335	71.0
N-956-	72	-0	217,000	217,000	0.335	72.7
N-956-	73	-0	217,000	217,000	0.335	72.7
N-956-	74	-0	217,000	217,000	0.335	72.7

Permit Number			Capacity (Gallons)	Throughput (Gallons/day)	Emission Factor lb-VOC/1000 gal	Daily Emissions (lb-VOC/day)
N-956-	75	-0	217,000	217,000	0.335	72.7
N-956-	76	-0	217,000	217,000	0.335	72.7
N-956-	77	-0	217,000	217,000	0.335	72.7
N-956-	78	-0	217,000	217,000	0.335	72.7
N-956-	79	-0	217,000	217,000	0.335	72.7
N-956-	80	-0	217,000	217,000	0.335	72.7
N-956-	81	-0	217,000	217,000	0.335	72.7
N-956-	82	-0	217,000	217,000	0.335	72.7
N-956-	89	-0	217,000	217,000	0.335	72.7
N-956-	90	-0	217,000	217,000	0.335	72.7
N-956-	91	-0	217,000	217,000	0.335	72.7
N-956-	92	-0	217,000	217,000	0.335	72.7
N-956-	93	-0	217,000	217,000	0.335	72.7
N-956-	94	-0	217,000	217,000	0.335	72.7
N-956-	101	-0	217,000	217,000	0.335	72.7
N-956-	102	-0	217,000	217,000	0.335	72.7
N-956-	103	-0	217,000	217,000	0.335	72.7
N-956-	104	-0	217,000	217,000	0.335	72.7
N-956-	115	-0	350,000	350,000	0.335	117.3
N-956-	116	-0	350,000	350,000	0.335	117.3
N-956-	117	-0	350,000	350,000	0.335	117.3
N-956-	118	-0	323,000	323,000	0.335	108.2
N-956-	119	-0	323,000	323,000	0.335	108.2
N-956-	120	-0	323,000	323,000	0.335	108.2
N-956-	121	-0	323,000	323,000	0.335	108.2
N-956-	122	-0	323,000	323,000	0.335	108.2
N-956-	123	-0	323,000	323,000	0.335	108.2
N-956-	124	-0	323,000	323,000	0.335	108.2
N-956-	125	-0	323,000	323,000	0.335	108.2
N-956-	126	-0	324,000	324,000	0.335	108.5
N-956-	127	-0	350,000	350,000	0.335	117.3
N-956-	128	-0	350,000	350,000	0.335	117.3
N-956-	129	-0	350,000	350,000	0.335	117.3
N-956-	130	-0	350,000	350,000	0.335	117.3
N-956-	131	-0	350,000	350,000	0.335	117.3
N-956-	132	-0	350,000	350,000	0.335	117.3
N-956-	133	-0	350,000	350,000	0.335	117.3
N-956-	134	-0	350,000	350,000	0.335	117.3
N-956-	135	-0	350,000	350,000	0.335	117.3
N-956-	136	-0	350,000	350,000	0.335	117.3
N-956-	137	-0	350,000	350,000	0.335	117.3
N-956-	138	-0	350,000	350,000	0.335	117.3
N-956-	139	-0	350,000	350,000	0.335	117.3
N-956-	140	-0	350,000	350,000	0.335	117.3
N-956-	141	-0	350,000	350,000	0.335	117.3
N-956-	142	-0	350,000	350,000	0.335	117.3
N-956-	143	-0	350,000	350,000	0.335	117.3
N-956-	144	-0	350,000	350,000	0.335	117.3
N-956-	145	-0	350,000	350,000	0.335	117.3
N-956-	146	-0	350,000	350,000	0.335	117.3
N-956-	147	-0	350,000	350,000	0.335	117.3
N-956-	148	-0	350,000	350,000	0.335	117.3
N-956-	149	-0	350,000	350,000	0.335	117.3
N-956-	150	-0	350,000	350,000	0.335	117.3
N-956-	151	-0	350,000	350,000	0.335	117.3
N-956-	152	-0	350,000	350,000	0.335	117.3
N-956-	190	-0	650,000	650,000	0.335	217.8

Permit Number			Capacity (Gallons)	Throughput (Gallons/day)	Emission Factor lb-VOC/1000 gal	Daily Emissions (lb-VOC/day)
N-956-	191	-0	650,000	650,000	0.335	217.8
N-956-	192	-0	650,000	650,000	0.335	217.8
N-956-	193	-0	650,000	650,000	0.335	217.8
N-956-	194	-0	650,000	650,000	0.335	217.8
N-956-	199	-0	705,000	705,000	0.335	236.2
N-956-	200	-0	705,000	705,000	0.335	236.2
N-956-	201	-0	705,000	705,000	0.335	236.2
N-956-	202	-0	705,000	705,000	0.335	236.2
N-956-	203	-0	19,500	39,000	0.335	13.1
N-956-	204	-0	19,500	39,000	0.335	13.1
N-956-	205	-0	19,500	39,000	0.335	13.1
N-956-	206	-0	19,500	39,000	0.335	13.1
N-956-	207	-0	19,500	39,000	0.335	13.1
N-956-	208	-0	19,500	39,000	0.335	13.1
N-956-	209	-0	19,500	39,000	0.335	13.1
N-956-	210	-0	19,500	39,000	0.335	13.1
N-956-	211	-0	19,500	39,000	0.335	13.1
N-956-	212	-0	19,500	39,000	0.335	13.1
N-956-	213	-0	19,500	39,000	0.335	13.1
N-956-	214	-0	19,500	39,000	0.335	13.1
N-956-	215	-0	19,500	39,000	0.335	13.1
N-956-	216	-0	19,500	39,000	0.335	13.1
N-956-	217	-0	19,500	39,000	0.335	13.1
N-956-	218	-0	19,500	39,000	0.335	13.1

## **APPENDIX G**

### **Daily PE2 for New and Modified Emission Units**

**Daily Post-Project Potential to Emit for New and Modified Emissions Units**

Basis:

-Daily emission Factor is 3.46 lb-VOC/1000 gal for red wine fermentation.

Permit Number			Capacity (Gallons)	Emission Factor lb-VOC/1000 gal	Daily Emissions (lb-VOC/day)
N-956-	11	2	15,000	3.46	51.9
N-956-	12	2	15,000	3.46	51.9
N-956-	13	2	10,000	3.46	34.6
N-956-	14	2	10,000	3.46	34.6
N-956-	15	2	120,000	3.46	415.2
N-956-	16	2	120,000	3.46	415.2
N-956-	17	2	120,000	3.46	415.2
N-956-	18	2	120,000	3.46	415.2
N-956-	19	2	120,000	3.46	415.2
N-956-	20	2	120,000	3.46	415.2
N-956-	21	2	120,000	3.46	415.2
N-956-	22	2	30,000	3.46	103.8
N-956-	23	2	30,000	3.46	103.8
N-956-	24	2	30,000	3.46	103.8
N-956-	25	2	30,000	3.46	103.8
N-956-	26	2	20,000	3.46	69.2
N-956-	27	2	60,000	3.46	207.6
N-956-	28	2	60,000	3.46	207.6
N-956-	29	2	60,000	3.46	207.6
N-956-	30	2	60,000	3.46	207.6
N-956-	31	2	60,000	3.46	207.6
N-956-	32	2	12,000	3.46	41.5
N-956-	33	2	120,000	3.46	415.2
N-956-	34	2	120,000	3.46	415.2
N-956-	35	2	120,000	3.46	415.2
N-956-	36	2	15,000	3.46	51.9
N-956-	37	2	15,000	3.46	51.9
N-956-	38	2	30,000	3.46	103.8
N-956-	39	2	30,000	3.46	103.8
N-956-	40	2	30,000	3.46	103.8
N-956-	41	2	30,000	3.46	103.8
N-956-	42	2	5,000	3.46	17.3
N-956-	43	2	105,000	3.46	363.3
N-956-	44	2	105,000	3.46	363.3
N-956-	45	2	105,000	3.46	363.3
N-956-	46	2	105,000	3.46	363.3
N-956-	47	2	105,000	3.46	363.3
N-956-	48	2	105,000	3.46	363.3
N-956-	49	2	105,000	3.46	363.3
N-956-	50	2	105,000	3.46	363.3
N-956-	51	2	105,000	3.46	363.3

Permit Number			Capacity (Gallons)	Emission Factor lb-VOC/1000 gal	Daily Emissions (lb-VOC/day)
N-956-	52	2	105,000	3.46	363.3
N-956-	53	2	105,000	3.46	363.3
N-956-	54	2	106,000	3.46	366.8
N-956-	55	2	106,000	3.46	366.8
N-956-	56	2	106,000	3.46	366.8
N-956-	57	2	106,000	3.46	366.8
N-956-	58	2	106,000	3.46	366.8
N-956-	59	2	106,000	3.46	366.8
N-956-	60	2	106,000	3.46	366.8
N-956-	61	2	106,000	3.46	366.8
N-956-	62	2	106,000	3.46	366.8
N-956-	63	2	106,000	3.46	366.8
N-956-	64	2	106,000	3.46	366.8
N-956-	65	2	106,000	3.46	366.8
N-956-	66	2	106,000	3.46	366.8
N-956-	67	2	103,000	3.46	356.4
N-956-	68	2	103,000	3.46	356.4
N-956-	69	2	103,000	3.46	356.4
N-956-	70	2	103,000	3.46	356.4
N-956-	71	2	103,000	3.46	356.4
N-956-	72	2	217,000	3.46	750.8
N-956-	73	2	217,000	3.46	750.8
N-956-	74	2	217,000	3.46	750.8
N-956-	75	2	217,000	3.46	750.8
N-956-	76	2	217,000	3.46	750.8
N-956-	77	2	217,000	3.46	750.8
N-956-	78	2	217,000	3.46	750.8
N-956-	79	2	217,000	3.46	750.8
N-956-	80	2	217,000	3.46	750.8
N-956-	81	2	217,000	3.46	750.8
N-956-	82	2	217,000	3.46	750.8
N-956-	83	2	218,000	3.46	754.3
N-956-	84	2	218,000	3.46	754.3
N-956-	85	2	218,000	3.46	754.3
N-956-	86	2	218,000	3.46	754.3
N-956-	87	2	218,000	3.46	754.3
N-956-	88	2	218,000	3.46	754.3
N-956-	89	2	217,000	3.46	750.8
N-956-	90	2	217,000	3.46	750.8
N-956-	91	2	217,000	3.46	750.8
N-956-	92	2	217,000	3.46	750.8
N-956-	93	2	217,000	3.46	750.8
N-956-	94	2	217,000	3.46	750.8
N-956-	95	2	217,000	3.46	750.8
N-956-	96	2	217,000	3.46	750.8
N-956-	97	2	217,000	3.46	750.8
N-956-	98	2	217,000	3.46	750.8

Permit Number			Capacity (Gallons)	Emission Factor lb-VOC/1000 gal	Daily Emissions (lb-VOC/day)
N-956-	99	2	217,000	3.46	750.8
N-956-	100	2	217,000	3.46	750.8
N-956-	101	2	217,000	3.46	750.8
N-956-	102	2	217,000	3.46	750.8
N-956-	103	2	217,000	3.46	750.8
N-956-	104	2	217,000	3.46	750.8
N-956-	105	2	217,000	3.46	750.8
N-956-	106	2	217,000	3.46	750.8
N-956-	107	2	217,000	3.46	750.8
N-956-	108	2	217,000	3.46	750.8
N-956-	109	2	217,000	3.46	750.8
N-956-	110	2	217,000	3.46	750.8
N-956-	111	2	217,000	3.46	750.8
N-956-	112	2	217,000	3.46	750.8
N-956-	113	2	217,000	3.46	750.8
N-956-	114	2	217,000	3.46	750.8
N-956-	115	2	350,000	3.46	1211.0
N-956-	116	2	350,000	3.46	1211.0
N-956-	117	2	350,000	3.46	1211.0
N-956-	118	2	323,000	3.46	1117.6
N-956-	119	2	323,000	3.46	1117.6
N-956-	120	2	323,000	3.46	1117.6
N-956-	121	2	323,000	3.46	1117.6
N-956-	122	2	323,000	3.46	1117.6
N-956-	123	2	323,000	3.46	1117.6
N-956-	124	2	323,000	3.46	1117.6
N-956-	125	2	323,000	3.46	1117.6
N-956-	126	2	324,000	3.46	1121.0
N-956-	127	2	350,000	3.46	1211.0
N-956-	128	2	350,000	3.46	1211.0
N-956-	129	2	350,000	3.46	1211.0
N-956-	130	2	350,000	3.46	1211.0
N-956-	131	2	350,000	3.46	1211.0
N-956-	132	2	350,000	3.46	1211.0
N-956-	133	2	350,000	3.46	1211.0
N-956-	134	2	350,000	3.46	1211.0
N-956-	135	2	350,000	3.46	1211.0
N-956-	136	2	350,000	3.46	1211.0
N-956-	137	2	350,000	3.46	1211.0
N-956-	138	2	350,000	3.46	1211.0
N-956-	139	2	350,000	3.46	1211.0
N-956-	140	2	350,000	3.46	1211.0
N-956-	141	2	350,000	3.46	1211.0
N-956-	142	2	350,000	3.46	1211.0
N-956-	143	2	350,000	3.46	1211.0
N-956-	144	2	350,000	3.46	1211.0
N-956-	145	2	350,000	3.46	1211.0

Permit Number			Capacity (Gallons)	Emission Factor lb-VOC/1000 gal	Daily Emissions (lb-VOC/day)
N-956-	146	2	350,000	3.46	1211.0
N-956-	147	2	350,000	3.46	1211.0
N-956-	148	2	350,000	3.46	1211.0
N-956-	149	2	350,000	3.46	1211.0
N-956-	150	2	350,000	3.46	1211.0
N-956-	151	2	350,000	3.46	1211.0
N-956-	152	2	350,000	3.46	1211.0
N-956-	153	2	350,000	3.46	1211.0
N-956-	154	2	350,000	3.46	1211.0
N-956-	155	2	350,000	3.46	1211.0
N-956-	156	2	350,000	3.46	1211.0
N-956-	157	2	350,000	3.46	1211.0
N-956-	158	2	350,000	3.46	1211.0
N-956-	159	2	350,000	3.46	1211.0
N-956-	160	2	350,000	3.46	1211.0
N-956-	161	2	350,000	3.46	1211.0
N-956-	162	2	350,000	3.46	1211.0
N-956-	163	2	350,000	3.46	1211.0
N-956-	164	2	350,000	3.46	1211.0
N-956-	165	2	350,000	3.46	1211.0
N-956-	166	2	350,000	3.46	1211.0
N-956-	167	2	350,000	3.46	1211.0
N-956-	168	2	350,000	3.46	1211.0
N-956-	169	2	350,000	3.46	1211.0
N-956-	170	2	350,000	3.46	1211.0
N-956-	171	2	350,000	3.46	1211.0
N-956-	172	2	350,000	3.46	1211.0
N-956-	173	2	350,000	3.46	1211.0
N-956-	174	2	350,000	3.46	1211.0
N-956-	175	2	350,000	3.46	1211.0
N-956-	176	2	350,000	3.46	1211.0
N-956-	177	2	350,000	3.46	1211.0
N-956-	178	2	350,000	3.46	1211.0
N-956-	179	2	350,000	3.46	1211.0
N-956-	180	2	350,000	3.46	1211.0
N-956-	181	2	350,000	3.46	1211.0
N-956-	182	2	350,000	3.46	1211.0
N-956-	183	2	350,000	3.46	1211.0
N-956-	184	2	350,000	3.46	1211.0
N-956-	185	2	350,000	3.46	1211.0
N-956-	186	2	350,000	3.46	1211.0
N-956-	187	2	350,000	3.46	1211.0
N-956-	188	2	350,000	3.46	1211.0
N-956-	189	2	350,000	3.46	1211.0
N-956-	190	2	650,000	3.46	2249.0
N-956-	191	2	650,000	3.46	2249.0
N-956-	192	2	650,000	3.46	2249.0

Permit Number			Capacity (Gallons)	Emission Factor lb-VOC/1000 gal	Daily Emissions (lb-VOC/day)
N-956-	193	2	650,000	3.46	2249.0
N-956-	194	2	650,000	3.46	2249.0
N-956-	195	2	650,000	3.46	2249.0
N-956-	196	2	650,000	3.46	2249.0
N-956-	197	2	650,000	3.46	2249.0
N-956-	198	2	650,000	3.46	2249.0
N-956-	199	2	705,000	3.46	2439.3
N-956-	200	2	705,000	3.46	2439.3
N-956-	201	2	705,000	3.46	2439.3
N-956-	202	2	705,000	3.46	2439.3
N-956-	203	1	19,500	3.46	67.5
N-956-	204	1	19,500	3.46	67.5
N-956-	205	1	19,500	3.46	67.5
N-956-	206	1	19,500	3.46	67.5
N-956-	207	1	19,500	3.46	67.5
N-956-	208	1	19,500	3.46	67.5
N-956-	209	1	19,500	3.46	67.5
N-956-	210	1	19,500	3.46	67.5
N-956-	211	1	19,500	3.46	67.5
N-956-	212	1	19,500	3.46	67.5
N-956-	213	1	19,500	3.46	67.5
N-956-	214	1	19,500	3.46	67.5
N-956-	215	1	19,500	3.46	67.5
N-956-	216	1	19,500	3.46	67.5
N-956-	217	1	19,500	3.46	67.5
N-956-	218	1	19,500	3.46	67.5
N-956-	236	0	20,000	3.46	69.2
N-956-	237	0	20,000	3.46	69.2
N-956-	238	0	14,000	3.46	48.4
N-956-	239	0	14,000	3.46	48.4
N-956-	240	0	14,000	3.46	48.4
N-956-	241	0	14,000	3.46	48.4
N-956-	242	0	14,000	3.46	48.4
N-956-	243	0	14,000	3.46	48.4
N-956-	244	0	14,000	3.46	48.4
N-956-	245	0	14,000	3.46	48.4
N-956-	246	0	14,000	3.46	48.4
N-956-	247	0	14,000	3.46	48.4
N-956-	248	0	14,000	3.46	48.4
N-956-	249	0	14,000	3.46	48.4

Permit Number	Capacity (Gallons)	Emission Factor lb-VOC/1000 gal	Daily Emissions (lb-VOC/day)
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## **APPENDIX H**

### **Fermentation Emissions AIPE**

### Fermentation AIPE

**Basis:**

-Daily emission Factor is 3.46 lb-VOC/1000 gal for red wine fermentation

Permit Number			Capacity (Gallons)	PE2	EF2	PE1	EF1	AIPE
N-956-	11	-2	15,000	52	3.46	0.0	3.46	52
N-956-	12	-2	15,000	52	3.46	0.0	3.46	52
N-956-	13	-2	10,000	35	3.46	0.0	3.46	35
N-956-	14	-2	10,000	35	3.46	0.0	3.46	35
N-956-	15	-2	120,000	415	3.46	0.0	3.46	415
N-956-	16	-2	120,000	415	3.46	0.0	3.46	415
N-956-	17	-2	120,000	415	3.46	0.0	3.46	415
N-956-	18	-2	120,000	415	3.46	0.0	3.46	415
N-956-	19	-2	120,000	415	3.46	0.0	3.46	415
N-956-	20	-2	120,000	415	3.46	0.0	3.46	415
N-956-	21	-2	120,000	415	3.46	0.0	3.46	415
N-956-	22	-2	30,000	104	3.46	0.0	3.46	104
N-956-	23	-2	30,000	104	3.46	0.0	3.46	104
N-956-	24	-2	30,000	104	3.46	0.0	3.46	104
N-956-	25	-2	30,000	104	3.46	0.0	3.46	104
N-956-	26	-2	20,000	69	3.46	0.0	3.46	69
N-956-	27	-2	60,000	208	3.46	0.0	3.46	208
N-956-	28	-2	60,000	208	3.46	0.0	3.46	208
N-956-	29	-2	60,000	208	3.46	0.0	3.46	208
N-956-	30	-2	60,000	208	3.46	0.0	3.46	208
N-956-	31	-2	60,000	208	3.46	0.0	3.46	208
N-956-	32	-2	12,000	42	3.46	0.0	3.46	42
N-956-	33	-2	120,000	415	3.46	0.0	3.46	415
N-956-	34	-2	120,000	415	3.46	0.0	3.46	415
N-956-	35	-2	120,000	415	3.46	0.0	3.46	415
N-956-	36	-2	15,000	52	3.46	0.0	3.46	52
N-956-	37	-2	15,000	52	3.46	0.0	3.46	52
N-956-	38	-2	30,000	104	3.46	0.0	3.46	104
N-956-	39	-2	30,000	104	3.46	0.0	3.46	104
N-956-	40	-2	30,000	104	3.46	0.0	3.46	104
N-956-	41	-2	30,000	104	3.46	0.0	3.46	104
N-956-	42	-2	5,000	17	3.46	0.0	3.46	17
N-956-	54	-2	106,000	367	3.46	0.0	3.46	367
N-956-	55	-2	106,000	367	3.46	0.0	3.46	367
N-956-	56	-2	106,000	367	3.46	0.0	3.46	367
N-956-	57	-2	106,000	367	3.46	0.0	3.46	367
N-956-	58	-2	106,000	367	3.46	0.0	3.46	367
N-956-	59	-2	106,000	367	3.46	0.0	3.46	367
N-956-	60	-2	106,000	367	3.46	0.0	3.46	367
N-956-	61	-2	106,000	367	3.46	0.0	3.46	367
N-956-	62	-2	106,000	367	3.46	0.0	3.46	367
N-956-	63	-2	106,000	367	3.46	0.0	3.46	367
N-956-	64	-2	106,000	367	3.46	0.0	3.46	367
N-956-	65	-2	106,000	367	3.46	0.0	3.46	367
N-956-	66	-2	106,000	367	3.46	0.0	3.46	367
N-956-	72	-2	217,000	751	3.46	0.0	3.46	751
N-956-	73	-2	217,000	751	3.46	0.0	3.46	751
N-956-	74	-2	217,000	751	3.46	0.0	3.46	751
N-956-	75	-2	217,000	751	3.46	0.0	3.46	751
N-956-	76	-2	217,000	751	3.46	0.0	3.46	751
N-956-	77	-2	217,000	751	3.46	0.0	3.46	751
N-956-	78	-2	217,000	751	3.46	0.0	3.46	751

Permit Number			Capacity (Gallons)	PE2	EF2	PE1	EF1	AIPE
N-956-	79	-2	217,000	751	3.46	0.0	3.46	751
N-956-	80	-2	217,000	751	3.46	0.0	3.46	751
N-956-	81	-2	217,000	751	3.46	0.0	3.46	751
N-956-	82	-2	217,000	751	3.46	0.0	3.46	751
N-956-	89	-2	217,000	751	3.46	0.0	3.46	751
N-956-	90	-2	217,000	751	3.46	0.0	3.46	751
N-956-	91	-2	217,000	751	3.46	0.0	3.46	751
N-956-	92	-2	217,000	751	3.46	0.0	3.46	751
N-956-	93	-2	217,000	751	3.46	0.0	3.46	751
N-956-	94	-2	217,000	751	3.46	0.0	3.46	751
N-956-	101	-2	217,000	751	3.46	0.0	3.46	751
N-956-	102	-2	217,000	751	3.46	0.0	3.46	751
N-956-	103	-2	217,000	751	3.46	0.0	3.46	751
N-956-	104	-2	217,000	751	3.46	0.0	3.46	751
N-956-	115	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	116	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	117	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	118	-2	323,000	1,118	3.46	0.0	3.46	1,118
N-956-	119	-2	323,000	1,118	3.46	0.0	3.46	1,118
N-956-	120	-2	323,000	1,118	3.46	0.0	3.46	1,118
N-956-	121	-2	323,000	1,118	3.46	0.0	3.46	1,118
N-956-	122	-2	323,000	1,118	3.46	0.0	3.46	1,118
N-956-	123	-2	323,000	1,118	3.46	0.0	3.46	1,118
N-956-	124	-2	323,000	1,118	3.46	0.0	3.46	1,118
N-956-	125	-2	323,000	1,118	3.46	0.0	3.46	1,118
N-956-	126	-2	324,000	1,121	3.46	0.0	3.46	1,121
N-956-	127	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	128	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	129	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	130	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	131	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	132	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	133	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	134	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	135	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	136	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	137	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	138	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	139	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	140	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	141	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	142	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	143	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	144	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	145	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	146	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	147	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	148	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	149	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	150	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	151	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	152	-2	350,000	1,211	3.46	0.0	3.46	1,211
N-956-	190	-2	650,000	2,249	3.46	0.0	3.46	2,249
N-956-	191	-2	650,000	2,249	3.46	0.0	3.46	2,249
N-956-	192	-2	650,000	2,249	3.46	0.0	3.46	2,249
N-956-	193	-2	650,000	2,249	3.46	0.0	3.46	2,249
N-956-	194	-2	650,000	2,249	3.46	0.0	3.46	2,249

Permit Number			Capacity (Gallons)	PE2	EF2	PE1	EF1	AIPE
N-956-	199	-2	705,000	2,439	3.46	0.0	3.46	2,439
N-956-	200	-2	705,000	2,439	3.46	0.0	3.46	2,439
N-956-	201	-2	705,000	2,439	3.46	0.0	3.46	2,439
N-956-	202	-2	705,000	2,439	3.46	0.0	3.46	2,439
N-956-	203	-1	19,500	67	3.46	0.0	3.46	67
N-956-	204	-1	19,500	67	3.46	0.0	3.46	67
N-956-	205	-1	19,500	67	3.46	0.0	3.46	67
N-956-	206	-1	19,500	67	3.46	0.0	3.46	67
N-956-	207	-1	19,500	67	3.46	0.0	3.46	67
N-956-	208	-1	19,500	67	3.46	0.0	3.46	67
N-956-	209	-1	19,500	67	3.46	0.0	3.46	67
N-956-	210	-1	19,500	67	3.46	0.0	3.46	67
N-956-	211	-1	19,500	67	3.46	0.0	3.46	67
N-956-	212	-1	19,500	67	3.46	0.0	3.46	67
N-956-	213	-1	19,500	67	3.46	0.0	3.46	67
N-956-	214	-1	19,500	67	3.46	0.0	3.46	67
N-956-	215	-1	19,500	67	3.46	0.0	3.46	67
N-956-	216	-1	19,500	67	3.46	0.0	3.46	67
N-956-	217	-1	19,500	67	3.46	0.0	3.46	67
N-956-	218	-1	19,500	67	3.46	0.0	3.46	67

## **APPENDIX I**

### **BACT Guideline 5.4.13 and Top-Down Analysis for Wine Storage Tanks**

**San Joaquin Valley  
Unified Air Pollution Control District**

**Best Available Control Technology (BACT) Guideline 5.4.13\***

Last Update: 10/6/2009

**Wine Storage Tank**

<b>Pollutant</b>	<b>Achieved in Practice or contained in the SIP</b>	<b>Technologically Feasible</b>	<b>Alternate Basic Equipment</b>
VOC	1. Insulation or Equivalent**, Pressure Vacuum Relief Valve (PVRV) set within 10% of the maximum allowable working pressure of the tank; "gas-tight" tank operation; and continuous storage temperature not exceeding 75 degrees F, achieved within 60 days of completion of fermentation.	1. Capture of VOCs and thermal or catalytic oxidation or equivalent (98% control)  2. Capture of VOCs and carbon adsorption or equivalent (95% control)  3. Capture of VOCs and absorption or equivalent (90% control)  4. Capture of VOCs and condensation or equivalent (70% control)	

\*\*Tanks made of heat-conducting materials such as stainless steel may be insulated or stored indoors (in a completely enclosed building, except for vents, doors and other essential openings) to limit exposure to diurnal temperature variations. Tanks made entirely of non-conducting materials such as concrete and wood (except for fittings) are considered self-insulating.

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

**\*This is a Summary Page for this Class of Source - Permit Specific BACT Determinations on Next Page(s)**

## Top-Down BACT Analysis for VOC Emissions from Wine Storage Tanks

### Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse Guideline 5.4.13 identifies achieved-in-practice BACT for wine fermentation as 'Insulation or Equivalent, Pressure Vacuum Relief Valve (PVRV) set within 10% of the maximum working pressure of the tank; "gas-tight" tank operation; and continuous storage temperature not exceeding 75 degrees F, achieved within 60 days of completion of fermentation'.

The following technologically feasible controls are identified in the BACT Guideline:

1. Capture of VOCs and thermal or catalytic oxidation
2. Capture of VOCs and carbon adsorption or equivalent
3. Capture of VOCs and absorption or equivalent
4. Capture of VOCs and condensation or equivalent

There are no controls identified under the Alternate Basic Equipment category.

### Step 2 - Eliminate Technologically Infeasible Options

All of the options listed above are considered to be technologically feasible.

### Step 3 - Rank Remaining Control Technologies by Control Effectiveness

The options enumerated above can be ranked as follows:

Rank by Control Effectiveness			
Rank	Option	Control	Overall Capture & Control Efficiency <sup>(*)</sup>
1	1	Capture of VOCs and thermal or catalytic oxidation	98 % <sup>(**)</sup>
2	2	Capture of VOCs and carbon adsorption	95 %
3	3	Capture of VOCs and absorption.	90 %
4	4	Capture of VOCs and condensation	70 %
5	Achieved in practice BACT		-

(\*) Capture efficiency (90%) x removal efficiency for control device

(\*\*) Following recent District practice, thermal and catalytic oxidation will be ranked together.

#### Step 4 - Cost Effectiveness Analysis

A cost effectiveness analysis is performed for each control technology which is more effective than achieved-in-practice BACT. The cost-effectiveness analysis will be performed based on the following:

- Since the most cost effective approach will be achieved by installing a common control device for multiple tanks, the analysis will be based on this approach.
- To expand the scope and generality of this BACT, the cost-effectiveness analysis will be based on a hypothetical "industry-typical" storage tank operation consisting of a battery of twelve (12) storage tanks each with a capacity of 200,000 gallons. Total annual throughput for the hypothetical tank battery is 39.6 million gallons per year based on an individual annual throughput of 3,300,000 gallons per year each (equivalent to almost 17 turns per year of each storage tank versus an estimated industry average of 6 turns per tank<sup>1</sup>). Total throughput subject to VOC control by a common VOC control device is thus 39.6 MMgal/year. Based on economies of scale, it is obvious that any control found not to be cost-effective at this level of throughput would be even less cost-effective at lower capacities.

#### Industry Standard

During the development of District Rule 4694, it was determined that use of pressure/vacuum valves and some level of refrigeration on wine storage tanks is a standard operation for large wineries in the San Joaquin Valley. Additionally, essentially all storage tanks are insulated. This was directly confirmed with four large wineries: Mission Bell (Madera), Gallo-Livingston, Bronco, and Robert Mondavi. Based on this, the wine storage tank VOC control requirements of District Rule 4694 and tank insulation are also determined to be "industry standard".

Although exempt from the rule requirements, concrete and wood tanks also conform to these industry standards. Since concrete and wood are materials of poor heat conductivity, they are considered self-insulating and therefore usually do not need added insulation as is the case with steel tanks.

The emission factor for "industry standard" operation is determined based on Table 1 of the District's FYI-114, Estimating Emissions from Wine Storage Tanks (BACT Attachment A), for an insulated storage tank with up to 20% ethanol content in the wine being stored:

$E_f$  (industry standard) = 0.297 lb-VOC/1000 gal of wine throughput

#### Uncontrolled emissions for Twelve-Tank Battery

Uncontrolled Emissions = Gallons Throughput/year x 0.297 lb-VOC/1000 gallons  
= (39.6 x 10<sup>6</sup> gal/year) x (0.297 lb-VOC/1000 gal)

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<sup>1</sup> Per discussions with the Wine Institute (Bob Calvin of Constellation Wines) during Rule 4694 development (8/16/05)

Uncontrolled Emissions = 11,761 lb/year

**Capture of VOCs with Thermal or Catalytic Oxidation/ Carbon Adsorption/Absorption or Condensation (Options 3, 4, 5 and 6)**

A common feature of all of these options is that they require installation of a collection system for delivering the VOCs from the tanks to the common control device. The analysis below indicates that these options are not cost effective by showing that just the annualized direct cost for the ductwork of the collection system and supporting structural steel and foundations alone is too large, when considered at the District's cost effectiveness threshold for VOC BACT, to justify the capital investment required by these options. This approach ignores additional major costs for the actual control device and its installation and for equipment sterilization systems for ductwork and control device, instrumentation and control systems for isolation of individual tanks in the battery, site specific factors due to limited plot space (known to be a significant factor at all wineries), and operating and maintenance costs for each system. Should all these additional cost factors be included, the calculated cost effectiveness would be substantially higher than indicated below.

**a. Control Efficiency**

Option 4 is capable of a 98% reduction in VOC emissions while the remaining options under consideration have lesser control efficiencies. Showing that all of the options under consideration are not cost effective at a 98% reduction level based on capital investment requirements of ductwork and steel alone is adequate since options other than thermal/catalytic oxidation would be even less cost effective at their actual (lower) reduction levels.

Annual Emission Reduction = Uncontrolled Emissions x 0.98  
= 11,761 lb-VOC/year x 0.98  
= 11,526 lb-VOC/year  
= 5.76 tons-VOC/year

**b. Capital Investment For Installation of a VOC Collection System**

**Design and Estimate Basis:**

- The collection system consists of stainless steel plate ductwork (stainless steel is required due to food grade product status) with isolation valving, connecting twelve 200,000 gallon tanks to a common manifold system which ducts the combined vent to the common control device. The cost of dampers and isolation valving, installed in the ductwork, will not be included in the cost estimate.
- A minimum duct size is established at 6 inches diameter at each tank to ensure minimal backpressure of the tank during filling operations and to provide adequate strength for spanning between supports. The main header is 12" diameter to handle the potential for simultaneously venting all tanks based on a potential fill rate of 1,000 gpm for each tank (per industry) and a duct velocity of 2,000 feet per minute.

- The ductwork is designed with features to facilitate clean-in-place (CIP) operation to allow for periodic sterilization procedures as required for food grade products. The CIP system includes strategically placed spray nozzles on the ductwork for injecting sterilizing solutions into the system. Cost impacts to install CIP systems to clean the ducting are not included in the cost estimate.
- The ductwork is supported on a structural steel piperack mounted on drilled concrete piers, running through the tank battery. Ducting elevations are established to allow continuous free draining to the separator located at the control device.
- Unit Installed Costs for Ductwork: A direct cost estimate for 12" diameter stainless steel ductwork, installed in a San Joaquin Valley winery, was taken from a study prepared by Eichleay Engineering for the Wine Institute in conjunction with development of District Rule 4694<sup>2</sup>. The estimate is based on 2nd quarter 2005 dollars, and includes fittings, miscellaneous duct supports and other materials plus field labor costs required to install the ductwork, but does not include other associated indirect costs such as construction management, engineering, owner's cost, contingency, etc. BACT Attachment B presents the development of unit installed costs for stainless steel ducting based on the costs derived from the Eichleay estimate.
- Linear feet of ducting required was extracted from the Eichleay Estimate for a similar system at Gallo-Livingston (see BACT Attachment B).
- Costs for structural steel supports and foundations were extracted from the Eichleay Estimate for a similar system at Gallo-Livingston (see BACT Attachment B).
- Sales tax of 8% was applied to all materials.
- Indirect costs include Engineering, Construction Expense and Contractor's Fee and Contingency. Factors for these costs are taken from Peters & Timmerhaus<sup>3</sup>.

#### Capital Investment (for ductwork and steel supports)

Fixed Capital Investment is summarized in the following table:

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<sup>2</sup> Eichleay Engineers of California, Fermenter VOC Emissions Control Cost Estimate Revision 1, Eichleay Project Numbers 30892 and 30913, June 30, 2005

<sup>3</sup> Peters & Timmerhaus, Plant Design and Economics for Chemical Engineers, 2<sup>nd</sup> Edition, McGraw-Hill, 1968, P. 140

**Fixed Capital Investment for Options 3, 4, 5 and 6**

Item	Qty	Unit	Unit Material Cost	Total Item Material Cost	Unit Labor Cost	Total Item Labor Cost	Unit Subcontract Price	Total Item Subcontract Cost	Total Item Direct Cost
<b>Direct Cost</b>									
6" Dia. Ducting	75	ft	\$32.11	\$2,408	\$29.20	\$2,190			\$4,598
12" Dia. Ducting	870	ft	\$75.33	\$65,537	\$68.49	\$59,586			\$125,123
Drilled Piers	32	ea.					\$1,000.00	\$32,000	\$32,000
Structural Steel Supports	1	lot	\$45,273	\$287,630	\$45,273	\$45,273			\$332,903
Direct Cost Subtotals				\$355,575		\$107,049		\$32,000	\$494,624
Sales Tax				\$28,446					\$28,446
Total Direct Cost				\$384,021		\$107,049		\$32,000	\$523,070
<b>Indirect Costs</b>									
Engineering @ 15% of Direct Cost									\$78,461
Construction Expense and Contractor's Fee @ 20% of Direct Cost									\$104,614
Contingency @ 15% of Fixed Capital Investment									\$124,614
Fixed Capital Investment									\$830,759

Annualized Capital Investment and Cost Effectiveness (based on ductwork):

Annualized Capital Investment = Initial Capital Investment x Amortization Factor

Amortization Factor = 0.163 per District policy, amortizing over 10 years at 10%

Therefore,

Annualized Capital Investment = \$830,759 x 0.163 = \$135,414

Cost Effectiveness = Annualized Cost/Annual Emission Reductions

**Cost Effectiveness = \$135,414/5.76 tons-VOC = \$23,509/ton-VOC**

As shown above, the cost of VOC reduction by capture of VOCs with thermal or catalytic oxidation, carbon adsorption, absorption or condensation would be greater than the \$17,500/ton cost effectiveness threshold for VOC in the District BACT policy, based only on the direct cost required for the collection ducting. Therefore these options are not cost-effective and will not be considered for this project.

**Step 5 - Select BACT**

All identified feasible options with control efficiencies higher than the option proposed by the facility have been shown to not be cost effective. The facility has proposed Option 1, *Insulation or Equivalent, Pressure Vacuum Relief Valve (PVRV) set within 10% of the maximum allowable working pressure of the tank; "gas-tight" tank operation; and continuous storage temperature not exceeding 75 °F, achieved within 60 days of completion of fermentation.* These BACT requirements will be placed on the ATCs as enforceable conditions.

**Attachments:**

BACT Attachment A: Estimating VOC Emissions From Wine Storage Tanks

BACT Attachment B: Development of Direct Costs for Installation of a VOC Collection System on a Battery of Wine Storage Tanks

BACT Attachment C: Ducting, Structural Steel and Foundation Cost Estimates From Eichleay Study

## **BACT Attachment A**

### **Estimating VOC Emissions From Wine Storage Tanks**

## Wine and Brandy Storage Tank Emission Factors

### Breathing Loss Emission Factors

lb per day (or Year) per 1000 gallons nominal tank capacity

Nominal Tank Volume (gallons)	8 vol% Ethanol		10 vol% Ethanol		12 vol% Ethanol		14 vol% Ethanol		16 vol% Ethanol		18 vol% Ethanol		20 vol% Ethanol		100 vol% Ethanol	
	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual	Daily	Annual
250	0.00186	0.347	0.00240	0.450	0.00296	0.557	0.00358	0.664	0.00421	0.787	0.00490	0.909	0.00561	1.04	0.02650	4.53
400	0.00186	0.347	0.00240	0.450	0.00296	0.556	0.00357	0.663	0.00421	0.786	0.00489	0.908	0.00561	1.04	0.02640	4.53
1,000	0.00185	0.346	0.00239	0.448	0.00295	0.554	0.00356	0.661	0.00419	0.783	0.00487	0.905	0.00558	1.04	0.02630	4.53
5,000	0.00181	0.340	0.00233	0.436	0.00288	0.539	0.00346	0.647	0.00408	0.762	0.00473	0.882	0.00541	1.01	0.02530	4.53
15,000	0.00178	0.335	0.00229	0.431	0.00283	0.532	0.00340	0.638	0.00401	0.751	0.00464	0.869	0.00531	0.993	0.02460	4.43
25,000	0.00178	0.335	0.00229	0.431	0.00282	0.531	0.00339	0.638	0.00399	0.750	0.00463	0.867	0.00529	0.991	0.02440	4.40
35,000	0.00176	0.332	0.00226	0.426	0.00279	0.526	0.00335	0.631	0.00395	0.742	0.00457	0.858	0.00523	0.980	0.02380	4.34
45,000	0.00175	0.331	0.00225	0.425	0.00278	0.524	0.00334	0.629	0.00393	0.739	0.00455	0.855	0.00471	0.976	0.02290	4.31
105,000	0.00172	0.326	0.00221	0.419	0.00272	0.516	0.00327	0.618	0.00384	0.726	0.00444	0.839	0.00507	0.957	0.02210	4.18
205,000	0.00169	0.321	0.00216	0.412	0.00267	0.507	0.00320	0.607	0.00375	0.712	0.00434	0.822	0.00495	0.938	0.02150	4.05
305,000	0.00166	0.317	0.00213	0.406	0.00262	0.500	0.00314	0.599	0.00369	0.702	0.00426	0.810	0.00486	0.923	0.02110	3.96
405,000	0.00165	0.315	0.00211	0.403	0.00259	0.495	0.00311	0.593	0.00364	0.695	0.00420	0.801	0.00479	0.913	0.02080	3.90
505,000	0.00163	0.313	0.00209	0.400	0.00257	0.492	0.00308	0.588	0.00361	0.689	0.00416	0.795	0.00474	0.905	0.02040	3.85
605,000	0.00162	0.310	0.00207	0.397	0.00254	0.488	0.00304	0.583	0.00357	0.683	0.00365	0.787	0.00468	0.896	0.02000	3.79

### Working Loss Emission Factors

lb per day (or year) per 1000 gallons tank throughput

Daily	0.158	0.200	0.244	0.289	0.335	0.383	0.432	1.630
Annual	0.109	0.138	0.170	0.198	0.230	0.263	0.297	1.130

## **BACT Attachment B**

### **Development of Direct Costs for Installation of a VOC Collection System on a Battery of Wine Storage Tanks**

## **Background**

During the development of District Rule 4694 (Wine Fermentation and Storage Tanks), The Wine Institute commissioned a study by Eichleay Engineers of California to develop costs for installation of VOC controls on all wine fermentation tanks at the Gallo winery located in Livingston, CA. The SJVAPCD participated in development of the study and in the review of the final draft. The District reviewed this estimate (Eichleay study) in conjunction with the development of District Rule 4694 (see Appendix C, Final Draft Staff Report - Rule 4694, December 15, 2005). The District's review indicated that, although the District took issue with various scope elements of the overall estimate, the estimating methodology employed appears to be fundamentally sound and follows accepted practice in the engineering and construction industry, accurately estimating the material quantities required for the stated scope and applying reasonable unit rates and costs for materials and labor for development of direct costs.

The Eichleay study developed detailed direct cost estimates for four separate tank batteries at Gallo-Livingston; VOC-1, '-2, '-3 and '-4 (see plot diagram in Attachment A). The direct cost estimate scope for each battery included a stainless steel ducting manifold system connected to a VOC control device and structural steel ducting supports with associated foundations. VOC-2 is a tank battery consisting of twelve (12) 200,000 gallon capacity tanks, identical to the hypothetical "industry-typical" tank battery installation which forms the basis for the cost effectiveness calculations for this BACT determination. The estimates of ducting, steel supports and foundations prepared in the Eichleay study for VOC-2 can be used as a basis to establish costs for the cost effectiveness evaluation required by this BACT determination.

## **Approach and Estimate Basis**

### **Ducting**

Attachment B is the detailed direct cost estimate from the Eichleay study for ducting for VOC-2 (annotated to indicate the required subtotals). Since VOC-2 at Gallo-Livingston consists of twelve fermentation tanks rather than storage tanks, the diameter of the estimated ductwork is larger than required for storage-only tanks due to the much larger vent rate from fermentation. However, since the tank sizes and layout considerations would not be affected by tank utilization, the Eichleay estimate of total linear footage and duct fittings ductwork can be utilized directly. The estimate details in Attachment B are utilized in the following manner to develop ducting costs for the "industry typical" tank battery:

- Linear feet of ductwork required is taken directly from the Eichleay estimate for VOC-2 (Attachment B). Linear feet required for individual branch connections to each tank is given by the footage of 12" diameter ducting while the linear footage for the main header is represented by the balance of the ductwork for VOC-2. Based on this approach, 75 linear feet of ducting is required for branch connections to the tanks while 870 feet of ducting is required for the main headers and the ducting run to the control device. Since the "industry-typical" ducting for storage tanks has been determined to be 6" diameter for branch connections and 12" diameter for the main header, the following material requirements are established for the "industry-typical" storage tank battery:

6" diameter ducting: 75 linear feet  
12" diameter ducting: 870 linear feet

- Unit direct cost (\$ per foot) of 12" diameter ducting can be determined by adding the labor and material costs required and dividing by the total linear footage of the particular diameter of ducting included in the estimate. For the 75 linear feet of 12" diameter ducting included in the Eichleay estimate for VOC-2, total labor and material costs were estimated at \$5,137 and \$5,650 respectively. Dividing each figure by 75 yields the unit labor and material costs for 12" diameter ducting:

Unit labor cost for 12" ducting: \$68.49/ft  
Unit material cost for 12" ducting: \$75.33/ft

- The Eichleay estimate did not include estimates of direct cost for 6" diameter duct. Therefore, it is necessary to develop a cost by appropriate factoring of the 12" diameter cost. To adjust the direct cost to a 6" system, cost equations for stainless steel plate ductwork are taken from the EPA Air Pollution Control Manual, Section 2, Chapter 1, Table 1.9, which indicates a cost equation for stainless steel plate duct as follows:

$$\text{Duct Cost} = 6.29 \times (\text{Duct Diameter}_{\text{inches}})^{1.23}$$

Using this equation form, it is apparent that the relative cost of 6" duct versus 12" duct can be calculated as follows:

$$6" \text{ Duct Cost} = 12" \text{ Duct Cost} \times (6/12)^{1.23}$$

Since the EPA cost manual develops total direct cost based on applying additional factors to the duct cost, the use of the above factor for adjustment of the total direct cost is consistent with EPA cost estimation methods.

Therefore,

$$\text{Unit Labor Cost for 6" Duct} = \$68.49 \times (6/12)^{1.23} = \$29.20/\text{linear foot}$$

$$\text{Unit Material Cost for 6" Duct} = \$75.33 \times (6/12)^{1.23} = \$32.11/\text{linear foot}$$

### Structural Steel

- Structural steel cost can be assumed to be the same for the "industry-typical" system as for VOC-2 since the heights and sizes of structure will be the same. Attachment C is the Eichleay estimate of structural steel required for VOC-2, annotated to show required subtotal. Based on this approach, structural steel cost for the industry-typical" case is as follows:

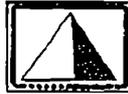
Purchased Structural Steel: \$287,630  
Labor for Erection of Structural Steel: \$45,273

## Foundations

- Cost for foundations for the structural steel towers can be assumed to be the same for the "industry-typical" system as for VOC-2 since the heights and sizes of the structures are assumed to be the same. Attachment D is the Eichleay estimate of the foundations required for VOC-2, annotated to show the required subtotal. Pricing is based on a subcontract price including labor and materials. Based on this approach, 32 drilled concrete piers are required at a subcontract cost of \$1,000 each.

## **BACT Attachment C**

### **Ducting, Structural Steel and Foundation Cost Estimates From Eichleay Study**



**Eichleay**  
Engineers Inc. of CA

Client Name: Wine Institute  
Job Number: 30913  
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

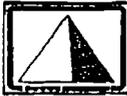
**PRELIMINARY ESTIMATE**

Estimated By: P.H.M.  
Checked By: R.H.  
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/UNIT	TOTAL MHRS	UNIT COSTS			TOTAL COSTS			TOTAL	
						\$ / Hr	MAT'L	SUBCON.	TOTAL	LABOR	MAT'L		SUBCON.
1	Bolt up	100	ea	6.5	650	65.00			422.50	42,250			42,250
1	Handle	96	ea	7.2	691.2	65.00			468.00	4,928			44,928
1	Install	20	lot	3	60	65.00			195.00	3,900			3,900
VOC-2													
2	12" Duct	75	ft				62.00		62.00				4,650
2	12" Duct misc. fittings	1	lot				1,000.00		1,000.00				1,000
2	Bolt up	21	ea	1.5	31.5	65.00			97.50	2,048			2,048
2	Handle	19	ea	2.08	39.52	65.00			135.20	2,569			2,569
2	Install	4	lot	2	8	65.00			30.00	520			520
2	18" Duct	65	ft				86.00		86.00				5,590
2	18" Duct misc. fittings	1	lot				2,000.00		2,000.00				2,000
2	Bolt up	19	ea	3	57	65.00			195.00	3,705			3,705
2	Handle	17	ea	3.52	59.84	65.00			228.80	3,890			3,890
2	Install	3	lot	2	6	65.00			130.00	390			390
2	22" Duct	50	ft				99.00		99.00				4,950
2	22" Duct misc. fittings	1	lot				2,000.00		2,000.00				2,000
2	Bolt up	15	ea	4	60	65.00			260.00	3,900			3,900
2	Handle	13	ea	4.6	59.8	65.00			299.00	3,887			3,887
2	Install	3	lot	3	9	65.00			195.00	585			585
2	24" Duct	35	ft				106.00		106.00				3,710
2	24" Duct misc. fittings	1	lot				3,000.00		3,000.00				3,000
2	Bolt up	11	ea	4	44	65.00			260.00	2,860			2,860
2	Handle	9	ea	4.6	41.4	65.00			299.00	2,691			2,691
2	Install	2	lot	3	6	65.00			195.00	390			390
2	28" Duct	15	ft				119.00		119.00				1,785
2	28" Duct misc. fittings	1	lot				2,000.00		2,000.00				2,000
2	Bolt up	5	ea	5.5	27.5	65.00			357.50	1,788			1,788
2	Handle	4	ea	5.32	21.28	65.00			345.80	1,383			1,383

*Total Ducting > 12" dia = 870'*

*Handwritten notes:*  
Labor of Mat'l cost for 15' of 12" duct 650  
5,650  
5,137  
5,590  
2,000



**Eichle**  
Engineers Inc. of CA

Client Name: Wine Institute

Job Number: 30913

Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

**PRELIMINARY ESTIMATE**

Estimated By: P.H.M.

Checked By: R.H.

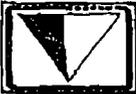
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/UNIT	TOTAL MHR	UNIT COSTS				TOTAL COSTS			TOTAL
						\$/Hr	MAT'L	SUBCON.	TOTAL	LABOR	MAT'L	SUBCON.	
2	Install	1	lot	3	3	65.00			195.00	195			195
2	30" Duct	25	ft				128.00		128.00		3,200		3,200
2	30" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
2	Bolt up	8	ea	5.5	44	65.00			357.50	2,860			2,860
2	Handle	6	ea	5.32	31.92	65.00			345.80	2,075			2,075
2	Install	1	lot	3	3	65.00			195.00	195			195
2	32" Duct	265	ft				177.00		177.00		46,905		46,905
2	32" Duct misc. fittings	1	lot				4,500.00		4,500.00		4,500		4,500
2	Bolt up	68	ea	6	408	65.00			390.00	26,520			26,520
2	Handle	66	ea	6	396	65.00			390.00	25,740			25,740
2	Install	13	lot	3	39	65.00			195.00	2,535			2,535
2	42" Duct	415	ft				242.00		242.00		100,430		100,430
2	42" Duct misc. fittings	1	lot				25,000.00		25,000.00		25,000		25,000
2	Bolt up	115	ea	6.5	747.5	65.00			422.50	48,588			48,588
2	Handle	104	ea	7.12	740.48	65.00			462.80	48,131			48,131
2	Install	21	lot	4	84	65.00			260.00	5,460			5,460
VOC-3													
3	6" Duct	25	ft				38.00		38.00		950		950
3	6" Duct misc. fittings	1	lot				500.00		500.00		500		500
3	Bolt up	7	ea	1	7	65.00			65.00	455			455
3	Handle	6	ea	1.4	8.4	65.00			91.00	546			546
3	Install	1	lot	1.5	1.5	65.00			97.50	98			98
3	10" Duct	35	ft				54.00		54.00		1,890		1,890
3	10" Duct misc. fittings	1	lot				1,000.00		1,000.00		1,000		1,000
3	Bolt up	11	ea	1.5	16.5	65.00			97.50	1,073			1,073
3	Handle	9	ea	1.72	15.48	65.00			111.80	1,006			1,006
3	Install	2	lot	2	4	65.00			130.00	260			260
3	12" Duct	70	ft				62.00		62.00		4,340		4,340

Client Name: Wine Institute

Job Number: 30913

Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters



Eichler Engineers Inc. of CA

PRELIMINARY ESTIMATE

Estimated By: P.H.M.

Checked By: R.H.

Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/UNIT	TOTAL MHR	\$/HR	MATL	SUBCON	TOTAL	LABOR	MATL	SUBCON	TOTAL
	VOC-2 Duct Section												
	2 15 x 15 towers	4 ea	20	80	65.00	20,000.00	21,300.00		5,200	80,000			85,200
	2 20' top level connection beams	6 ea	2	12	65.00	780.00	830.00		780	4,200			4,980
	2 cross bracing on top open sections	3 ea	2	6	65.00	400.00	530.00		390	1,200			1,590
	2 15 x 15 towers	3 ea	20	60	65.00	20,000.00	21,300.00		3,900	60,000			63,900
	2 15' top level connection beams	4 ea	2	8	65.00	550.00	680.00		520	2,200			2,720
	2 cross bracing on top open sections	2 ea	2	4	65.00	300.00	430.00		260	600			860
	2 15 x 20 towers - shared vertical columns	2 ea	20	40	65.00	20,000.00	21,300.00		2,600	40,000			42,600
	2 15 x 15 tower	1 ea	20	20	65.00	10,000.00	11,300.00		1,300	10,000			11,300
	2 3' wide grating on walkway 3, 4' wide on walkway 4	945 sf	0.15	141.75	65.00	19,000	28,750		9,214	17,955			27,169
	2 3' wide grating to tanks	360 sf	0.15	54	65.00	19,000	28,750		3,510	6,840			10,350
	2 handrails	820 lf	0.3	246	65.00	75,000	94,500		15,990	61,500			77,490
	2 grating to existing catwalks	165 sf	0.15	24.75	65.00	19,000	28,750		1,609	3,135			4,744
	VOC-3 Duct Section												
	3 20 x 8 towers	3 ea	20	60	65.00	15,000.00	16,300.00		3,900	45,000			48,900
	3 20' top level connection beams	6 ea	2	12	65.00	700.00	830.00		760	4,200			4,980
	3 cross bracing on top open sections	3 ea	2	6	65.00	400.00	530.00		390	1,200			1,590
	3 15 x 8 towers	1 ea	20	20	65.00	14,000.00	15,300.00		1,300	14,000			15,300
	3 15 x 15 towers	5 ea	20	100	65.00	18,000.00	19,300.00		6,500	90,000			96,500
	3 15' top level connection beams	8 ea	2	16	65.00	550.00	680.00		1,040	4,400			5,440
	3 cross bracing on top open sections	4 ea	2	8	65.00	300.00	430.00		520	1,200			1,720
	3 3' wide grating on walkway 6 & 7	810 sf	0.15	121.5	65.00	19,000	28,750		7,898	15,390			23,288
	3 3' wide grating to tanks	510 sf	0.15	75.5	65.00	19,000	28,750		4,973	9,690			14,663
	3 handrails	920 lf	0.3	276	65.00	75,000	94,500		17,940	69,000			86,940
	3 grating to existing catwalks	60 sf	0.15	9	65.00	19,000	28,750		585	1,140			1,725
	TOTAL COSTS												
	TOTAL												

Handwritten circled text: 45,273 287,630

Handwritten circled text: Structure Steel



## **APPENDIX J**

### **BACT Guideline 5.4.14 for Wine Fermentation Tanks and Top-Down Analysis for Wine Fermentation Tanks**

San Joaquin Valley  
Unified Air Pollution Control District

**Best Available Control Technology (BACT) Guideline 5.4.14\***

Last Update: 10/6/2009

**Wine Fermentation Tank**

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Temperature-Controlled Open Top Tank with Maximum Average Fermentation Temperature of 95 deg F	1. Capture of VOCs and Thermal Oxidation or Equivalent (88% control)  2. Capture of VOCs and Carbon Adsorption or Equivalent (86% control)  3. Capture of VOCs and Absorption or Equivalent (81% control)  4. Capture of VOCs and Condensation or Equivalent (81% control)	

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

**\*This is a Summary Page for this Class of Source - Permit Specific BACT Determinations on Next Page(s)**

## Top-Down BACT Analysis for VOC Emissions from Wine Fermentation Tanks

### Step 1 - Identify All Possible Control Technologies

The SJVUAPCD BACT Clearinghouse Guideline 5.4.14 identifies achieved-in-practice BACT for wine fermentation as 'Temperature-controlled open top tank with maximum average fermentation temperature of 95 deg. F'.

The following technologically feasible controls are identified in the BACT Guideline:

1. Capture of VOCs and Thermal Oxidation or Equivalent
2. Capture of VOCs and carbon adsorption or equivalent
3. Capture of VOCs and absorption or equivalent
4. Capture of VOCs and condensation or equivalent

There are no controls identified under the Alternate Basic Equipment category.

### Step 2 - Eliminate Technologically Infeasible Options

All of the options listed above are considered to be technologically feasible.

### Step 3 - Rank Remaining Control Technologies by Control Effectiveness

The options enumerated above can be ranked as follows:

Rank by Control Effectiveness			
Rank	Option	Control	Overall Capture & Control Efficiency <sup>(*)</sup>
1	1	Capture of VOCs and thermal oxidation	88 % <sup>(**)</sup>
2	2	Capture of VOCs and carbon adsorption	86 %
3	3	Capture of VOCs and absorption.	81 %
4	4	Capture of VOCs and condensation	81 %
5	Achieved in practice BACT		-

(\*) Capture efficiency (90%) x removal efficiency for control device

(\*\*) Following recent District practice, thermal and catalytic oxidation will be ranked together.

## **Step 4 - Cost Effectiveness Analysis**

### General Approach for Cost Effectiveness Analysis

Due to differences in processing temperature, red wine has an emissions factor of 6.2-lb VOC/1,000 gallons whereas white wine has an emissions factor of 2.5-lb/1000 gallons of fermented wine. In addition, red wine fermentation batches are completed in 3 to 5 days versus 10 to 14 days for white wine fermentation. Therefore, a red wine fermentation tank of a given size will potentially operate at significantly higher throughput and produce significantly higher emissions per unit of throughput relative to a white wine fermentation tank of the same size. As a result of these differences in emission rates, the cost effectiveness for controlling emissions from red wine will be fundamentally better than that for white wine and thus the cost effectiveness analysis will be first performed for red wine only. In the event a technology is shown to be cost effective for red wine, that particular technology will be analyzed for white wine fermentation as well.

The following emission control technologies have been determined to be technologically feasible for control of VOC emissions from wine fermentation tanks:

- Thermal Oxidation (88% control)
- Carbon Adsorption (86% control)
- Refrigerated Condenser (81% control)
- Wet Scrubber (81% control)

Recognizing that "thermal oxidation" includes both recuperative and regenerative thermal oxidizers, the cost effectiveness of the following cases will be examined:

- |        |   |
|--------|---|
| Case 1 | Thermal oxidation with 0% heat recovery (low capital/high operating cost)               |
| Case 2 | Regenerative thermal oxidation with 95% heat recovery (high capital/low operating cost) |
| Case 3 | Refrigerated Condensers   |
| Case 4 | Water scrubber  |
| Case 5 | Carbon adsorption   |

To establish a comparative physical scope of each of the above cases, the District took an industry-wide approach based of applying the five different control technology cases to red wine fermentation tanks located at the E & J Gallo Winery at Livingston, California. The rationale for this is based on the following:

- The Gallo facility at Livingston is sufficiently representative of typical red wine fermentation facilities located at major source wineries to allow it to serve as a general model for the physical scope requirements of such facilities including the O'Neill facility.
- The Gallo facility is currently the largest winery in the world, with average fermentation tank sizes larger than those used by smaller wineries. Any control technology found to not be cost effective for the Gallo facility can be assumed to be not cost effective to smaller

facilities due to economies of scale. If any technology is determined to be cost effective at Gallo, it will then be analyzed for other smaller facilities on a case-by-case basis to confirm cost effectiveness for the smaller operation.

- The Gallo facility was used as a basis for engineering and cost effectiveness studies in development of District Rule 4694 and substantial scope and cost information is available for this facility pertaining to the scope of control system requirements and that of the ancillary systems required to support the basic emission control units (such as ductwork and supports and the CIP systems for the ductwork). The Eichleay study details the potential application of VOC controls to this facility and addresses many of the technical issues and the general site specific factors for wineries. This study developed two separate estimates, one for the fermentation control system installation ("Base Estimate") and a second "Utilities Estimate" to cover the clean-in-place system, the expansion of the plant electric utility and the instrument air system. District staff has reviewed the estimating methodology employed in the Eichleay estimates and found that the estimating approach is fundamentally sound and follows accepted practice in the engineering and construction industry, applying reasonable unit rates and costs for materials and labor for development of direct costs. This information is available to use as a basis for this cost effectiveness analysis. The Eichleay Base and Utilities Estimates are attached as BACT Attachment A.

### Estimating Basis

Estimates of Total Capital Investment (TCI), annual costs, potential emission reductions, and the resulting cost effectiveness have been prepared for each of the control technology cases above utilizing selected portions of the Direct Costs developed by the Eichleay study. The general approach and basis of the estimates is as follows:

1. Except for specific substitutions or modifications as listed below, EPA's cost template for VOC incineration systems, as presented in the EPA Control Cost Manual, Section 3.2, Tables 2.8 and 2.9, was used. Typical site specific factors and other required direct costs not covered by the template have been extracted from the Eichleay study and inserted in the template to cover all the scope elements required for installation of controls on fermentation tanks. To ensure that all estimate cases are comparative, the EPA cost template (with EPA cost factors) was used to develop the direct cost of installing the purchased control device for all estimate cases. The control device is taken to include the upstream separator vessel which is used to separate any entrained liquids from the fermentation tank vent stream before it enters the control device.
2. All estimates are based on the general facilities design prepared by Eichleay for the Gallo winery at Livingston, CA. Using this basis, the impact of substituting different control technologies will be examined. It is assumed that the basic scope of ductwork and supports, tank modifications, ancillary systems and site specific costs will be common to all technologies.
3. The Gallo facility consists of 60 red wine fermentation tanks with a combined nominal capacity of 6,850,000 gallons. In the general facilities design as prepared by Eichleay the tanks are grouped into four separate groups of tanks, each group separately manifolded together and ducted to a separate dedicated control device. The tank groupings are designated as follows:

- VOC-1        Seventeen (17) 100,000 gallon tanks
- VOC-2        Twelve (12) 200,000 gallon tanks
- VOC-3        Ten (10) 100,000 gallon tanks and seven (7) 50,000 gallon tanks
- VOC-4        Fourteen (14) 100,000 gallon tanks

4. Control device capacity (per the Eichleay study) is based on a peak vapor rate of 9.75 scfm/1000 gallons of wine fermenting at an 85 °F fermentation temperature. Since the Eichleay study was based solely on using a thermal incinerator as the control device, an additional 23.6 % flow capacity is included in the control device capacity to account for the combustion air which must be added since the vent stream from the tank contains only CO<sub>2</sub>, water and ethanol. Other non-combustion control technologies do not require additional air and may thus be rated at a lower flow capacity. On this basis, the four control devices have been determined to require the following capacities:

<b>Red Fermentation Capture and Control Systems Proposed for Gallo-Livingston Per Eichleay Engineering Study</b>					
VOC Device Number	No. of Tanks	Fermentation Tank Capacity (gallons)	Total Capacity of Red Fermentation Tanks (gallons)	Combustion Control Device Flow Capacity per the Eichleay Study (SCFM)	Non-Combustion Control Device Flow Capacity (SCFM)
VOC-1	17	100,000	1,700,000	16,000	12,900
VOC-2	12	200,000	2,400,000	22,000	17,800
VOC-3	10	100,000	1,350,000	13,000	10,500
	7	50,000			
VOC-4	14	100,000	1,400,000	13,000	10,500
<b>Total</b>	<b>60</b>		<b>6,850,000</b>	<b>64,000</b>	<b>51,700</b>

5. Capacities and costs for control devices for each case were developed based on the capacities of the four VOC systems listed above. Sources for pricing of control devices were as follows:

Recuperative Thermal Oxidizers: EPA Cost Control Manual, Section 3.2, Chapter 2, Equation 2.29

Regenerative Thermal Oxidizers: Vendor quotations obtained by Eichleay Engineering

Carbon Adsorption System: Technical Assessment Document, p.17

Water Scrubbers: STI Study<sup>1</sup>, Table 5

BACT Attachment B presents the developed capacities and estimated purchase prices for the control devices for each estimate case..

6. Purchased equipment costs for the knock out vessels (common to all estimate cases) have been extracted from the main Eichleay estimate. A purchased material cost of \$148,000 for the knock out vessels was taken from page 15 of Eichleay's main estimate. Sizing criteria is presented in the Eichleay study and the pricing was developed based on Eichleay's in-house estimating data for this type of equipment derived from purchasing experience on previous projects.
7. Direct costs taken from the Eichleay study will be used for estimation of site specific and other costs not covered by the equipment factors in the EPA VOC incineration cost template. These costs include site preparation, ductwork, structural steel pipeway and associated foundations for ductwork support, clean-in-place (CIP) system, expansion of the plant electric utility, modification of fermentation tanks for duct connections, and the instrumentation system for control of tank foam over.
8. Site preparation costs to develop a plot area for the VOC control equipment have been extracted from page 4 of the main Eichleay estimate which the District considers to be typical of the requirements which would be encountered at most existing major wineries. Most wineries are constructed with the tanks located in tight groups with minimal spacing between the tanks, requiring that control devices be installed on the perimeter of the winery, typically undeveloped agricultural land. Extracted costs from the Eichleay include subcontract pricing for demolition of an existing road, installation and compaction of fill, and new pavement to develop a plot space sufficient to install four new control devices with upstream separators and associated piping and ducting. These costs total \$1,254,000 and are based on budgetary subcontract pricing obtained by Eichleay.
9. The total direct cost for ductwork was extracted from the Eichleay study. A material cost of \$1,104,800 and an installation labor cost of \$940,500 for the ductwork has been extracted from pages 16 through 23 of the main Eichleay estimate. California sales tax of 8% and freight charges of 3% were added to the materials cost to arrive at a direct cost of \$2,167,000 for the ductwork. Estimated ductwork quantities are based on Eichleay plan drawings and process flow diagrams. Unit costs for fabricated stainless steel ductwork were based on a budgetary quotation obtained by Eichleay from Viron International, a ductwork spool fabricator.
10. A material cost of \$1,779,600 and an installation labor cost of \$752,000 for structural steel to support the new ductwork system and associated piping has been extracted from the totals presented on page 8 of the Eichleay base estimate. California sales tax of 8% and freight charges of 3% were added to the materials cost to arrive at a direct cost of \$2,727,000 for the structural steel. Steel design and quantities in this estimate are based on Eichleay plan drawings. Fabricated steel pricing was based on a quotation obtained by Eichleay from a structural steel fabricator in Bakersfield, CA.

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<sup>1</sup> Sonoma Technology, Inc., Control Technology Evaluation: Wineries - Fermentation Processes, Control Measures Assessment STI-903340-2429a-CMA, October 21, 2003.

11. Costs for heavy lift equipment including heavy cranes and use of a helicopter operation to set steel structures and ductwork was taken from page 24 of the main Eichleay estimate. Pricing was obtained by Eichleay from a helicopter firm based out of the Fresno Airport.
12. The Eichleay utility estimate developed a total direct cost of \$5,859,000 for both the CIP system and the expansion of the plant electric utility. Eichleay drawing SK-30892-004 provides a piping and instrumentation diagram for the CIP chemicals storage and supply system. Drawing SK-30892-006 illustrates the CIP spray header installation in the ductwork. Expansion of the electric utility included new 12 kV switchgear and 1500 kVA transformer to supply power from the existing switchyard to the project (see Eichleay drawings 30892-SK-E01 and E02). A direct allocated cost of \$314,000 for the electric utility expansion was extracted from page 8 of the utilities estimate. Total Direct Cost for this item is taken as 391,000 after pro-rating the Contractor's Fee and other unallocated construction expense from the estimate. The balance of the Total Direct Cost (labeled "Field Cost" in the estimate summary sheet) is the direct cost of \$5,468,000 for the CIP system (this figure includes a small amount for expansion of the plant instrument air system also).
13. The direct costs (materials, labor, and subcontracts) to modify the fermentation tanks for installation of new nozzles required for connection of ductwork includes costs for build and teardown of scaffolding in each tank, demolition of existing insulation, machine cutting of each tank, fabrication and installation of new nozzles, and post-weld passivation of the tank. These costs are taken from pages 15 and 16 of the main estimate and total \$487,000.
14. The direct cost for an instrumentation system for control of tank foam over was taken from page 13 of the main Eichleay estimate. The materials cost of \$514,800 for capacitance probes, actuated butterfly valves and switches to be installed on each tank was adjusted to include California sales tax and a 3% freight cost. Installation labor of \$57,600 from page 13 was added to yield a total direct cost for this item of \$629,000. Design basis for the system is presented in the Eichleay drawings. Unit material costs are based on budgetary vendor's pricing obtained by Eichleay. Unit labor factors and costs are based on Eichleay's in-house estimating data.
15. The EPA model cost factor for foundations and supports is 8% of purchased equipment cost which in this case is applicable to only the control device and the knock out vessel. It thus does not factor in the costs of foundations for the substantial steel structures required for this project. Therefore, this cost was extracted from the Eichleay study and added as a direct cost in the estimate. Foundation design for the pipeway consists of drilled concrete piers for support of pipeway structures which require a minimal footprint relative to conventional footers and for this reason are the standard approach for support under new steel columns when they are being installed in congested areas in existing industrial facilities. Direct costs (material + labor + subcontract) for concrete pier foundations have been extracted from page 5 of the estimate (\$247,000) which covers drilling, rebar fabrication and setting, forming, pouring and finishing of the drilled piers. Estimated quantities are based on Eichleay plan drawing SK-30913-001 and the steel structure sections presented in Eichleay drawing SK-S12. The unit costs were based on Eichleay's historical experience with subcontract pricing for these items.
16. Construction Expense and Contractor's Fee have been included in the direct costs at 8% and 10 percent of all other direct costs respectively. These percentages reflect those used

in the Eichleay study and are typical based on District Staff's experience. For comparison, Peters & Timmerhaus<sup>2</sup> recommend 10% and 7% for the items respectively.

17. Annual natural gas usage of 67,412 therms was estimated for the Gallo Livingston design by Eichleay (Appendix G of the Eichleay study) based on a 12 week season and 95% thermally efficient RTO's operating 50% of the time with an ethanol concentration of 6,034 ppm for 50% of the time and in hot standby the other 50% with allowance for startups. This natural gas usage will be used as the basis for the cost effectiveness calculations, factored as required for the thermal efficiency basis of the proposed control unit.
18. Long term natural gas price is assumed to be \$8.00 per MMBtu
19. Power consumption for the Gallo facility is estimated by Eichleay at 586 kW (Appendix G of the Eichleay study). Since essentially all this power is consumed by the induced draft fans at the VOC control unit, this power basis will be assumed to be the same for the induced draft fans associated with all control technologies, factored down as required for control units not requiring combustion air.
20. Power consumption will be based on a 120 day crush season and a power cost of \$0.11/kWh.
21. BACT Attachment C presents a tabulation of the utilities and other annual costs for each estimate case as well as the details of the basis and calculations.
22. Escalation has been applied at a rate of 3% per year where applicable.
23. Engineering cost and construction management costs have been included at 15% and 3% of the Total Direct Cost based on the percentages applied in the Eichleay Study. These percentages reflect those used in the Eichleay study and are typical based on District Staff's experience. A value of 15% for engineering is generally less than that recommended by Peters & Timmerhaus<sup>3</sup> who indicate engineering costs typically are in the range of 4-21% of Total Capital Investment with a median value of 13%.
24. Calculated VOC emission reductions will be debited for collateral NOx and VOC production from firing of natural gas where applicable based on 1 lb NOx = 1 lb VOC. For natural gas, emissions are based on 0.1 lb-NOx/MMBtu and 0.0055 lb-VOC/MMBtu per AP-42. Calculated emissions from natural gas firing are presented in the following table:

<b>Natural Gas Combustion Emissions</b>					
<b>Item</b>	<b>Case 1 Thermal Ox</b>	<b>Case 2 RTO</b>	<b>Case 3 Refrigerated Condenser</b>	<b>Case 4 Water Scrubber</b>	<b>Case 5 Carbon Adsorption</b>
Natural Gas Combustion MMBtu/year	134,820	6,741	0	0	0

<sup>2</sup> Peters, Max and Klaus Timmerhaus, Plant Design and Economics for Chemical Engineers, McGraw-Hill, New York, 1968, p. 115.

<sup>3</sup> Peters, Max and Klaus Timmerhaus, Plant Design and Economics for Chemical Engineers, McGraw-Hill, New York, 1968, p. 115.

<b>Natural Gas Combustion Emissions</b>					
<b>Item</b>	<b>Case 1 Thermal Ox</b>	<b>Case 2 RTO</b>	<b>Case 3 Refrigerated Condenser</b>	<b>Case 4 Water Scrubber</b>	<b>Case 5 Carbon Adsorption</b>
Annual NOx Emissions From Natural Gas tons-NOx/year	6.7	0.34	0	0	0
Annual VOC Emissions From Natural Gas tons-VOC/year	0.4	0.02	0	0	0
<b>Total NOx + VOC from Natural Gas tons per year</b>	<b>7.1</b>	<b>0.4</b>	<b>0</b>	<b>0</b>	<b>0</b>

25. Contingency has been included at 10% of the sum of Total Direct Cost and Total Indirect Cost. This value is given as typically 8-20% with an average of 10% by Peters and Timmerhaus<sup>4</sup>
26. Operating labor requirement was estimated one full time operator for all four VOC control systems with 3 shifts per day for the duration of the 120 day crush operation.
27. Maintenance labor requirement was estimated at 80 hours per week for all four control systems during a total of 20 weeks per year.
28. Operating and maintenance labor cost was included at \$19.50/hour and \$33.00 for year 2005 respectively per the Eichleay study and escalated at 4% to 2009.
29. Maintenance materials have been estimated at 3% of TCI. (Peters and Timmerhaus give a typical value of 6% for general process industries).
30. Total Capital Investment has been annualized based on a 10 year equipment life and a 10% opportunity cost for capital (CRF = 0.163).
31. Calculation of potential emissions from fermentation is based upon the red wine emission factor of 6.2 lb-ethanol per 1000 gallons of red wine and upon the maximum potential wine production capacity for the fermentation tanks. Maximum annual throughput capacity is calculated as follows:

Red crush season duration of 120 days

Five day batch processing period for red wine fermentation; maximum number of batches per season = 120 days/season ÷ 5 days/ batch = 24 batches per season

Total red wine fermenter volume in this estimate = 6,850,000 gallons

Maximum fill for red wine fermenter (due to foaming/expansion) = 80%

<sup>4</sup> Peters, Max and Klaus D. Timmerhaus, Plant Design and Economics for Chemical Engineers, McGraw-Hill, New York, 1968, p.116.

Maximum wine production capacity = working capacity of fermenters x # batches per season = 6,850,000 x 80% x 24 = 131,520,000 gallons per year

VOC Emissions = 131,520,000 gallons/year x 6.2 lb-VOC/1000 gallons  
= 815,400 lb-VOC/year = **407.7 tons-VOC/year**

### **Cost Effectiveness Estimates**

Table 1 presents the development of Total Capital Investment (TCI) for all capture and control cases based on the general facilities design prepared by Eichleay (including site specific costs and CIP) and Table 2 presents the associated annual costs, emission reductions, and cost effectiveness for each capture and control case.

**Table 1**  
**Total Capital Investment for VOC Control of Red Wine Fermentation**

	Case 1 Thermal Ox	Case 2 RTO	Case 3 Refrigerated Condenser	Case 4 Water Scrub	Case 5 Carbon Adsorption
<b>Direct Costs</b>					
<b>Purchased Equipment Costs</b>					
Control Device	\$745,000	\$1,854,000	\$3,003,000	\$396,000	\$1,667,000
Knock Out Vessels	\$148,000	\$148,000	\$148,000	\$148,000	\$148,000
Subtotal Equipment (A)	\$893,000	\$2,002,000	\$3,151,000	\$544,000	\$1,815,000
Instrumentation (0.10 x A)	\$89,000	\$200,000	\$315,000	\$54,000	\$182,000
Sales Tax (0.08 x A)	\$71,000	\$160,000	\$252,000	\$44,000	\$145,000
Freight (0.05 x A)	<u>\$45,000</u>	<u>\$100,000</u>	<u>\$158,000</u>	<u>\$27,000</u>	<u>\$91,000</u>
Purchased Equipment Cost (PEC)	\$1,098,000	\$2,462,000	\$3,876,000	\$669,000	\$2,233,000
<b><u>Direct Installation Costs for Purchased Equipment</u></b>					
Foundations and Supports	\$88,000	\$197,000	\$310,000	\$54,000	\$179,000
Handling & Erection	\$154,000	\$345,000	\$543,000	\$94,000	\$313,000
Electrical	\$44,000	\$98,000	\$155,000	\$27,000	\$89,000
Piping	\$22,000	\$49,000	\$78,000	\$13,000	\$45,000
<b><u>Direct Costs Not Included Above</u></b>					
Structural Steel Pipeway	\$2,727,000	\$2,727,000	\$2,727,000	\$2,727,000	\$2,727,000
Ductwork	\$2,167,000	\$2,167,000	\$2,167,000	\$971,000	\$971,000
Pipeway Foundations	\$247,000	\$247,000	\$247,000	\$247,000	\$247,000
Site Prep	\$1,254,000	\$1,254,000	\$1,254,000	\$1,254,000	\$1,254,000
CIP System	\$5,468,000	\$5,468,000	\$5,468,000	\$5,468,000	\$5,468,000
Electrical Utility	\$391,000	\$391,000	\$391,000	\$391,000	\$391,000
Tank Modifications	\$487,000	\$487,000	\$487,000	\$487,000	\$487,000
Foam Over Control System	\$629,000	\$629,000	\$629,000	\$629,000	\$629,000
Heavy Lift Equipment	<u>\$1,192,000</u>	<u>\$1,192,000</u>	<u>\$1,192,000</u>	<u>\$1,192,000</u>	<u>\$1,192,000</u>
Subtotal	\$15,968,000	\$17,713,000	\$19,524,000	\$14,223,000	\$16,225,000
Construction Expense	\$1,277,000	\$1,417,040	\$1,561,920	\$1,137,840	\$1,298,000
Contractor's Fee	<u>\$1,597,000</u>	<u>\$1,771,300</u>	<u>\$1,952,400</u>	<u>\$1,422,300</u>	<u>\$1,622,500</u>
<b>Total Direct Costs</b>	<b>\$18,842,000</b>	<b>\$20,901,340</b>	<b>\$23,038,320</b>	<b>\$16,783,140</b>	<b>\$19,145,500</b>
<b><u>Indirect Costs</u></b>					
Engineering	\$2,826,000	\$3,135,000	\$3,456,000	\$2,517,000	\$2,872,000
Construction Management Expense	\$565,000	\$627,000	\$691,000	\$503,000	\$574,000
Start Up	\$22,000	\$49,000	\$78,000	\$13,000	\$45,000
Performance Test	\$11,000	\$25,000	\$39,000	\$7,000	\$22,000
Contingencies	<u>\$2,227,000</u>	<u>\$2,474,000</u>	<u>\$2,730,000</u>	<u>\$1,982,000</u>	<u>\$2,266,000</u>
<b>Total Indirect Costs</b>	<b>\$5,651,000</b>	<b>\$6,310,000</b>	<b>\$6,994,000</b>	<b>\$5,022,000</b>	<b>\$5,779,000</b>
<b>Total Capital Investment</b>	<b>\$21,619,000</b>	<b>\$24,023,000</b>	<b>\$26,518,000</b>	<b>\$19,245,000</b>	<b>\$22,004,000</b>

**Table 2**  
**Annual Costs for VOC Control of Red Wine Fermentation**

<b>Control Device</b>	<b>Case 1 Thermal Ox</b>	<b>Case 2 RTO</b>	<b>Case 3 Refrigerated Cond.</b>	<b>Case 4 Water Scrubber</b>	<b>Case 5 Carbon Adsorption</b>
<b>Total Capital Investment</b>	\$21,619,000	\$24,023,000	\$26,518,000	\$19,245,000	\$22,004,000
<b>Direct Annual Costs:</b>					
<b>Labor &amp; Materials</b>					
Operating Labor (.5 hr/shift-unit @ \$22.81/hour)	\$65,700	\$65,700	\$65,700	\$65,700	\$65,700
Supervisor (15% of operator cost)	\$9,900	\$9,900	\$9,900	\$9,900	\$9,900
Operating Materials (15% of total maintenance cost)	\$104,700	\$112,500	\$123,700	\$91,000	\$103,400
Maintenance Labor (0.5 hr/shift-unit @ \$38.60/hour)	\$49,400	\$29,200	\$29,200	\$29,200	\$29,200
Maintenance Materials (3% of TCI)	\$648,600	\$720,700	\$795,500	\$577,400	\$660,100
Utilities	\$1,263,600	\$239,500	\$399,600	\$2,194,400	\$407,200
<b>Total Direct Annual Cost</b>	<b>\$2,141,900</b>	<b>\$1,177,500</b>	<b>\$1,423,600</b>	<b>\$2,967,600</b>	<b>\$1,275,500</b>
<b>Indirect Annual Costs</b>					
Overhead (60% of labor & Mat'ls)	\$527,000	\$562,800	\$614,400	\$463,900	\$521,000
Administrative Charges (2% of TCI)	\$432,400	\$480,500	\$530,400	\$384,900	\$440,100
Property Taxes (2% TCI)	\$432,400	\$480,500	\$530,400	\$384,900	\$440,100
Insurance (1% TCI)	\$216,200	\$240,200	\$265,200	\$192,500	\$220,000
Capital Recovery (CRF = 0.163)	<u>\$3,523,900</u>	<u>\$3,915,700</u>	<u>\$4,322,400</u>	<u>\$3,136,900</u>	<u>\$3,586,700</u>
<b>Total Indirect Annual Cost</b>	<b>\$5,131,900</b>	<b>\$5,679,700</b>	<b>\$6,262,800</b>	<b>\$4,563,100</b>	<b>\$5,207,900</b>
<b>Total Annualized Cost</b>	<b>\$7,273,800</b>	<b>\$6,857,200</b>	<b>\$7,686,400</b>	<b>\$7,530,700</b>	<b>\$6,483,400</b>
<b>Emission Reductions</b>					
Uncontrolled Emissions tpy	407.70	407.70	407.70	407.70	407.70
Collection & Control Efficiency	88%	88%	81%	81%	86%
Annual Emission Reduction tpy	358.78	358.78	330.24	330.24	350.62
Natural Gas Emissions tpy	7.11	0.36	0.00	0.00	0.00
Net Emission Reduction tpy	351.67	358.42	330.24	330.24	350.62
<b>Cost Effectiveness \$/ton</b>	<b>\$20,700</b>	<b>\$19,100</b>	<b>\$23,300</b>	<b>\$22,800</b>	<b>\$18,500</b>

## **Step 5 – Select BACT**

The lowest evaluated cost effectiveness of \$18,500 per ton exceeds the District's cost effectiveness threshold of \$17,500 per ton for VOC. Therefore, none of the technologically feasible controls is cost effective, and BACT is satisfied with the achieved in practice option: Temperature-controlled open top tank with maximum average fermentation temperature of 95 deg. F.

### **Attachments:**

BACT Attachment A: Eichleay Estimates for Fermentation Controls at Gallo Livingston  
BACT Attachment B: Sizing and Purchase Costs for Control Devices  
BACT Attachment C: Utilities and other Annual Costs

## **BACT Attachment A**

### **Eichleay Estimates for Fermentation Controls at Gallo Livingston**



Eichley Engineers Inc. of California

ESTIMATE SUMMARY SHEET

Client Name: Wine Institute

Estimated By: P.H.M.

Job Number: 30913

**PRELIMINARY ESTIMATE**

Checked By: R.H.

Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	W/O ESCALATION & OWNERS COSTS				GRAND TOTAL
		TOTAL COSTS	RTO-1	RTO-2	RTO-3	
<b>SUMMARY</b>						
2.00	Site Construction	\$1,253,680	\$5,450	\$5,450	\$5,450	\$1,270,030
3.00	Concrete	\$208,450	\$81,500	\$85,500	\$69,500	\$444,950
4.00	Masonry					\$0
5.00	Metals	\$1,499,010	\$395,028	\$361,670	\$275,846	\$2,531,554
6.00	Wood & Plastics					\$0
7.00	Thermal & Moisture Protection					\$0
8.00	Door & Windows					\$0
9.00	Finishes					\$0
10.00	Specialties	\$8,620	\$0	\$0	\$0	\$8,620
11.00	Equipment					\$0
12.00	Furnishings					\$0
13.00	Special Construction					\$0
14.00	Conveying Systems					\$0
15.00	Mechanical HVAC & Plumbing					\$0
16.00	Electrical	\$116,439	\$28,212	\$27,326	\$32,226	\$204,203
17.00	Instruments & Controls	\$340,195	\$199,195	\$199,195	\$199,195	\$937,780
18.00	Process Piping & Equipment	\$1,553,959	\$1,572,913	\$1,438,695	\$1,361,843	\$5,927,410
	<b>Sub Total</b>	<b>\$4,980,353</b>	<b>\$2,282,298</b>	<b>\$2,117,836</b>	<b>\$1,944,080</b>	<b>\$11,324,547</b>
	Tax & Freight	282,779	125,680	113,112	106,828	\$628,398
	General Conditions	\$421,051	\$192,638	\$178,476	\$164,071	\$956,236
	General Contractor Mark-Up	\$478,373	\$220,042	\$204,924	\$187,479	\$1,090,818
	<b>Field Costs - Sub Total</b>	<b>\$6,162,556</b>	<b>\$2,820,657</b>	<b>\$2,614,348</b>	<b>\$2,402,438</b>	<b>\$13,999,999</b>
	Design Fee Allowance	924,383	423,099	392,152	360,366	\$2,100,000
	Construction Management Allowance	\$184,877	\$84,620	\$78,430	\$72,073	\$420,000
	Plan Check & Permit Fee Allowance	\$21,843	\$9,708	\$8,737	\$8,252	\$48,539
	Third Party Inspection Allowance	\$16,382	\$7,281	\$6,553	\$6,189	\$36,404
	Escalation					\$0
	Project Contingency	\$2,070,463	\$920,206	\$828,185	\$782,175	\$4,601,028
	<b>Sub Total</b>	<b>\$9,380,504</b>	<b>\$4,265,569</b>	<b>\$3,928,405</b>	<b>\$3,631,491</b>	<b>\$21,205,969</b>
	Owners Costs					\$0
	Round Off	\$31				\$31
	<b>GRAND TOTAL</b>	<b>\$9,380,535</b>	<b>\$4,265,569</b>	<b>\$3,928,405</b>	<b>\$3,631,491</b>	<b>\$21,206,000</b>

Prepared By:

*P.H.M.*  
6/24/05

Date:

Approved By

*R.N. Wedgers*  
6/24/05

Date:



Eichley Engineers Inc. of California

**ESTIMATE SUMMARY SHEET**

Client Name: Wine Institute

Estimated By: P.H.M.

Job Number: 30913

**PRELIMINARY ESTIMATE**

Checked By: R.H.

Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	W/O Escalation & Owners Costs				TOTAL
		TOTAL MHRS	TOTAL COSTS			
			LABOR	MAT'L	SUBCON.	
<b>SUMMARY</b>						
2.00	Site Construction		\$0	\$0	\$1,270,030	\$1,270,030
3.00	Concrete		\$0	\$0	\$444,950	\$444,950
4.00	Masonry		\$0	\$0	\$0	\$0
5.00	Metals		\$711,959	\$1,779,595	\$40,000	\$2,531,554
6.00	Wood & Plastics		\$0	\$0	\$0	\$0
7.00	Thermal & Moisture Protection		\$0	\$0	\$0	\$0
8.00	Door & Windows		\$0	\$0	\$0	\$0
9.00	Finishes		\$0	\$0	\$0	\$0
10.00	Specialties		\$260	\$0	\$8,360	\$8,620
11.00	Equipment		\$0	\$0	\$0	\$0
12.00	Furnishings		\$0	\$0	\$0	\$0
13.00	Special Construction		\$0	\$0	\$0	\$0
14.00	Conveying Systems		\$0	\$0	\$0	\$0
15.00	Mechanical HVAC & Plumbing		\$0	\$0	\$0	\$0
16.00	Electrical		\$65,016	\$85,787	\$53,400	\$204,203
17.00	Instruments & Controls		\$140,550	\$672,230	\$125,000	\$937,780
18.00	Process Piping & Equipment		\$1,555,068	\$3,175,093	\$1,197,250	\$5,927,411
<b>Sub Total</b>			<b>\$2,472,853</b>	<b>\$5,712,705</b>	<b>\$3,138,990</b>	<b>\$11,324,548</b>
	Tax & Freight (11%)					\$628,398
	General Conditions (8%)					\$956,236
	General Contractor Mark-Up (10%)					\$1,090,818
<b>Field Costs - Sub Total</b>						<b>\$13,999,999</b>
	Design Fee Allowance (15%)					\$2,100,000
	Construction Management Allowance (3%)					\$420,000
	Plan Check & Permit Fee Allowance (2%)					\$48,539
	Third Party Inspection Allowance (1.5%)					\$36,404
	Escalation					
	Project Contingency					\$4,601,028
<b>Sub Total</b>						<b>\$21,205,970</b>
	Owners Costs					\$0
	Round Off					\$30
<b>GRAND TOTAL</b>						<b>\$21,206,000</b>

Prepared By:

*[Signature]*  
Date: 6/24/05

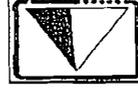
Approved By:

*[Signature]*  
Date: 6/24/05

Client Name: Wine Institute

Job Number: 30913

Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters



Eichelberger Engineers Inc. of CA

**PRELIMINARY ESTIMATE**

Estimated By: P.H.M.  
 Checked By: R.H.  
 Rev. 2 Date: 6/24/05

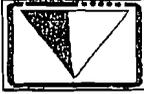
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CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/UNIT	UNIT COSTS			TOTAL	LABOR	MATL	SUBCON	TOTAL
					S/HR	MATL	SUBCON					
020 - Site Construction												
	1 Excavation allowance for voc-1		cy		50.00		50.00					50.00
	2 Excavation allowance for voc-2	109	cy		50.00		50.00					5,450
	3 Excavation allowance for voc-3	109	cy		50.00		50.00					5,450
	4 Excavation allowance for voc-4	109	cy		50.00		50.00					5,450
	1 Install and compact clean fill for VOC area	25000	cy		35.00		35.00					875,000
	1 Allowance to demo road	1780	sy		6.00		6.00					10,680
	1 Install asphalt in new expanded area including road	92000	sf		4.00		4.00					368,000
											1,270,030	1,270,030
											TOTAL	TOTAL



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**PRELIMINARY ESTIMATE**

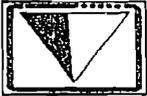
Estimated By: P.H.M.  
 Checked By: R.H.  
 Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/UNIT	TOTAL MHR	UNIT COSTS			TOTAL
						\$ / hr	MATL	SUBCON	
050 - Metals									
VOC - 1 Duct Section									
	1 Fab & install main duct rack frames ( inside unit - 45 ft)	21	ea	20	420	65.00	6,500.00	7,800.00	163,800
	1 Fab & install main duct rack top connection members	640	ft	0.75	480	65.00	45.00	93.75	60,000
	1 Fab & install main duct rack bottom connection members	640	ft	0.75	480	65.00	45.00	93.75	60,000
	1 Fab & install main duct rack top cross bracing	80	ea	6	480	65.00	690.00	1,080.00	86,400
	1 Fab & install main duct rack lower cross bracing	40	ea	6	240	65.00	950.00	1,340.00	53,600
	1 Fab & install main duct rack frames ( outside unit - 25 ft)	23	ea	10	230	65.00	4,420.00	5,070.00	116,610
	1 Fab & install main duct rack top connection members	680	ft	0.5	340	65.00	45.00	77.50	52,700
	1 Fab & install main duct rack top cross bracing	92	ea	4	368	65.00	600.00	860.00	79,120
	1 Fab & install main duct rack lower cross bracing	22	ea	4	88	65.00	700.00	960.00	21,120
	1 Fab & install main duct rack frames ( VOC area )	16	ea	4	64	65.00	1,430.00	1,690.00	27,040
	3' wide grating on main rack	2700	sf	0.15	405	65.00	19.00	28.75	77,625
	1 handrails	1800	lf	0.3	540	65.00	75.00	94.50	170,100
	1 Allowance for grating from main rack to existing catwalks	1	lot	50	50	65.00	5,000.00	8,250.00	8,250
	1 Allowance for caged ladders	200	h	0.5	100	65.00	50.00	82.50	16,500
	15 x 8 towers	5	ea	80	400	65.00	14,000.00	19,200.00	96,000
	15' top level connection beams	8	ea	8	64	65.00	550.00	1,070.00	8,560
	1 cross bracing on top open sections	4	ea	8	32	65.00	300.00	820.00	3,280
	15 x 15 towers	5	ea	80	400	65.00	18,000.00	23,200.00	116,000
	15' top level connection beams	8	ea	8	64	65.00	550.00	1,070.00	8,560
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Rev. 2 Date: 6/24/05

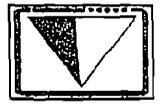
CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/UNIT	TOTAL MHRS	UNIT COSTS			TOTAL
						MAT'L	SUBCON.	LABOR	
						TOTAL COSTS			TOTAL
2	15 x 15 towers	4 ea		20	80	65.00	20,000.00	21,300.00	85,200
2	20' top level connection beams	6 ea		2	12	65.00	700.00	830.00	4,980
2	cross bracing on top open sections	3 ea		2	6	65.00	400.00	530.00	1,590
2	15 x 15 towers	3 ea		20	60	65.00	20,000.00	21,300.00	63,900
2	15' top level connection beams	4 ea		2	8	65.00	550.00	680.00	2,720
2	cross bracing on top open sections	2 ea		2	4	65.00	300.00	430.00	860
2	15 x 20 towers - shared vertical columns	2 ea		20	40	65.00	20,000.00	21,300.00	42,600
2	15 x 15 tower	1 ea		20	20	65.00	10,000.00	11,300.00	11,300
2	3' wide grating on walkway 3, 4' wide on walkway 4	945 sf		0.15	141.75	65.00	19,000.00	28,750	27,169
2	3' wide grating to tanks	360 sf		0.15	54	65.00	19,000.00	28,750	10,350
2	handrails	820 lf		0.3	246	65.00	75,000.00	94,500	77,490
2	grating to existing catwalks	165 sf		0.15	24.75	65.00	19,000.00	28,750	4,744
VOC-2 Duct Section									
3	20 x 8 towers	3 ea		20	50	65.00	15,000.00	16,300.00	48,900
3	20' top level connection beams	6 ea		2	12	65.00	700.00	830.00	4,980
3	cross bracing on top open sections	3 ea		2	6	65.00	400.00	530.00	1,590
3	15 x 8 towers	1 ea		20	20	65.00	14,000.00	15,300.00	15,300
3	15 x 15 towers	5 ea		20	100	65.00	18,000.00	19,300.00	96,500
3	15' top level connection beams	8 ea		2	16	65.00	550.00	680.00	5,440
3	cross bracing on top open sections	4 ea		2	8	65.00	300.00	430.00	1,720
3	3' wide grating on walkway 6 & 7	810 sf		0.15	121.5	65.00	19,000.00	28,750	23,288
3	3' wide grating to tanks	510 sf		0.15	76.5	65.00	19,000.00	28,750	14,663
3	handrails	920 lf		0.3	276	65.00	75,000.00	94,500	86,940
3	grating to existing catwalks	60 sf		0.15	9	65.00	19,000.00	28,750	1,725
VOC-3 Duct Section									
3	20 x 8 towers	3 ea		20	50	65.00	15,000.00	16,300.00	48,900
3	20' top level connection beams	6 ea		2	12	65.00	700.00	830.00	4,980
3	cross bracing on top open sections	3 ea		2	6	65.00	400.00	530.00	1,590
3	15 x 8 towers	1 ea		20	20	65.00	14,000.00	15,300.00	15,300
3	15 x 15 towers	5 ea		20	100	65.00	18,000.00	19,300.00	96,500
3	15' top level connection beams	8 ea		2	16	65.00	550.00	680.00	5,440
3	cross bracing on top open sections	4 ea		2	8	65.00	300.00	430.00	1,720
3	3' wide grating on walkway 6 & 7	810 sf		0.15	121.5	65.00	19,000.00	28,750	23,288
3	3' wide grating to tanks	510 sf		0.15	76.5	65.00	19,000.00	28,750	14,663
3	handrails	920 lf		0.3	276	65.00	75,000.00	94,500	86,940
3	grating to existing catwalks	60 sf		0.15	9	65.00	19,000.00	28,750	1,725
TOTAL									

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/UNIT	TOTAL MHR	UNIT COSTS			TOTAL COSTS			
						\$ / hr	MATL	SUBCON	TOTAL	LABOR	MATL	SUBCON
	VOC-4 Duct Section											
4	15 x 15 towers	5 ea		20	100	65.00	18,000.00	19,300.00	6,500	90,000		96,500
4	15' top level connection beams	8 ea		2	16	65.00	550.00	680.00	1,040	4,400		5,440
4	cross bracing on top open sections	4 ea		2	8	65.00	300.00	430.00	520	1,200		1,720
4	shared end section with voc-2	1 ea		40	40	65.00	10,000.00	12,600.00	2,600	10,000		12,600
4	3' wide grating on walkway 7	405 sf		0.15	60.75	65.00	19,000	28,750	3,949	7,695		11,644
4	3' wide grating to tanks	450 sf		0.15	67.5	65.00	19,000	28,750	4,388	8,550		12,938
4	handrails	840 lf		0.3	252	65.00	75,000	94,500	16,380	63,000		79,380
ALL	Allowance for additional supports & grating	1 lot		500	500	65.00	70,000.00	102,500	32,500	70,000		102,500
1	Crane to install main rack outside plant area	3 wks					2,000.00	2,000.00		6,000		5,000
1	(40 ton)	1 lot		120	120	75.00	9,000.00	9,000.00	9,000			9,000
1	Allowance for small cranes to position steel (3)	6 mo		160	960	75.00	2,000.00	14,000.00	72,000	12,000		84,000
2	Allowance for small cranes to position steel (2)	2 mo		160	320	75.00	2,000.00	14,000.00	24,000	4,000		28,000
3	Allowance for small cranes to position steel (2)	2 mo		160	320	75.00	2,000.00	14,000.00	24,000	4,000		28,000
4	Allowance for small cranes to position steel (2)	2 mo		160	320	75.00	2,000.00	14,000.00	24,000	4,000		28,000
ALL	allowance for overtime to build structures	1 lot		1000	1000	25.00	25,000.00	25,000.00	25,000			25,000
	to work around helicopter usage											
ALL	Allowance to touch up paint	1 lot					10,000.00	10,000.00		10,000		10,000
<b>TOTAL - Metals</b>												
11255												
714,959 1,779,595 40,000 2,531,554												

Estimated By: P.H.M.  
 Checked By: R.H.  
 Rev. 2 Date: 6/24/05

**PRELIMINARY ESTIMATE**

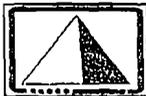
Engineers Inc. of CA



Eichle

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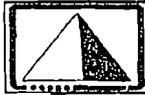
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						\$ / Hr	MAT'L	SUBCON.	TOTAL	LABOR	MAT'L	SUBCON.	
	016 - Electrical												
	POWER DISTRIBUTION												
	VOC -1												
1	DISCONNECT SWITCH FUSABLE, 400A, 600V, 3PH, 3W	1	EA	10	10	75.00	2,025.00		2,775.00	750	2,025		2,775
1	#600 MCM CONDUCTOR	1.2	CLF	6.154	7	75.00	475.00		936.55	554	570		1,124
1	#2 GROUND	5	CLF	1.778	9	75.00	47.00		180.35	667	235		902
1	3" RIGID ALUMINUM	40	LF	0.18	7	75.00	9.45		22.95	540	378		918
1	3" IN-LINE PULL FITTINGS	2	EA	2.7	5	75.00	415.00		617.50	405	830		1,235
1	16X16X6 PULL BOX	1	EA	6.15	6	75.00	810.00		1,271.25	461	810		1,271
1	3"90-DEGREE RGS,PVC COATED	2	EA	1.9	4	75.00	69.00		211.50	285	138		423
1	FUSE 400A	3	EA	0.333	1	75.00	130.00		154.98	75	390		465
1	3000A main switchboard	1	EA	28.57	29	75.00	4,675.00		6,817.75	2,143	4,675		6,818
1	3000A 600V CIRCUIT BREAKER	1	EA	36.36	36	75.00	24,300.00		27,027.00	2,727	24,300		27,027
1	BUS CIRCUIT BREAKER 400A 480V 3PH	1	EA	3	3	75.00	3,100.00		3,325.00	225	3,100		3,325
1	MISC SUPPORTS, FITTINGS, TERMINATIONS	1	LOT							1,766	7,490		9,257
1	CHECKOUT AND TESTING	1	LOT	100	100	75.00			7,500.00	7,500			7,500
	VOC -2												
2	DISCONNECT SWITCH FUSABLE, 600A, 600V, 3PH, 3W	1	EA	16	16	75.00	3,000.00		4,200.00	1,200	3,000		4,200
2	#600 MCM CONDUCTOR	2.4	CLF	7.3	18	75.00	585.00		1,132.50	1,314	1,404		2,718
2	#2 GROUND	5	CLF	1.778	9	75.00	47.00		180.35	667	235		902
2	3" RIGID ALUMINUM	80	LF	0.18	14	75.00	9.45		22.95	1,080	756		1,836
2	3" IN-LINE PULL FITTINGS	2	EA	2.7	5	75.00	415.00		617.50	405	830		1,235
2	16X16X6 PULL BOX	1	EA	6.15	6	75.00	810.00		1,271.25	461	810		1,271
2	3"90-DEGREE RGS,PVC COATED	2	EA	1.9	4	75.00	69.00		211.50	285	138		423
2	FUSE 400A	3	EA	0.333	1	75.00	150.00		174.98	75	450		525
2	BUS CIRCUIT BREAKER 400A 480V 3PH	1	EA	5	5	75.00	3,775.00		4,150.00	375	3,775		4,150
2	MISC SUPPORTS, FITTINGS, TERMINATIONS	1	LOT							1,172	2,280		3,452
2	CHECKOUT AND TESTING	1	LOT	100	100	75.00			7,500.00	7,500			7,500



**Eichl** /  
Engineers Inc. of CA

Client Name: Wine Institute  
 Job Number: 30913  
 Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

**PRELIMINARY ESTIMATE**

Estimated By: P.H.M.  
 Checked By: R.H.  
 Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHR	UNIT COSTS				TOTAL COSTS			TOTAL
						\$ / Hr	MAT'L	SUBCON.	TOTAL	LABOR	MAT'L	SUBCON.	
	VOC -3												
3	DISCONNECT SWITCH FUSABLE, 400A, 600V, 3PH, 3W	1	EA	10	10	75.00	2,025.00		2,775.00	750	2,025		2,775
3	#600 MCM CONDUCTOR	3.6	CLF	6.154	22	75.00	475.00		936.55	1,662	1,710		3,372
3	#2 GROUND	5	CLF	1.778	9	75.00	47.00		180.35	667	235		902
3	3" RIGID ALUMINUM	120	LF	0.18	22	75.00	9.45		22.95	1,620	1,134		2,754
3	3" IN-LINE PULL FITTINGS	2	EA	2.7	5	75.00	415.00		617.50	405	830		1,235
3	16X16X6 PULL BOX	1	EA	6.15	6	75.00	810.00		1,271.25	461	810		1,271
3	3"90-DEGREE RGS,PVC COATED	2	EA	1.9	4	75.00	69.00		211.50	285	138		423
3	FUSE 400A	3	EA	0.333	1	75.00	130.00		154.98	75	390		465
3	BUS CIRCUIT BREAKER 400A 480V 3PH	1	EA	3	3	75.00	3,100.00		3,325.00	225	3,100		3,325
3	MISC SUPPORTS, FITTINGS, TERMINATIONS	1	LOT							1,230	2,074		3,304
3	CHECKOUT AND TESTING	1	LOT	100	100	75.00			7,500.00	7,500			7,500
	VOC -4												
4	DISCONNECT SWITCH FUSABLE, 400A, 600V, 3PH, 3W	1	EA	10	10	75.00	2,025.00		2,775.00	750	2,025		2,775
4	#600 MCM CONDUCTOR	6	CLF	6.154	37	75.00	475.00		936.55	2,769	2,850		5,619
4	#2 GROUND	5	CLF	1.778	9	75.00	47.00		180.35	667	235		902
4	3" RIGID ALUMINUM	200	LF	0.18	36	75.00	9.45		22.95	2,700	1,890		4,590
4	3" IN-LINE PULL FITTINGS	2	EA	2.7	5	75.00	415.00		617.50	405	830		1,235
4	16X16X6 PULL BOX	1	EA	6.15	6	75.00	810.00		1,271.25	461	810		1,271
4	3"90-DEGREE RGS,PVC COATED	2	EA	1.9	4	75.00	69.00		211.50	285	138		423
4	FUSE 400A	3	EA	0.333	1	75.00	130.00		154.98	75	390		465
4	BUS CIRCUIT BREAKER 400A 480V 3PH	1	EA	3	3	75.00	3,100.00		3,325.00	225	3,100		3,325
4	MISC SUPPORTS, FITTINGS, TERMINATIONS	1	LOT							1,667	2,454		4,121
4	CHECKOUT AND TESTING	1	LOT	100	100	75.00			7,500.00	7,500			7,500



**Eichle**  
Engineers Inc. of CA

Client Name: Wine Institute

Job Number: 30913

Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

**PRELIMINARY ESTIMATE**

Estimated By: P.H.M.

Checked By: R.H.

Rev. 2 Date: 6/24/05

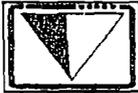
CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS				TOTAL COSTS			TOTAL
						\$ / Hr	MAT'L	SUBCON.	TOTAL	LABOR	MAT'L	SUBCON.	
1	Allowance for installing lighting at VOC areas	1	lot					40,000.00	40,000.00			40,000	40,000
1	Allowance for installing lighting on main duct	670	ft					20.00	20.00			13,400	13,400
<b>TOTAL - Electrical</b>					789					65,016	85,787	53,400	204,203



Client Name: Wine Institute

Job Number: 30913

Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters



Eichleay Engineers Inc. of CA

**PRELIMINARY ESTIMATE**

Estimated By: P.H.M.  
Checked By: R.H.  
Rev. 2 Date: 6/24/05

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CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/UNIT	TOTAL MHR	UNIT COSTS			TOTAL
						\$ / Hr	MATL	SUBCON	

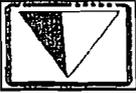
	1	Install PC and software for monitoring system	1	lot	13,000	13,000			13,000
	.1	Software design, integration and testing	1	lot	100,000	100,000			100,000
	1	Installation of network & system	1	lot	25,000	25,000			25,000

TOTAL - Instruments & Controls									
									187.4
									125,000
									672,230
									937,780

Client Name: Wine Institute

Job Number: 30913

Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters



Engineers Inc. of CA

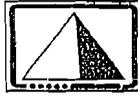
**PRELIMINARY ESTIMATE**

Rev. 2 Date: 6/24/05

Checked By: R.H.

Estimated By: P.H.M.

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/UNIT	TOTAL MHRS	UNIT COSTS			TOTAL COSTS			
						S / Hr	MATL	SUBCON	TOTAL	LABOR	MATL	SUBCON
	018 - Process Piping & Equipment											
	VOC Control Equipment											
1	VOC-1 16,000 scfm RTO unit	1	ea	200	200	65.00	416,000	429,000	13,000	416,000		429,000
2	VOC-2 22,000 scfm RTO unit	1	ea	250	250	65.00	503,000	519,250	16,250	503,000		519,250
3	VOC-3 13,000 scfm RTO unit	1	ea	200	200	65.00	367,000	380,000	13,000	367,000		380,000
4	VOC-4 13,000 scfm RTO unit	1	ea	200	200	65.00	367,000	380,000	13,000	367,000		380,000
all	Adder for RTO for higher SP blower & O2 control loop	4	ea				35,000.00	35,000.00		140,000		140,000
all	Allowance for stainless stack & alum. Grating & handrails	4	ea				15,000.00	15,000.00		60,000		60,000
	Install refractory in VOC's											
1	VOC-1	1	lot	80	80	70.00	5,600.00	5,600.00	5,600			5,600
2	VOC-2	1	lot	100	100	70.00	7,000.00	7,000.00	7,000			7,000
3	VOC-3	1	lot	80	80	70.00	5,600.00	5,600.00	5,600			5,600
4	VOC-4	1	lot	80	80	70.00	5,600.00	5,600.00	5,600			5,600
	Knock out vessels											
1	KO Vessel for VOC-1 - 5000 gal	1	ea	20	20	65.00	37,000.00	38,300.00	1,300	37,000		38,300
2	KO Vessel for VOC-2 - 7000 gal	1	ea	20	20	65.00	45,000.00	46,300.00	1,300	45,000		46,300
3	KO Vessel for VOC-3 - 4000 gal	1	ea	20	20	65.00	33,000.00	34,300.00	1,300	33,000		34,300
4	KO Vessel for VOC-4 - 4000 gal	1	ea	20	20	65.00	33,000.00	34,300.00	1,300	33,000		34,300
	Nozzie Fabrication/Installation at each tank											
all	12" Nozzie(Fabricate)	4	ea	240	240	65.00	215,000	475,000	15,600	12,900		28,500
all	Machine Cut Hole(Specialty Service)	2	ea	120	120	65.00	20,000	750,000	7,800	1,200	36,000	45,000
all	12" Nozzie(Install)	4	ea	240	240	65.00	260,000	260,000	15,600			15,600
all	2" Nozzie(Fabricate)	1.5	ea	90	90	65.00	40,000	137,500	5,850	2,400		8,250
all	Drill Hole W/Hole Saw Auger	1	ea	60	60	65.00	65,000	65,000	3,900			3,900
all	2" Nozzie(Install)	3	ea	180	180	65.00	195,000	195,000	11,700			11,700
	TOTAL											



**Eichle**  
Engineers Inc. of CA

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Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

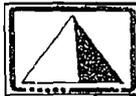
**PRELIMINARY ESTIMATE**

Estimated By: P.H.M.

Checked By: R.H.

Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/UNIT	TOTAL MHRS	UNIT COSTS				TOTAL COSTS			TOTAL
						\$ / Hr	MAT'L	SUBCON.	TOTAL	LABOR	MAT'L	SUBCON.	
all	36" Nozzle(Fabricate)	60	ea	8	480	65.00	350.00		870.00	31,200	21,000		52,200
all	Machine Cut Hole(Specialty Service)	60	ea	4	240	65.00	20.00	600.00	880.00	15,600	1,200	36,000	52,800
all	36" Nozzle(Install)	60	ea	10	600	65.00			650.00	39,000			39,000
	Allowance for passivation												
all	install gel	180	ea	4	720	65.00	150.00		410.00	46,800	27,000		73,800
all	neutralize & flush & dry	180	ea	2	360	65.00	20.00		150.00	23,400	3,600		27,000
all	Insulation Removal	60	ea	2	120	65.00			130.00	7,800			7,800
all	Scaffolding - 38' tanks(Install)	12	ea	24	288	65.00			1,560.00	18,720			18,720
ALL	Scaffolding - 24' to 28' tanks(Install)	48	ea	20	960	65.00			1,300.00	62,400			62,400
all	Scaffolding - 38' tanks(Remove)	12	ea	12	144	65.00			780.00	9,360			9,360
all	Scaffolding - 24' to 28' tanks(Remove)	48	ea	10	480	65.00			650.00	31,200			31,200
	Ducting Installation												
1	VOC-1												
1	10" Duct	36	ft				54.00		54.00		1,944		1,944
1	10" Duct misc. fittings	1	lot				800.00		800.00		800		800
1	Bolt up	10	ea	1.5	15	65.00			97.50	975			975
1	Handle	9	ea	2.08	18.72	65.00			135.20	1,217			1,217
1	Install	2	lot	2	4	65.00			130.00	260			260
1	12" Duct	40	ft				62.00		62.00		2,480		2,480
1	12" Duct misc. fittings	1	lot				1,000.00		1,000.00		1,000		1,000
1	Bolt up	12	ea	1.5	18	65.00			97.50	1,170			1,170
1	Handle	10	ea	2.08	20.8	65.00			135.20	1,352			1,352
1	Install	2	lot	2	4	65.00			130.00	260			260
1	16" Duct	24	ft				77.00		77.00		1,848		1,848
1	16" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
1	Bolt up	8	ea	2	16	65.00			130.00	1,040			1,040



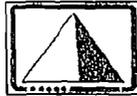
**Eichle**  
Engineers Inc. of CA

Client Name: Wine Institute  
Job Number: 30913  
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

**PRELIMINARY ESTIMATE**

Estimated By: P.H.M.  
Checked By: R.H.  
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS				TOTAL COSTS			TOTAL
						\$ / Hr	MAT'L	SUBCON.	TOTAL	LABOR	MAT'L	SUBCON.	
1	Handle	6	ea	3	18	65.00			195.00	1,170			1,170
1	Install	2	lot	2	4	65.00			130.00	260			260
1	18" Duct	45	ft				86.00		86.00		3,870		3,870
1	18" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
1	Bolt up	13	ea	3	39	65.00			195.00	2,535			2,535
1	Handle	11	ea	3.52	38.72	65.00			228.80	2,517			2,517
1	Install	3	lot	2	6	65.00			130.00	390			390
1	20" Duct	40	ft				92.00		92.00		3,680		3,680
1	20" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
1	Bolt up	12	ea	4	48	65.00			260.00	3,120			3,120
1	Handle	10	ea	4.6	46	65.00			299.00	2,990			2,990
1	Install	3	lot	3	9	65.00			195.00	585			585
1	22" Duct	60	ft				99.00		99.00		5,940		5,940
1	22" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
1	Bolt up	18	ea	4	72	65.00			260.00	4,680			4,680
1	Handle	16	ea	4.6	73.6	65.00			299.00	4,784			4,784
1	Install	4	lot	3	12	65.00			195.00	780			780
1	24" Duct	18	ft				106.00		106.00		1,908		1,908
1	24" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
1	Bolt up	6	ea	4	24	65.00			260.00	1,560			1,560
1	Handle	5	ea	4.6	23	65.00			299.00	1,495			1,495
1	Install	1	lot	3	3	65.00			195.00	195			195
1	28" Duct	85	ft				119.00		119.00		10,115		10,115
1	28" Duct misc. fittings	1	lot				4,000.00		4,000.00		4,000		4,000
1	Bolt up	22	ea	5.5	121	65.00			357.50	7,865			7,865
1	Handle	21	ea	5.32	111.72	65.00			345.80	7,262			7,262
1	Install	5	lot	3	15	65.00			195.00	975			975
1	36" Duct	385	ft				199.00		199.00		76,615		76,615
1	36" Duct misc. fittings	1	lot				20,000.00		20,000.00		20,000		20,000



**Eichler**  
Engineers Inc. of CA

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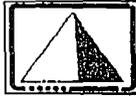
**PRELIMINARY ESTIMATE**

Estimated By: P.H.M.

Checked By: R.H.

Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS				TOTAL COSTS			TOTAL
						\$ / Hr	MAT'L	SUBCON.	TOTAL	LABOR	MAT'L	SUBCON.	
1	Bolt up	100	ea	6.5	650	65.00			422.50	42,250			42,250
1	Handle	96	ea	7.2	691.2	65.00			468.00	44,928			44,928
1	Install	20	lot	3	60	65.00			195.00	3,900			3,900
	VOC-2												
2	12" Duct	75	ft					62.00	62.00		4,650		4,650
2	12" Duct misc. fittings	1	lot					1,000.00	1,000.00		1,000		1,000
2	Bolt up	21	ea	1.5	31.5	65.00			97.50	2,048			2,048
2	Handle	19	ea	2.08	39.52	65.00			135.20	2,569			2,569
2	Install	4	lot	2	8	65.00			130.00	520			520
2	18" Duct	65	ft					86.00	86.00		5,590		5,590
2	18" Duct misc. fittings	1	lot					2,000.00	2,000.00		2,000		2,000
2	Bolt up	19	ea	3	57	65.00			195.00	3,705			3,705
2	Handle	17	ea	3.52	59.84	65.00			228.80	3,890			3,890
2	Install	3	lot	2	6	65.00			130.00	390			390
2	22" Duct	50	ft					99.00	99.00		4,950		4,950
2	22" Duct misc. fittings	1	lot					2,000.00	2,000.00		2,000		2,000
2	Bolt up	15	ea	4	60	65.00			260.00	3,900			3,900
2	Handle	13	ea	4.6	59.8	65.00			299.00	3,887			3,887
2	Install	3	lot	3	9	65.00			195.00	585			585
2	24" Duct	35	ft					106.00	106.00		3,710		3,710
2	24" Duct misc. fittings	1	lot					3,000.00	3,000.00		3,000		3,000
2	Bolt up	11	ea	4	44	65.00			260.00	2,860			2,860
2	Handle	9	ea	4.6	41.4	65.00			299.00	2,691			2,691
2	Install	2	lot	3	6	65.00			195.00	390			390
2	28" Duct	15	ft					119.00	119.00		1,785		1,785
2	28" Duct misc. fittings	1	lot					2,000.00	2,000.00		2,000		2,000
2	Bolt up	5	ea	5.5	27.5	65.00			357.50	1,788			1,788
2	Handle	4	ea	5.32	21.28	65.00			345.80	1,383			1,383



**Eichle,**  
Engineers Inc. of CA

Client Name: Wine Institute  
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Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

**PRELIMINARY ESTIMATE**

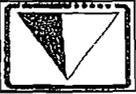
Estimated By: P.H.M.  
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Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS				TOTAL COSTS			TOTAL
						S/ Hr	MAT'L	SUBCON.	TOTAL	LABOR	MAT'L	SUBCON.	
2	Install	1	lot	3	3	65.00			195.00	195			195
2	30" Duct	25	ft				128.00		128.00		3,200		3,200
2	30" Duct misc. fittings	1	lot				2,000.00		2,000.00		2,000		2,000
2	Bolt up	8	ea	5.5	44	65.00			357.50	2,860			2,860
2	Handle	6	ea	5.32	31.92	65.00			345.80	2,075			2,075
2	Install	1	lot	3	3	65.00			195.00	195			195
2	32" Duct	265	ft				177.00		177.00		46,905		46,905
2	32" Duct misc. fittings	1	lot				4,500.00		4,500.00		4,500		4,500
2	Bolt up	68	ea	6	408	65.00			390.00	26,520			26,520
2	Handle	66	ea	6	396	65.00			390.00	25,740			25,740
2	Install	13	lot	3	39	65.00			195.00	2,535			2,535
2	42" Duct	415	ft				242.00		242.00		100,430		100,430
2	42" Duct misc. fittings	1	lot				25,000.00		25,000.00		25,000		25,000
2	Bolt up	115	ea	6.5	747.5	65.00			422.50	48,588			48,588
2	Handle	104	ea	7.12	740.48	65.00			462.80	48,131			48,131
2	Install	21	lot	4	84	65.00			260.00	5,460			5,460
	VOC-3												
3	6" Duct	25	ft				38.00		38.00		950		950
3	6" Duct misc. fittings	1	lot				500.00		500.00		500		500
3	Bolt up	7	ea	1	7	65.00			65.00	455			455
3	Handle	6	ea	1.4	8.4	65.00			91.00	546			546
3	Install	1	lot	1.5	1.5	65.00			97.50	98			98
3	10" Duct	35	ft				54.00		54.00		1,890		1,890
3	10" Duct misc. fittings	1	lot				1,000.00		1,000.00		1,000		1,000
3	Bolt up	11	ea	1.5	16.5	65.00			97.50	1,073			1,073
3	Handle	9	ea	1.72	15.48	65.00			111.80	1,006			1,006
3	Install	2	lot	2	4	65.00			130.00	260			260
3	12" Duct						62.00		62.00		4,340		4,340

Client Name: Wine Institute

Job Number: 30913

Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters



Engineers Inc. of CA

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**PRELIMINARY ESTIMATE**

Estimated By: P.H.M.

Checked By: R.H.

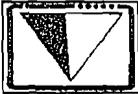
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/UNIT	MHR/UNIT	UNIT COSTS			TOTAL COSTS				
						\$/Hr	MAT'L	SUBCON.	TOTAL	LABOR	MAT'L	SUBCON.	
3	12" Duct misc. fittings	1	lot				1,000.00			1,000.00			1,000
3	Bolt up	20	ea	1.5	30	65.00	97.50		1,950				1,950
3	Handle	18	ea	2.08	37.44	65.00	135.20		2,434				2,434
3	Install	3	lot		2	65.00	130.00		390				390
3	16" Duct	48	ft			69.00	69.00		3,312				3,312
3	16" Duct misc. fittings	1	lot			1,500.00	1,500.00		1,500				1,500
3	Bolt up	14	ea	2.5	35	65.00	162.50		2,275				2,275
3	Handle	12	ea	3	36	65.00	195.00		2,340				2,340
3	Install	3	lot		2	65.00	130.00		390				390
3	18" Duct	22	ft			86.00	86.00		1,892				1,892
3	18" Duct misc. fittings	1	lot			2,000.00	2,000.00		2,000				2,000
3	Bolt up	8	ea	3	24	65.00	195.00		1,560				1,560
3	Handle	6	ea	3.52	21.12	65.00	228.80		1,373				1,373
3	Install	1	lot		2	65.00	130.00		130				130
3	20" Duct	8	ft			92.00	92.00		736				736
3	20" Duct misc. fittings	1	lot			2,000.00	2,000.00		2,000				2,000
3	Bolt up	3	ea	4	12	65.00	260.00		780				780
3	Handle	2	ea	4.6	9.2	65.00	299.00		598				598
3	Install	1	lot		3	65.00	195.00		195				195
3	22" Duct	28	ft			99.00	99.00		2,772				2,772
3	22" Duct misc. fittings	1	lot			2,000.00	2,000.00		2,000				2,000
3	Bolt up	9	ea	4	36	65.00	260.00		2,340				2,340
3	Handle	7	ea	4.6	32.2	65.00	299.00		2,093				2,093
3	Install	2	lot		3	65.00	195.00		390				390
3	24" Duct	20	ft			106.00	106.00		2,120				2,120
3	24" Duct misc. fittings	1	lot			3,000.00	3,000.00		3,000				3,000
3	Bolt up	7	ea	4	28	65.00	260.00		1,820				1,820
3	Handle	5	ea	4.6	23	65.00	299.00		1,495				1,495
3	Install												
TOTAL													

Client Name: Wine Institute

Job Number: 30913

Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters



Eichler Engineers Inc. of CA

**PRELIMINARY ESTIMATE**

Rev. 2 Date: 6/24/05

Checked By: R.H.

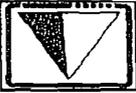
Estimated By: P.H.M.

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/UNIT	TOTAL MHR	UNIT COSTS			TOTAL COSTS			
						\$ / HR	MATL	SUBCON	TOTAL	LABOR	MATL	SUBCON
326"	Duct	8 ft				114.00			114.00			912
326"	Duct misc. fittings	1 lot				2,000.00			2,000.00			2,000
3 Bolt up		3 ea		5	15	65.00			325.00			975
3 Handle		2 ea		4.72	9.44	65.00			306.80			614
3 Install		1 lot		3	3	65.00			195.00			195
328"	Duct	80 ft				119.00			119.00			9,520
328"	Duct misc. fittings	1 lot				3,000.00			3,000.00			3,000
3 Bolt up		22 ea		5.5	121	65.00			357.50			7,865
3 Handle		20 ea		5.32	106.4	65.00			345.80			6,916
3 Install		4 lot		3	12	65.00			195.00			780
322"	Duct	765 ft				177.00			177.00			135,405
322"	Duct misc. fittings	1 lot				4,500.00			4,500.00			4,500
3 Bolt up		204 ea		6	1224	65.00			390.00			79,560
3 Handle		192 ea		6	1152	65.00			390.00			74,880
3 Install		38 lot		3	114	65.00			195.00			7,410
VOC-4												
410"	Duct	52 ft				54.00			54.00			2,808
410"	Duct misc. fittings	1 lot				1,000.00			1,000.00			1,000
4 Bolt up		15 ea		1.5	22.5	65.00			97.50			1,463
4 Handle		13 ea		1.72	22.36	65.00			111.80			1,453
4 Install		2 lot		2	4	65.00			130.00			260
412"	Duct	52 ft				62.00			62.00			3,224
412"	Duct misc. fittings	1 lot				1,000.00			1,000.00			1,000
4 Bolt up		15 ea		1.5	22.5	65.00			97.50			1,463
4 Handle		13 ea		1.72	22.36	65.00			111.80			1,453
4 Install		2 lot		2	4	65.00			130.00			260
412"	Duct	52 ft				62.00			62.00			3,224
412"	Duct misc. fittings	1 lot				1,000.00			1,000.00			1,000
4 Bolt up		15 ea		1.5	22.5	65.00			97.50			1,463
4 Handle		13 ea		1.72	22.36	65.00			111.80			1,453
4 Install		2 lot		2	4	65.00			130.00			260
412"	Duct	52 ft				62.00			62.00			3,224
412"	Duct misc. fittings	1 lot				1,000.00			1,000.00			1,000
4 Bolt up		15 ea		1.5	22.5	65.00			97.50			1,463
4 Handle		13 ea		1.72	22.36	65.00			111.80			1,453
4 Install		2 lot		2	4	65.00			130.00			260
416"	Duct	38 ft				77.00			77.00			2,926
416"	Duct misc. fittings	1 lot				2,000.00			2,000.00			2,000
TOTAL												

Client Name: Wine Institute

Job Number: 30913

Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters



Engineers Inc. of CA

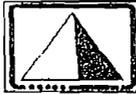
**PRELIMINARY ESTIMATE**

Estimated By: P.H.M.

Checked By: R.H.

Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/	TOTAL	UNIT COSTS			TOTAL COSTS		
						\$ / Hr	MATL	SUBCON	TOTAL	LABOR	MATL
4	Bolt up	12 ea	2	24	65.00	130.00		1.560			1.560
4	Handle	10 ea	3	30	65.00	195.00		1.950			1.950
4	Install	3 lot	2	6	65.00	130.00		350			390
4	18" Duct	50 ft			86.00	86.00					4.300
4	18" Duct misc. fittings	1 lot			2,000.00	2,000.00				2.000	2.000
4	Bolt up	14 ea	3	42	65.00	195.00		2.730			2.730
4	Handle	13 ea	3.52	45.76	65.00	228.80		2.974			2.974
4	Install	3 lot	2	6	65.00	130.00		390			390
4	20" Duct	18 ft			92.00	92.00				1.656	1.656
4	20" Duct misc. fittings	1 lot			2,000.00	2,000.00				2.000	2.000
4	Bolt up	7 ea	3.5	24.5	65.00	227.50		1.593			1.593
4	Handle	5 ea	4.12	20.6	65.00	267.80		1.339			1.339
4	Install	2 lot	2	4	65.00	130.00		260			260
4	22" Duct	30 ft			99.00	99.00				2.970	2.970
4	22" Duct misc. fittings	1 lot			2,000.00	2,000.00				2.000	2.000
4	Bolt up	9 ea	4	36	65.00	260.00		2.340			2.340
4	Handle	8 ea	4.6	36.8	65.00	299.00		2.392			2.392
4	Install	2 lot	3	6	65.00	195.00		390			390
4	24" Duct	30 ft			106.00	106.00				3.180	3.180
4	24" Duct misc. fittings	1 lot			3,000.00	3,000.00				3.000	3.000
4	Bolt up	9 ea	4	36	65.00	260.00		2.340			2.340
4	Handle	8 ea	4.6	36.8	65.00	299.00		2.392			2.392
4	Install	2 lot	3	6	65.00	195.00		390			390
4	26" Duct	85 ft			114.00	114.00				9.690	9.690
4	26" Duct misc. fittings	1 lot			3,000.00	3,000.00				3.000	3.000
4	Bolt up	24 ea	5	120	65.00	325.00		7.800			7.800
4	Handle	22 ea	4.72	103.84	65.00	306.80		6.750			6.750
4	Install	5 lot	3	15	65.00	195.00		975			975
4	32" Duct	715 ft			177.00	177.00				126.555	126.555



**Eichler**  
Engineers Inc. of CA

Client Name: Wine Institute  
Job Number: 30913  
Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

**PRELIMINARY ESTIMATE**

Estimated By: P.H.M.  
Checked By: R.H.  
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/UNIT	TOTAL MHRS	UNIT COSTS				TOTAL COSTS			TOTAL
						\$ / Hr	MAT'L	SUBCON.	TOTAL	LABOR	MAT'L	SUBCON.	
4	32" Duct misc. fittings	1	lot				4,500.00		4,500.00		4,500		4,500
4	Bolt up	190	ea	6	1140	65.00			390.00	74,100			74,100
4	Handle	178	ea	6	1068	65.00			390.00	69,420			69,420
4	Install	36	lot	3	108	65.00			195.00	7,020			7,020
1	Install an 10" duct bank duct	17	ea	48	816	65.00	4,545.00		7,665.00	53,040	77,265		130,305
3	Install an 6" tank duct bank duct	7	ea	45	322	65.00	4,202.00		7,192.00	20,930	29,414		50,344
3	Install an 10" duct bank duct	10	ea	48	480	65.00	4,545.00		7,665.00	31,200	45,450		76,650
2	Install an 12" duct bank duct	12	ea	48	576	65.00	4,699.00		7,819.00	37,440	56,388		93,828
4	Install an 10" duct bank duct	14	ea	48	672	65.00	4,545.00		7,665.00	43,680	63,630		107,310
ALL	Allowance for drilling & welding flange to main ducts at factory	60	ea				1,350.00		1,350.00		81,000		81,000
1	Install ducting from KO drum to VOC - 1 - 28" duct	1	lot	71.28	71.28	65.00	6,750.00		11,383.20	4,633	6,750		11,383
2	Install ducting from KO drum to VOC - 2 - 36" duct	1	lot	88.48	88.48	65.00	11,754.00		17,505.20	5,751	11,754		17,505
3	Install ducting from KO drum to VOC - 3 - 26" duct	1	lot	71.28	71.28	65.00	6,032.00		10,665.20	4,633	6,032		10,665
4	install ducting from KO drum to VOC - 4 - 26" duct	1	lot	71.28	71.28	65.00	6,032.00		10,665.20	4,633	6,032		10,665
	Allowance to modify spreader on top of tanks												
1	VOC -1 Tanks	17	ea					1,800.00	1,800.00			30,600	30,600
2	VOC -2 Tanks	12	ea					1,800.00	1,800.00			21,600	21,600
3	VOC -3 Tanks	17	ea					1,800.00	1,800.00			30,600	30,600
4	VOC -4 Tanks	14	ea					1,800.00	1,800.00			25,200	25,200
ALL	Allowance for special rigging tools & frames	1	lot					10,000.00	10,000.00			10,000	10,000



**Eichle**  
Engineers Inc. of CA

Client Name: Wine Institute  
 Job Number: 30913  
 Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters

**PRELIMINARY ESTIMATE**

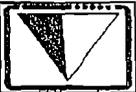
Estimated By: P.H.M.  
 Checked By: R.H.  
 Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS				TOTAL COSTS			TOTAL
						\$ / Hr	MAT'L	SUBCON.	TOTAL	LABOR	MAT'L	SUBCON.	
	Helicopter for steel & ducting												
	VOC-1 system												
1	assume 54 lifts	60	hrs					6,000.00	6,000.00			360,000	360,000
	crew per diem	8	days					750.00	750.00			6,000	6,000
	VOC-2 system												
2	assume 28 lifts	35	hrs					6,000.00	6,000.00			210,000	210,000
	crew per diem	5	days					750.00	750.00			3,750	3,750
	VOC-3 system												
3	assume 28 lifts	35	hrs					6,000.00	6,000.00			210,000	210,000
	crew per diem	5	days					750.00	750.00			3,750	3,750
	VOC-4 system												
4	assume 23 lifts	30	hrs					6,000.00	6,000.00			180,000	180,000
	crew per diem	5	days					750.00	750.00			3,750	3,750
	Allowance for crane to install VOC's												
1	VOC-1	3	wks	160	480	75.00		2,500.00	14,500.00	36,000		7,500	43,500
2	VOC-2	3	wks	160	480	75.00		2,500.00	14,500.00	36,000		7,500	43,500
3	VOC-3	3	wks	160	480	75.00		2,500.00	14,500.00	36,000		7,500	43,500
4	VOC-4	3	wks	160	480	75.00		2,500.00	14,500.00	36,000		7,500	43,500
ALL	allowance for overtime to build structures to work around helicopter usage	1	lot	2000	2000	20.00			40,000.00	40,000			40,000
<b>TOTAL - Process Piping &amp; Equipment</b>					<b>24987</b>					<b>1,555,069</b>	<b>3,175,093</b>	<b>1,197,250</b>	<b>5,927,412</b>

Client Name: Wine Institute

Job Number: 30913

Job Title: Fermenter VOC Emissions - Livingston West Side Fermenters



Eickhoff Engineers Inc. of CA

**PRELIMINARY ESTIMATE**

Estimated By: P.H.M.

Checked By: R.H.

Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/UNIT	TOTAL MHR	UNIT COSTS			TOTAL COSTS			
						\$ / HR	MATL	SUBCON.	LABOR	MATL	SUBCON.	
2.00	Site Construction			25%	25%	25%			317,508			317,508
3.00	Concrete			50%	50%	50%			222,475			222,475
4.00	Masonry			25%	25%	25%						
5.00	Metals			30%	30%	30%	213,588	533,879	12,000			759,466
6.00	Wood & Plastics			25%	25%	25%						
7.00	Thermal & Moisture Protection			25%	25%	25%						
8.00	Door & Windows			25%	25%	25%						
9.00	Finishes			25%	25%	25%						
10.00	Specialties			25%	25%	25%	65		2,090			2,155
11.00	Equipment			25%	25%	25%						
12.00	Furnishings			25%	25%	25%						
13.00	Special Construction			25%	25%	25%						
14.00	Conveying Systems			25%	25%	25%						
15.00	Mechanical HVAC & Plumbing			25%	25%	25%						
16.00	Electrical			30%	30%	30%	19,505	25,736	16,020			61,261
17.00	Instruments & Controls			30%	30%	30%	42,165	201,669	37,500			281,334
18.00	Process Piping & Equipment			35%	35%	35%	544,274	1,111,283	419,038			2,074,594
	Design Fee Allowance			35%					735,000			735,000
	Construction Management Allowance			30%					126,000			126,000
	Plan Check & Permit Fee Allowance			25%					12,135			12,135
	Third Party Inspection Allowance			25%					9,101			9,101
	ROUND OFF											
	TOTAL - Contingency								1,908,866			4,601,028
									819,596	1,872,566		



**ESTIMATE SUMMARY SHEET**

Client Name: Wine Institute

Estimated By: P.H.M.

Job Number: 30913

**PRELIMINARY ESTIMATE**

Checked By: R.H.

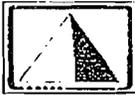
Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES

Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	TOTAL COSTS				TOTAL
		RTO-1	RTO-2	RTO-3	RTO-4	
<b>SUMMARY</b>						
2.00	Site Construction	\$9,350	\$0	\$0	\$0	\$9,350
3.00	Concrete	\$81,050	\$0	\$0	\$0	\$81,050
4.00	Masonry					\$0
5.00	Metals	\$5,000	\$5,000	\$5,000	\$5,000	\$20,000
6.00	Wood & Plastics					\$0
7.00	Thermal & Moisture Protection	\$89,600	\$34,400	\$29,600	\$11,000	\$164,600
8.00	Door & Windows					\$0
9.00	Finishes					\$0
10.00	Specialties					\$0
11.00	Equipment					\$0
12.00	Furnishings					\$0
13.00	Special Construction					\$0
14.00	Conveying Systems					\$0
15.00	Mechanical HVAC & Plumbing					\$0
16.00	Electrical	\$326,368	\$0	\$0	\$0	\$326,368
17.00	Instruments & Controls	\$116,680	\$37,631	\$37,632	\$37,632	\$229,575
18.00	Process Piping & Equipment	\$1,331,505	\$784,365	\$924,335	\$828,665	\$3,868,870
	<b>Sub Total</b>	<b>\$1,959,553</b>	<b>\$861,396</b>	<b>\$996,567</b>	<b>\$882,297</b>	<b>\$4,699,813</b>
	Tax & Freight	\$99,669	\$41,722	\$48,676	\$41,722	\$231,789
	General Conditions	\$164,738	\$72,249	\$83,619	\$73,922	\$394,528
	General Contractor Mark-Up	\$222,396	\$97,537	\$112,886	\$99,794	\$532,613
	<b>Field Costs - Sub Total</b>	<b>\$2,446,356</b>	<b>\$1,072,904</b>	<b>\$1,241,748</b>	<b>\$1,097,735</b>	<b>\$5,858,743</b>
	Design Fee Allowance	366,953	160,936	186,262	164,660	\$878,812
	Construction Management Allowance	\$73,391	\$32,187	\$37,252	\$32,932	\$175,762
	Plan Check & Permit Fee Allowance	\$777	\$325	\$380	\$325	\$1,808
	Third Party Inspection Allowance	\$583	\$244	\$285	\$244	\$1,356
	Escalation	\$112,069	\$50,101	\$59,830	\$54,113	\$276,113
	Project Contingency	\$847,578	\$354,800	\$413,934	\$354,800	\$1,971,112
	<b>Sub Total</b>	<b>\$3,847,708</b>	<b>\$1,671,498</b>	<b>\$1,939,691</b>	<b>\$1,704,809</b>	<b>\$9,163,707</b>
	Owners Costs	\$36,695	\$16,094	\$18,626	\$16,466	\$87,881
	Round Off	-\$404	\$409	-\$318	-\$275	-\$588
	<b>GRAND TOTAL</b>	<b>\$3,884,000</b>	<b>\$1,688,000</b>	<b>\$1,958,000</b>	<b>\$1,721,000</b>	<b>\$9,251,000</b>

Prepared By: *Paul H. Moore*  
 Date: 6/24/05

Approved By: *R.H. DeGuz*  
 Date: 6/24/05



**ESTIMATE SUMMARY SHEET**

Client Name: Wine Institute

Estimated By: P.H.M.

Job Number: 30913

**PRELIMINARY ESTIMATE**

Checked By: R.H.

Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES

Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	W/O ESCALATION & OWNERS COSTS				TOTAL
		TOTAL COSTS				
		RTO-1	RTO-2	RTO-3	RTO-4	
<b>SUMMARY</b>						
2.00	Site Construction	\$9,350	\$0	\$0	\$0	\$9,350
3.00	Concrete	\$81,050	\$0	\$0	\$0	\$81,050
4.00	Masonry					\$0
5.00	Metals	\$5,000	\$5,000	\$5,000	\$5,000	\$20,000
6.00	Wood & Plastics					\$0
7.00	Thermal & Moisture Protection	\$89,600	\$34,400	\$29,600	\$11,000	\$164,600
8.00	Door & Windows					\$0
9.00	Finishes					\$0
10.00	Specialties					\$0
11.00	Equipment					\$0
12.00	Furnishings					\$0
13.00	Special Construction					\$0
14.00	Conveying Systems					\$0
15.00	Mechanical HVAC & Plumbing					\$0
16.00	Electrical	\$326,368	\$0	\$0	\$0	\$326,368
17.00	Instruments & Controls	\$116,680	\$37,631	\$37,632	\$37,632	\$229,575
18.00	Process Piping & Equipment	\$1,331,505	\$784,365	\$924,335	\$828,665	\$3,868,870
	<b>Sub Total</b>	<b>\$1,959,553</b>	<b>\$861,396</b>	<b>\$996,567</b>	<b>\$882,297</b>	<b>\$4,699,813</b>
	Tax & Freight	\$99,669	\$41,722	\$48,676	\$41,722	\$231,789
	General Conditions	\$164,738	\$72,249	\$83,619	\$73,922	\$394,528
	General Contractor Mark-Up	\$222,396	\$97,537	\$112,886	\$99,794	\$532,613
	<b>Field Costs - Sub Total</b>	<b>\$2,446,356</b>	<b>\$1,072,904</b>	<b>\$1,241,748</b>	<b>\$1,097,735</b>	<b>\$5,858,743</b>
	Design Fee Allowance	366,953	160,936	186,262	164,660	\$878,812
	Construction Management Allowance	\$73,391	\$32,187	\$37,252	\$32,932	\$175,762
	Plan Check & Permit Fee Allowance	\$777	\$325	\$380	\$325	\$1,808
	Third Party Inspection Allowance	\$583	\$244	\$285	\$244	\$1,356
	Escalation					\$0
	Project Contingency	\$847,578	\$354,800	\$413,934	\$354,800	\$1,971,112
	<b>Sub Total</b>	<b>\$3,735,639</b>	<b>\$1,621,397</b>	<b>\$1,879,861</b>	<b>\$1,650,697</b>	<b>\$8,887,593</b>
	Owners Costs					\$0
	Round Off	\$407				\$407
	<b>GRAND TOTAL</b>	<b>\$3,736,046</b>	<b>\$1,621,397</b>	<b>\$1,879,861</b>	<b>\$1,650,697</b>	<b>\$8,888,000</b>

Prepared By:

*P.H.M.*

Date:

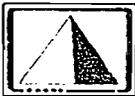
6/24/05

Approved By:

*R.W. Medges*

Date:

6/24/05



ESTIMATE SUMMARY SHEET

Client Name: Wine Institute

Estimated By: P.H.M.

Job Number: 30913

PRELIMINARY ESTIMATE

Checked By: R.H.

Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES

Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	W/O Escalation & Owners Costs				TOTAL
		TOTAL MHRS	TOTAL COSTS			
			LABOR	MAT'L	SUBCON.	
<b>SUMMARY</b>						
2.00	Site Construction		\$0	\$0	\$9,350	\$9,350
3.00	Concrete		\$0	\$0	\$81,050	\$81,050
4.00	Masonry		\$0	\$0	\$0	\$0
5.00	Metals		\$0	\$0	\$20,000	\$20,000
6.00	Wood & Plastics		\$0	\$0	\$0	\$0
7.00	Thermal & Moisture Protection		\$0	\$0	\$164,600	\$164,600
8.00	Door & Windows		\$0	\$0	\$0	\$0
9.00	Finishes		\$0	\$0	\$0	\$0
10.00	Specialties		\$0	\$0	\$0	\$0
11.00	Equipment		\$0	\$0	\$0	\$0
12.00	Furnishings		\$0	\$0	\$0	\$0
13.00	Special Construction		\$0	\$0	\$0	\$0
14.00	Conveying Systems		\$0	\$0	\$0	\$0
15.00	Mechanical HVAC & Plumbing		\$0	\$0	\$0	\$0
16.00	Electrical		\$135,577	\$181,792	\$9,000	\$326,368
17.00	Instruments & Controls		\$78,975	\$150,600	\$0	\$229,575
18.00	Process Piping & Equipment		\$2,066,090	\$1,774,780	\$28,000	\$3,868,870
	<b>Sub Total</b>		<b>\$2,280,642</b>	<b>\$2,107,172</b>	<b>\$312,000</b>	<b>\$4,699,813</b>
	Tax & Freight (11%)					\$231,789
	General Conditions (8%)					\$394,528
	General Contractor Mark-Up (10%)					\$532,613
	<b>Field Costs - Sub Total</b>					<b>\$5,858,743</b>
	Design Fee Allowance (15%)					\$878,811
	Construction Management Allowance (3%)					\$175,762
	Plan Check & Permit Fee Allowance (2%)					\$1,808
	Third Party Inspection Allowance (1.5%)					\$1,356
	Escalation					
	Project Contingency					\$1,971,112
	<b>Sub Total</b>					<b>\$8,887,593</b>
	Owners Costs					\$0
	Round Off					\$407
	<b>GRAND TOTAL</b>					<b>\$8,888,000</b>

Prepared By:

*Paul H. Murray*  
6/24/05

Date:

Approved By

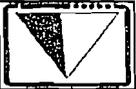
*R. W. Hedger*  
6/24/05

Date:

Client Name: Wine Institute

Job Number: 30913

Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES



Eichler Engineers Inc. of CA

**PRELIMINARY ESTIMATE**

Estimated By: P.H.M.

Checked By: R.H.

Rev. 2 Date: 6/24/05

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CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/UNIT	TOTAL MHR	UNIT COSTS			TOTAL
						\$ / hr	MATL	SUBCON.	
						TOTAL COSTS			TOTAL
						LABOR	MATL	SUBCON.	TOTAL
	020 - Site Construction								
	1 Excavation for KOH system	178	cy		50.00	50.00		50.00	8,900
	1 Excavation for Air compressor / dryer unit	9	cy		50.00	50.00		50.00	450
	<b>TOTAL - Site Construction</b>								<b>9,350</b>

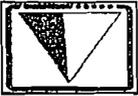




Client Name: Wine Institute

Job Number: 30913

Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES



Eichle Engineers Inc. of CA

**PRELIMINARY ESTIMATE**

Estimated By: P.H.M.

Checked By: R.H.

Rev. 2 Date: 6/24/05

O:\30913\5.0 Design Documents\Estimates\Rev. 2\Living

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/UNIT	TOTAL MHRS	UNIT COSTS			TOTAL COSTS		
						\$ / hr	MATL	SUBCON	TOTAL	LABOR	MATL

	070 - Thermal & Moisture Protection												
	all	1 lot				8,000.00	8,000.00		8,000.00				8,000
	1 Allowance for insulation on 4" KOH pipe	2920	ft		30.00	30.00		30.00	87,600				87,600
	2 Allowance for insulation on 4" KOH pipe	1080	ft		30.00	30.00		30.00	32,400				32,400
	3 Allowance for insulation on 4" KOH pipe	920	ft		30.00	30.00		30.00	27,600				27,600
	4 Allowance for insulation on 4" KOH pipe	300	ft		30.00	30.00		30.00	9,000				9,000

	TOTAL - Thermal & Moisture Protection												164,600
													164,600



**Eichler**  
Engineers Inc. of CA

Client Name: Wine Institute  
Job Number: 30913  
Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES

**PRELIMINARY ESTIMATE**

Estimated By: P.H.M.  
Checked By: R.H.  
Rev. 2 Date: 6/24/05

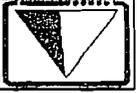
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CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/ UNIT	TOTAL MHRS	UNIT COSTS				TOTAL COSTS			TOTAL
						\$ / Hr	MAT'L	SUBCON.	TOTAL	LABOR	MAT'L	SUBCON.	
<b>016 - Electrical</b>													
1	MOTOR CONTROL CENTER STRUCTURE	1	EA	10	10	75.00	1,800.00		2,550.00	750	1,800		2,550
1	200A MAIN BREAKER	1	EA	4.21	4	75.00	710.00		1,025.75	316	710		1,026
1	STARTER SIZE 1 480VAC MCC BOX	1	EA	2.9	3	75.00	945.00		1,162.50	218	945		1,163
1	STARTER SIZE 2 480VAC MCC BOX	1	EA	4	4	75.00	1,075.00		1,375.00	300	1,075		1,375
1	STARTER SIZE 3 480VAC MCC BOX	1	EA	8	8	75.00	1,800.00		2,400.00	600	1,800		2,400
1	CHECKOUT AND TESTING	1	LOT	40	40	75.00			3,000.00	3,000			3,000
<b>POWER DISTRIBUTION</b>													
1	TRANSFORMER 1500KVA 15KV/480V	1	EA	100	100	75.00	27,500.00		35,000.00	7,500	27,500		35,000
1	DISCONNECT SWITCH 15KV	1	EA	56	56	75.00	17,500.00		21,700.00	4,200	17,500		21,700
1	15KV 1/0 CONDUCTOR	60	CLF	4.211	253	75.00	215.00		530.83	18,950	12,900		31,850
1	15KVLOAD BREAK DISC.& UTILITY CONNECTION	1	LOT	100	100	75.00	39,800.00		47,300.00	7,500	39,800		47,300
1	3" RIGID ALUMINUM	2000	LF	0.18	360	75.00	10.50		24.00	27,000	21,000		48,000
1	24X36X42 PULL BOX	30	EA	10.5	315	75.00	885.00		1,672.50	23,625	26,550		50,175
1	3" 90-DEGREE ELBOWS	2	EA	1.9	4	75.00	69.00		211.50	285	138		423
1	3" IN-LINE FITTINGS	2	EA	2.9	6	75.00	415.00		632.50	435	830		1,265
1	MISC SUPPORTS, FITTINGS, TERMINATIONS	1	LOT							17,899	29,244		47,143
1	CHECKOUT AND TESTING	1	LOT	40	40	75.00			3,000.00	3,000			3,000
1	Allowance for trenching power cable	300	ft						30.00			9,000	9,000
1	Allowance for overtime	1	lot	200	200	100.00			20,000.00	20,000			20,000
<b>TOTAL - Electrical</b>					<b>1502</b>					<b>135,577</b>	<b>181,792</b>	<b>9,000</b>	<b>326,358</b>

Client Name: Wine Institute

Job Number: 30913

Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES



Engineers Inc. of CA

**PRELIMINARY ESTIMATE**

Estimated By: P.H.M.

Checked By: R.H.

Rev. 2 Date: 6/24/05

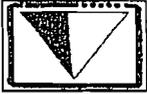
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CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR	TOTAL	UNIT COSTS			LABOR	TOTAL COSTS	
						S / HR	MATL	SUBCON		TOTAL	MATL
	2% KOH equipment										
1	Conservation vents	2 ea		4	8	75.00	1,200.00		600	2,400	3,000
1	Relief vents	2 ea		2	4	75.00	3,000.00		300	6,000	6,300
1	Level transmitter & indicator	2 ea		4	8	75.00	1,200.00		600	2,400	3,000
1	High level switch	1 ea		2	2	75.00	500.00		150	500	650
1	Pressure gauge	6 ea		1	6	75.00	300.00		450	1,800	2,250
1	Pressure transmitter	ea				75.00	2,100.00				2,100.00
1	Temperature gauge & TW	6 ea		4	24	75.00	300.00		1,800	1,800	3,600
1	Temperature transmitter, RTD, TW	1 ea		4	4	75.00	1,200.00		300	1,200	1,500
1	Temperature control valve	1 ea		6	6	75.00	1,800.00		450	1,800	2,250
1	Relief valves	2 ea		2	4	75.00	300.00		300	600	900
1	Pressure regulator, liquid	1 ea		2	2	75.00	300.00		150	300	450
1	Pressure regulator, steam	1 ea		2	2	75.00	1,500.00		150	1,500	1,650
1	Sight glass	2 ea		4	8	75.00	1,000.00		600	2,000	2,600
1	Totalizing mass flow meter	2 ea		6	12	75.00	25,000.00		900	50,000	50,900
	CIP instruments										
all	pressure gauge	158 ea		1	158	75.00	180.00		11,850	28,440	40,290
all	Install control valves for KOH & water lines	120 ea		2	240	75.00	250.00		18,000	30,000	48,000
all	Install conduit to valves	3000 ft		0.1	300	75.00	3.00		22,500	9,000	31,500
all	Install wire to valve	60 ea		1	60	75.00	5.00		4,500	300	4,800
all	Install dual manual switch at grade per tank	60 ea		1	60	75.00	120.00		4,500	7,200	11,700
all	Install conduit for power to switch	1000 ft		0.1	100	75.00	3.00		7,500	3,000	10,500
all	Install wire to switch	3000 ft		0.015	45	75.00	0.12		3,375	350	3,735
<b>TOTAL - Instruments &amp; Controls</b>											
1053											
79,975											
150,800											
229,573											

Client Name: Wine Institute

Job Number: 30913

Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES



Eichleay Engineers Inc. of CA

**PRELIMINARY ESTIMATE**

Estimated By: P.H.M.

Checked By: R.H.

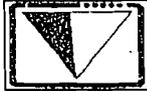
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/	TOTAL	UNIT COSTS			TOTAL COSTS					
						\$ / Hr	MATL	SUBCON	TOTAL	LABOR	MATL	SUBCON		
	018 - Process Piping & Equipment													
	2% KOH equipment													
1	50% tank	1	ea	4	4	65.00	13,800.00		14,060.00	260	13,800		14,050	
1	50% pump	1	ea	6	6	65.00	2,530.00		2,920.00	390	2,530		2,920	
1	50% filter	2	ea	2	4	65.00	1,380.00		1,510.00	260	2,760		3,020	
1	2% tank	1	ea	10	10	65.00	46,920.00		47,570.00	650	46,920		47,570	
1	2% pump	1	ea	6	6	65.00	5,750.00		6,140.00	390	5,750		6,140	
1	2% educator	1	ea	10	10	65.00	1,150.00		1,800.00	650	1,150		1,800	
1	2% heat exchanger	1	ea	4	4	65.00	2,990.00		3,250.00	260	2,990		3,250	
1	2% filter	2	ea	2	4	65.00	1,840.00		1,970.00	260	3,580		3,940	
1	Crane for installing KOH equipment	1	lot				3,000.00		3,000.00				3,000	
	CIP Equipment													
1	Spray nozzles (ducting)	235	ea	2	470	65.00	250.00		380.00	30,550	58,750		89,300	
1	Spray nozzles (KO Potts)	6	ea	2	12	65.00	300.00		430.00	780	1,800		2,580	
1	Spray nozzles for main ducting	107	ea	2	214	65.00	250.00		380.00	13,910	26,750		40,660	
1	Install sanitize inducers for in main ducting	55	ea	2	110	65.00	300.00		430.00	7,150	16,500		23,650	
1	Allowance for valves for KOH & water clean out	428	ea	4	1712	65.00	150.00		410.00	111,280	64,200		175,480	
2	Spray nozzles (ducting)	235	ea	2	470	65.00	250.00		380.00	30,550	58,750		89,300	
2	Spray nozzles (KO Potts)	6	ea	2	12	65.00	300.00		430.00	780	1,800		2,580	
2	Spray nozzles for main ducting	116	ea	2	232	65.00	250.00		380.00	15,080	29,000		44,080	
2	Install sanitize inducers for in main ducting	58	ea	2	116	65.00	300.00		430.00	7,540	17,400		24,940	
2	Allowance for valves for KOH & water clean out	464	ea	4	1856	65.00	150.00		410.00	120,640	69,500		190,240	
3	Spray nozzles (ducting)	235	ea	2	470	65.00	250.00		380.00	30,550	58,750		89,300	
3	Spray nozzles (KO Potts)	6	ea	2	12	65.00	300.00		430.00	780	1,800		2,580	
3	Spray nozzles for main ducting	189	ea	2	378	65.00	250.00		380.00	24,570	47,250		71,820	
3	Install sanitize inducers for in main ducting	95	ea	2	190	65.00	300.00		430.00	12,350	28,500		40,850	
3	Allowance for valves for KOH & water clean out	756	ea	4	3024	65.00	150.00		410.00	199,560	113,400		309,960	
4	Spray nozzles (ducting)	235	ea	2	470	65.00	250.00		380.00	30,550	58,750		89,300	

Client Name: Wine Institute

Job Number: 30913

Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES



Eichle Engineers Inc. of CA

**PRELIMINARY ESTIMATE**

Estimated By: P.H.M.

Checked By: R.H.

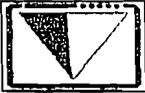
Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/UNIT	TOTAL MHRS	UNIT COSTS			TOTAL COSTS		
						S / Hr	MATL	SUBCON.	TOTAL	LABOR	MATL
4	Spray nozzles (KO Pois)	6 ea		2	12	65.00	300.00	430.00	780	1,800	2,580
4	Spray nozzels for main ducting	178 ea		2	356	65.00	250.00	380.00	23,140	44,500	67,640
4	Install sanitize inducers for in main ducting	90 ea		2	180	65.00	300.00	430.00	11,700	27,000	38,700
4	Allowance for valves for KOH & water clean out	712 ea		4	2848	65.00	150.00	410.00	185,120	106,800	291,920
	Install sanitize system at each tank										
all	Install 1 1/2" PP pipe	4800 ft		0.3	1440	65.00	3.00	22.50	93,600	14,400	108,000
all	Install inducer	60		2	120	65.00	300.00	430.00	7,800	18,000	25,800
1 & 2	Allowance for a sanitize cart for main duct cleaning	2 ea				2,500.00	2,500.00	5,000			5,000
	Utility Equipment										
1	Air compressor, oil free, 180cfm, 50 HP	2 ea		10	20	65.00	42,000.00	42,650.00	1,300	84,000	85,300
1	Air dryer, reciever tank and filters, 180cfm	2 ea		10	20	65.00	14,200.00	14,850.00	1,300	28,400	29,700
1	Allowance to install 2" natural gas pipe	1060 ft		1.2	1272	65.00	5.00	83.00	82,680	5,300	87,980
1	Allowance for natural gas valves & fittings	1 lot				2,000.00	2,000.00	2,000.00		2,000	2,000
all	Allowance to install 2" air line feeding the VOC's	500 ft		1.2	600	65.00	5.00	83.00	39,000	2,500	41,500
all	Allowance for air line valves & fittings	1 lot				6,000.00	6,000.00	6,000.00		6,000	6,000
all	Allowance to install 2" local water line to each tank	1800 ft		1	1800	65.00	5.00	70.00	117,000	9,000	126,000
all	Allowance to install 2" valves & fittings for water line	60 ea		4	240	65.00	120.00	380.00	15,600	7,200	22,800
1	Allowance to install 3" water line to KOH / main rack	800 ft		0.6	480	65.00	6.00	45.00	31,200	4,800	36,000
1	Fab & install 4" KOH line for main duct for system 1	1180 ft		1	1180	65.00	50.00	115.00	76,700	59,000	135,700
1	Fab & install 4" KOH line for tanks in system 1	1740 ft		1	1740	65.00	50.00	115.00	113,100	87,000	200,100

Client Name: Wine Institute

Job Number: 30913

Job Title: Fermenter VOC Emissions - LIVINGSTON UTILITIES



Fichl Engineers Inc. of CA

**PRELIMINARY ESTIMATE**

Estimated By: P.H.M.

Checked By: R.H.

Rev. 2 Date: 6/24/05

CODE	ITEM DESCRIPTION	QUANT	UNIT	MHR/UNIT	TOTAL MHR	UNIT COSTS			TOTAL COSTS		
						S / Hr	MAT'L	SUBCON	LABOR	MAT'L	SUBCON
2	Fab & install 4" KOH line for main duct for system 2	330	ft	1	330	65.00	50.00	115.00	21,450	16,500	37,950
2	Fab & install 4" KOH line for tanks in system 2	750	ft	1	750	65.00	50.00	115.00	48,750	37,500	86,250
3	Fab & install 4" KOH line for main duct for system 3	160	ft	1	160	65.00	50.00	115.00	10,400	8,000	18,400
3	Fab & install 4" KOH line for tanks in system 3	760	ft	1	760	65.00	50.00	115.00	49,400	38,000	87,400
4	Fab & install 4" KOH line for main duct for system 4	ft				65.00	50.00	50.00			
4	Fab & install 4" KOH line for tanks in system 4	300	ft	1	300	65.00	50.00	115.00	19,500	15,000	34,500
all	Fab & install 2" drain to tank & ground from duct	60	ea	55	3300	65.00	2,100.00	5,675.00	214,500	126,000	340,500
all	Fab & install 1" CIP line at each duct	60	ea	65	3900	65.00	4,700.00	8,925.00	253,500	282,000	535,500
1	Fab & install 1 1/2" FRP piping	1	ea	48	48	65.00	4,000.00	7,120.00	3,120	4,000	7,120
1	Fab & install 2" FRP piping	1	ea	34	34	65.00	2,500.00	4,710.00	2,210	2,500	4,710
1	Allowance for 4" ss pipe at KOH unit	1	lot	100	100	65.00	5,000.00	11,500.00	6,500	5,000	11,500
all	Allowance for small crane / fork lift for piping work	1	lot				20,000.00	20,000.00			20,000
<b>TOTAL - Process Piping &amp; Equipment</b>						31735			2,166,090	1,774,780	3,940,870



## **BACT Attachment B**

### **Sizing and Purchase Costs for Control Devices**

## Thermal Oxidizer Equipment Cost

### Thermal Oxidizer Equipment Prices (Without Heat Recovery) Based on EPA Cost Manual Section 3.2, Chapter 2

Case		Equipment Cost	
VOC System	RTO Capacity Basis SCFM (Eichleay Study)	1988 Cost (EPA)	Cost Escalated to 2009 at 3% per Year
1	16,000	\$100,600	\$187,100
2	22,000	\$108,400	\$201,700
3	13,000	\$95,800	\$178,200
4	13,000	\$95,800	\$178,200
Totals			\$745,200

### Regenerative Thermal Oxidizer Equipment Prices (95% Heat Recovery) Based on Quotations Received in Eichleay Study

Case		Equipment Cost	
VOC System	RTO Capacity Basis SCFM (Eichleay Study)	2005 Cost (EPA)	Cost Escalated to 2009 at 3% per Year
1	16,000	\$414,200	\$466,200
2	22,000	\$502,500	\$565,600
3	13,000	\$365,200	\$411,000
4	13,000	\$365,200	\$411,000
Totals			\$1,853,800

**Refrigerated Condenser Sizing with Equipment Cost Based on EPA Cost Manual  
Section 3.1, Chapter 2**

VOC System	RTO Capacity Basis (Eichleay Study)	System Capacity less Combustion Air	Refrigerated Condenser Duty Btu/hour	Refrigerated Condenser Duty Tons	1990 Cost (EPA)	Cost Escalated to 2008 at 3% per Year
1	16000	12,900	3,909,000	326	\$430,200	\$754,400
2	22000	17,800	5,393,000	449	\$526,300	\$922,900
3	13000	10,500	3,182,000	265	\$378,100	\$663,000
4	13000	10,500	3,182,000	265	\$378,100	\$663,000
<b>Total</b>				<b>1,306</b>	<b>\$1,027,200</b>	<b>\$3,003,300</b>

**Condenser Duty Calculation:**

Condenser Duty Basis:	Inlet vapor stream contains a maximum of 16,000 ppmv ethanol at 86 F				
	Condensing Temperature is -12 F, 90% of Ethanol Condensed				
Latent Heat Ethanol	369	Btu/lb			
Vapor Heat Capacity	0.21	Btu/lb			
Latent Heat water	1060	Btu/lb			

**Condenser Heat Balance Based on 100 moles of Inlet Vapor:**

		Moles In	Moles Out		Enthalpy Change Btu/100 moles vapor
			Vapor	Liquid	
Ethanol Vapor		1.60	0.16	1.44	-24,594
Water Vapor		4.20	0.00	4.20	-81,783
CO2		94.20	94.20	0.00	-85,319
Sub Total		100.00	94.36	5.64	-191,696
Total		100.00	100.00		-191,696
-191696	Btu/100 moles	=	-5.05	Btu/scf	

**Carbon Adsorption Equipment Prices Based on Technical Assessment Document\***

Equipment Capacity			Equipment Cost	
VOC System	RTO Capacity Basis SCFM (Eichleay Study)	Absorption Capacity Basis SCFM (Without Combustion Air)	1994 Cost (TAD)	Cost Escalated to 2008 at 3% per Year
1	16,000	12,900	\$268,655	\$419,000
2	22,000	17,800	\$305,546	\$476,000
3	13,000	10,500	\$247,914	\$386,000
4	13,000	10,500	\$247,914	\$386,000
<b>Totals</b>				\$1,667,000
* Technical Assessment Document p.77				

**Water Scrubber Equipment Prices Based on STI Study\***

Case			Site Specific, CIP, Maximum Vapor Rate	
VOC System	RTO Capacity Basis SCFM (Eichleay Study)	Absorption Capacity Basis SCFM (Without Combustion Air)	2003 Cost (STI)	Cost Escalated to 2008 at 3% per Year
1	16,000	12,900	\$63,822	\$99,000
2	22,000	17,800	\$71,387	\$111,000
3	13,000	10,500	\$59,411	\$93,000
4	13,000	10,500	\$59,411	\$93,000
<b>Totals</b>			0	\$396,000
* STI Study, p. 21				

**BACT Attachment C**  
**Utilities and Other Annual Costs**

## Costs for Utilities and Other Annual Operating Expenses

Costs for utilities and other annual costs are summarized in the tables on the following two pages. The basis and calculation of the costs is presented below:

### **Natural Gas – applicable to Cases 1, 2 and 5 only**

#### Case 1: Thermal Oxidizer with no heat recovery

The estimate is based on the Eichleay Study which estimated the annual fuel consumption for 95% thermally efficient oxidizers at 67,412 therms/year = 6,741 MMBtu/year. At a natural gas cost of \$8.00/MMBtu, the annual cost is 6,741 x \$8.00 = \$53,900 per year for all four regenerative thermal oxidizers with 95% heat recovery. Dividing by (1-95%) yields the fuel cost for a unit with zero heat recovery:

$$\text{Case 1 Fuel Cost} = \$53900 / (1 - 95\%) = \mathbf{\$1,078,000 \text{ per year}}$$

#### Case 2: Regenerative Thermal Oxidizers

Case 2 is the Eichleay Study case. Therefore,

$$\text{Case 2 Fuel Cost} = \mathbf{\$53,900 \text{ per year}}$$

#### Case 5 – Carbon Adsorption

As calculated elsewhere in this document, the carbon adsorption system will adsorb 350.62 tons per year of VOC's. Per the TAD, 11,800 lb of steam is required to recover 1 ton of ethanol. Given a boiler fuel requirement of 1,350 Btu/lb (based on absorbed boiler duty of 1,080 Btu/lb to produce 100 psig steam from 60 F water and an 80% combustion efficiency), annual fuel consumption for recovery of 350.62 tons ethanol per year is  $11,800 \times 350.62 \times 1,350 / 10^6 = 5,585$  MMBtu/year.

$$\text{Case 5 Fuel Cost} = 5,585 \text{ MMBtu/year} \times \$8.00/\text{MMBtu} = \mathbf{\$44,700 \text{ per year}}$$

### **Electric Power**

#### Cases 1 and 2 – Thermal Oxidizers

For these cases, power consumption is considered to be only that for the ID fans. Per the Eichleay study, annual power consumption for the ID fans associated with the thermal oxidizers is 586 kw per hour for the 120 day crush season. Annual cost at a unit power cost of \$0.11/kwh is therefore

$$586 \times 120 \times 24 \times \$0.11 = \mathbf{\$185,600 \text{ per year}}$$

### Cases 4 and 5 – Carbon Adsorption and Water Scrubber

As in cases 1 and 2 above, only the ID fan power will be considered for these cases. However, these cases do not have to handle the extra 23.6% combustion air. Therefore, the electric power cost for the thermal oxidizer case will be divided by 1.236 to reflect lower flow rates. On this basis, Cases 3, 4 and 5 have an annual power cost of

$$\$185,600/1.236 = \mathbf{\$150,200 \text{ per year (for cases 4 and 5)}}$$

### Case 3 – Refrigerated Condenser

Electric power for this case includes the same ID fan power consumption as Cases 4 and 5 and also requires power for operation of the refrigeration unit. This case requires 1,306 tons of refrigeration for the design case and a utilization factor of 60 % will be assumed. Additionally, a coefficient of performance of 3.5 will be assumed for the equipment. Power demand for a 120 day operating season is thus:

$$60\% \times 1,306/3.5 \times 12,000 \text{ Btu/ton} \times 1 \text{ kW}/3,413 \text{ Btu} \times 120 \text{ days} \times 24 \text{ hr/day} \\ = 2,267,000 \text{ kWh/year}$$

At \$0.11/kWh, the cost for the refrigeration power is \$249,400. Adding \$150,200 for ID fan power (calculated above), total power cost for this case is **\$399,600 per year**.

### **Water Disposal Cost – applicable to Case 4 and 5 only**

#### Case 4 – Water Scrubber

Water disposal requirements and costs for Case 4 (water scrubber) are taken from the STI Study:

- Water Disposal Required: 6 gpm for each 5000 scfm air flow for 90 day crush season.
- Disposal Cost: \$0.25/gallon

Total airflow for all four systems, corrected to subtract the combustion air, is  $(16,000 + 22,000 + 13,000 + 13,000)/1.236 = 51,800 \text{ scfm}$

$$\text{Wastewater Rate} = 51,800 \text{ scfm} \times 6 \text{ gpm}/5,000 \text{ scf} = 62 \text{ gpm}$$

$$\text{Annual wastewater generation} = 62 \text{ gpm} \times 90 \text{ days} \times 1,440 \text{ minutes/day} \\ = 8,035,000 \text{ gallons per year}$$

$$\text{Annual water disposal cost} = 8,035,000 \text{ gallons} \times \$0.25/\text{gallon} = \mathbf{\$ 2,008,800/yr}$$

### Case 5 - Carbon Adsorption

Wastewater is generated from the regeneration of the carbon bed. Per the TAD, 11,800 lb steam is required to recover 1 ton of ethanol. Given liquid densities of 8.34 and 6.61 lb/gallon for water and ethanol respectively, the amount of wastewater produced per ton of ethanol recovered is  $(11,800/8.34) + (2,000/6.61) = 1,718$  gal/ton ethanol.

As calculated in this BACT analysis, the carbon adsorption unit will adsorb 350.62 tons per year of VOC's. Produced wastewater is therefore  $350.62 \text{ tons} \times 1,718 \text{ gal/ton} = 602,400$  gallons per year.

Disposal cost at \$0.25/gal is  $602,400 \times \$0.25 = \mathbf{\$150,600}$  per year

### **Carbon Replacement Cost - applicable to Case 5 only**

Per the TAD, activated carbon adsorbs 18% of its weight in ethanol. However, with regeneration, approximately 1/3 of the ethanol initially adsorbed stays on the carbon bed. In addition, due to the seasonal operation of a winery, the carbon is expected to have a lifetime of 10 years.

As calculated in this BACT analysis, the carbon adsorption unit will adsorb 350.62 tons per year of VOC's. Assuming this occurs over a 120 day crush season with three regenerations per day, the amount adsorbed per cycle is  $350.62/(120 \times 3) = 0.97$  tons/cycle = 1,940 lb-VOC/cycle. Assuming a daily regeneration cycle and allowing for a dual bed for regeneration purposes, the amount of carbon required for the facility is  $2 \times 1,940/(18\% \times .667) = 32,300$  lb carbon.

Given a cost of \$2/lb for carbon and annualizing the cost over the 10 year life,

Carbon Replacement Cost =  $0.163 \times \$2.00 \times 32,300 = \mathbf{\$10,500}$  per year.

### **Cooling Water Cost – applicable to Case 5 only (carbon adsorption)**

Based on values presented in the TAD, the following parameters apply:

Cooling water consumption = 82,600 gallons of cooling water per ton of VOC adsorbed

Cooling Water Unit Cost = \$0.53 per 1000 gallons

Given 350.62 tons of VOC adsorbed per year, annual cost for cooling water is

$82,600 \times 350.62 \times \$0.53/1000 = \mathbf{\$15,800}$  per year

**Utilities and Other Annual Costs**

<b>Control Device</b>	<b>Case 1 Thermal Ox</b>	<b>Case 2 RTO</b>	<b>Case 3 Refrigerated Cond.</b>	<b>Case 4 Water Scrubber</b>	<b>Case 5 Carbon Adsorption</b>
Natural Gas	\$1,078,000	\$53,900	\$0	\$0	\$44,700
Electricity	\$185,600	\$185,600	\$399,600	\$185,600	\$185,600
Water Disposal	\$0	\$0	\$0	\$2,008,800	\$150,600
Cooling Water	\$0	\$0	\$0	\$0	\$15,800
Carbon Replacement	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$10,500</u>
<b>Total</b>	<b>\$1,263,600</b>	<b>\$239,500</b>	<b>\$399,600</b>	<b>\$2,194,400</b>	<b>\$407,200</b>

## **APPENDIX K**

### **Calculation of Post Project Potential to Emit Under Non-SLC Scenario**

## Calculation of Post Project Emissions Under Non-SLC Scenario

### A. Assumptions

- Maximum ethanol content of stored wine is 23.9%.
- The total tank volume that can potentially be used for red wine fermentation is 49,440,000 gallons.
- The total tank volume that can potentially be used for white wine fermentation is 49,440,000 gallons.
- The total tank volume that can potentially be used for storage is 49,440,000 gallons.
- Grape crushing capacity at this facility is 7,200 tons per day based on information provided by the applicant.
- Pressing capacity at this facility is 5,550 tons per day based on information provided by the applicant.
- Annual Post-Project Potential to Emit for fermentation operations will be calculated as a combined value reflecting potential emissions from the winery's total wine production capacity.
- The calculation approach for determining combined emission values for the fermentation operations will follow the draft District policy attached in Appendix D.

### B. Emission Factors

The required emission factors for fermentation and storage operations are taken from District FYI-114, *Estimating VOC Emissions from Winery Tanks*:

Annual emissions from red wine fermentation: 6.2 lb-VOC/1000 gallons annual throughput

Annual emissions from white wine fermentation: 2.5 lb-VOC/1000 gallons annual throughput

Annual emissions from wine storage working losses @ 23.9% Ethanol: 0.338 lb-VOC/1000 gallons-annual throughput

## C. Calculations

### 1. Annual PE for fermentation operations

The Post-Project Potential to Emit for this facility's wine fermentation operation is determined in the following sequence of calculations (see draft District policy "Calculation of the Potential to Emit for VOC Emissions from Wine Fermentation and Storage Operations" in Appendix D):

- a. Potential fermentation emissions from white wine production are first determined:

White wine production capacity is determined as the lesser of the production capacities of either the crushing or pressing equipment or wine fermentation tanks at the facility:

$W_W$  = White wine production capacity (gallons per year as measured immediately after pressing) is the lesser of the following three calculations:

$$W1 = C \times D_w \times M \text{ (limited by crusher capacity)}$$

$$W2 = P \times D_w \times M \text{ (limited by pressing capacity)}$$

$$W3 = (V_{FW} \times D_w) / W_{FW} \text{ (limited by white fermenter volume)}$$

$$W4 = (V_T \times D_w) / R_{TW} \text{ (limited by overall tank processing)}$$

where,

C = grape crushing capacity = 7,200 tons/day

$D_w$  = days in a white wine crush season = 120 days

M = amount of grape juice produced per ton of grapes crushed = 200 gallons

P = pressing capacity = 5,550 tons per day

$W_{FW}$  = White fermentation period = 10 days

$R_{TW}$  = Total winery retention time for white wine, 40 + 10 = 50 days

$V_{FW}$  = total volume of white wine fermenters = 49,440,000 gallons

$V_T$  = Total Winery Cooperage = 49,440,000 gallons

Potential white wine fermentation emissions are then determined by applying the white fermentation emission factor stated in FYI-114:

$$PE_{\text{whitefermentation}} = E_{fw} \times W_W$$

$E_{fw}$  = white wine emission factor = 2.5 lb-VOC/1000 gal

Performing the above calculations yields

W1 = 172.80 MG/year (million gals/year)

W2 = 133.20 MG/year

W3 = 593.28 MG/year

$$W4 = 118.66 \text{ MG/year}$$

Selecting  $W_W = W4 = 118.66 \text{ MG/year}$  and applying the emission factor for white wine fermentation yields:

$$PE_{\text{whitefermentation}} = 296,640 \text{ lb-VOC/year}$$

- b. Potential fermentation emissions from red wine production are then calculated:

Red wine production capacity is determined as the lesser of the production capacities of either the crushing, pressing or tankage.

$W_R$  = Red wine production capacity (gallons per year as measured immediately after pressing) and is the lesser of the following four calculations:

$$W1 = C \times D_r \times M \text{ (limited by crusher capacity)}$$

$$W2 = P \times D_r \times M \text{ (limited by pressing capacity)}$$

$$W3 = (V_{FR} \times F \times D_r) / R_{FR} \text{ (limited by red fermenter volume)}$$

$$W4 = (V_T \times D_r) / R_{TS} \text{ (limited by overall tank processing)}$$

$C$  = grape crushing capacity = 7,200 tons/day

$D_r$  = days in a red wine crush season = 120 days

$F$  = Fill factor for red wine fermentation = 80%

$M$  = amount of grape juice produced per ton of grapes crushed = 200 gallons

$P$  = pressing capacity = 5,550 tons per day

$R_{FR}$  = Red fermentation period = 5 days

$R_{TS}$  = Total winery retention time for red wine,  $40 + 5 = 45$  days

$V_{FR}$  = total volume of red wine fermenters = 49,440,000 gallons

$V_T$  = Total Winery Cooperage = 49,440,000 gallons

Potential red wine fermentation emissions are then determined by applying the red fermentation emission factor stated above.

$$PE_{\text{redfermentation}} = E_{fr} \times W / 1,000$$

$E_{fr}$  = red wine emission factor = 6.2 lb-VOC/1000 gal (District Rule 4694)

Performing the above calculations yields

$$W1 = 172.80 \text{ MG/year (million gals/year)}$$

$$W2 = 133.20 \text{ MG/year}$$

$$W3 = 949.25 \text{ MG/year}$$

$$W4 = 131.84 \text{ MG/year}$$

Selecting  $W_R = W4 = 131.84 \text{ MG/year}$  and applying the emission factor for red wine fermentation yields:

$$PE_{\text{redfermentation}} = 817,408 \text{ lb-VOC/year}$$

- c. The facility's PE for fermentation operations is then taken to be the greater of either the white or red PE's determined above.

$$PE_{\text{fermentation}} = \text{greater of } PE_{\text{whitefermentation}} \text{ and } PE_{\text{redfermentation}}$$

$$PE_{\text{fermentation}} = PE_{\text{redfermentation}}$$

$$PE_{\text{fermentation}} = 817,408 \text{ lb-VOC/year}$$

## 2. Annual PE for storage operations

The storage emissions will be calculated using the procedure described in the District's FYI 114. Breathing loss emissions are considered negligible for all storage tanks, since none of the tanks are subject to any significant diurnal temperature variations. The majority of the tanks (accounting for 96.3% of the total storage volume) are enclosed stainless steel tanks with pressure/vacuum relief valves and either insulation. Per FYI 114, breathing losses from insulated tanks may be ignored since the diurnal temperature swings that are primarily responsible for breathing emissions are significantly eradicated by insulation. The tanks are enclosed, equipped with pressure/vacuum relief valves. Storage emissions will therefore consist only of working loss emissions.

Since the emission factors for wine storage are the same for both white and red wine, emissions from storage tank operations are determined based on the throughput of the maximum quantity of wine the facility is able to produce. In the preceding sections, it was determined that the facility's wine production limiting factor for the red wine is the fermentation process and for the white wines is the total cooperage (combined fermentation and storage/processing capacity). Based on the production capacity, the facility's annual white wine production capacity is higher than the red wine production capacity; hence storage emissions will be based on the white wine production capacity. Based on cooperage limitations, white wine production capacity is 118.66 million gallons of per year.

Storage emissions are calculated as follows:

$$PE_{\text{storage}} = E_s \times T \times W_R$$

Where:

$E_s$  = wine storage emission factor based on District FYI-114 = 0.338 lb-VOC/1000 gallons of wine transferred for 23.9% alcohol wine

$T$  = Total post fermentation inter-tank transfers per batch of wine = 8

$W_W$  = maximum quantity of wine the facility can produce = 118.66 million gallons of white wine per year

$$\begin{aligned} PE_{\text{storage}} &= E_s \times T \times W_W \\ &= (0.338/1000) \times 8 \times (118.66) \times 10^6 \\ &= \mathbf{320,857 \text{ lb-VOC/year}} \end{aligned}$$

**APPENDIX L**  
**Compliance Certification**



## THE WINE GROUP

May 12, 2010

Joe Siongco  
San Joaquin Valley Air Pollution District  
1990 E. Gettysburg Ave.  
Fresno, CA 93726

Dear Joe:

The Wine Group's facilities that are classified as major stationary sources are in compliance or on a schedule for compliance with all applicable emission limitations and standards, as required by Rule 2201, Section 4.15.2. This includes the following facilities:

N-956	Franzia Winery – Ripon
C-120	Franzia Sanger
C-581	Golden State Vintners – Fresno
C-1353	Almaden Madera

If you have any questions, please call me at 559-528-3033.

Best regards,

Sue Giampietro  
Manager of Environmental Services

## **APPENDIX M**

### **Billing Information**

## BILLING INFORMATION

PERMIT NO.	FEE SCHEDULE	FEE DESCRIPTION
N - 956 - 11 - 2	3020-05 B	15,000 Gallon
N - 956 - 12 - 2	3020-05 B	15,000 Gallon
N - 956 - 13 - 2	3020-05 B	10,000 Gallon
N - 956 - 14 - 2	3020-05 B	10,000 Gallon
N - 956 - 15 - 2	3020-05 E	120,000 Gallon
N - 956 - 16 - 2	3020-05 E	120,000 Gallon
N - 956 - 17 - 2	3020-05 E	120,000 Gallon
N - 956 - 18 - 2	3020-05 E	120,000 Gallon
N - 956 - 19 - 2	3020-05 E	120,000 Gallon
N - 956 - 20 - 2	3020-05 E	120,000 Gallon
N - 956 - 21 - 2	3020-05 E	120,000 Gallon
N - 956 - 22 - 2	3020-05 C	30,000 Gallon
N - 956 - 23 - 2	3020-05 C	30,000 Gallon
N - 956 - 24 - 2	3020-05 C	30,000 Gallon
N - 956 - 25 - 2	3020-05 C	30,000 Gallon
N - 956 - 26 - 2	3020-05 C	20,000 Gallon
N - 956 - 27 - 2	3020-05 D	60,000 Gallon
N - 956 - 28 - 2	3020-05 D	60,000 Gallon
N - 956 - 29 - 2	3020-05 D	60,000 Gallon
N - 956 - 30 - 2	3020-05 D	60,000 Gallon
N - 956 - 31 - 2	3020-05 D	60,000 Gallon
N - 956 - 32 - 2	3020-05 B	12,000 Gallon
N - 956 - 33 - 2	3020-05 E	120,000 Gallon
N - 956 - 34 - 2	3020-05 E	120,000 Gallon
N - 956 - 35 - 2	3020-05 E	120,000 Gallon
N - 956 - 36 - 2	3020-05 B	15,000 Gallon
N - 956 - 37 - 2	3020-05 B	15,000 Gallon
N - 956 - 38 - 2	3020-05 C	30,000 Gallon
N - 956 - 39 - 2	3020-05 C	30,000 Gallon
N - 956 - 40 - 2	3020-05 C	30,000 Gallon
N - 956 - 41 - 2	3020-05 C	30,000 Gallon
N - 956 - 42 - 2	3020-05 B	5,000 Gallon
N - 956 - 43 - 2	3020-05 E	105,000 Gallon
N - 956 - 44 - 2	3020-05 E	105,000 Gallon
N - 956 - 45 - 2	3020-05 E	105,000 Gallon
N - 956 - 46 - 2	3020-05 E	105,000 Gallon
N - 956 - 47 - 2	3020-05 E	105,000 Gallon
N - 956 - 48 - 2	3020-05 E	105,000 Gallon
N - 956 - 49 - 2	3020-05 E	105,000 Gallon
N - 956 - 50 - 2	3020-05 E	105,000 Gallon
N - 956 - 51 - 2	3020-05 E	105,000 Gallon
N - 956 - 52 - 2	3020-05 E	105,000 Gallon
N - 956 - 53 - 2	3020-05 E	105,000 Gallon
N - 956 - 54 - 2	3020-05 E	106,000 Gallon
N - 956 - 55 - 2	3020-05 E	106,000 Gallon
N - 956 - 56 - 2	3020-05 E	106,000 Gallon
N - 956 - 57 - 2	3020-05 E	106,000 Gallon
N - 956 - 58 - 2	3020-05 E	106,000 Gallon
N - 956 - 59 - 2	3020-05 E	106,000 Gallon
N - 956 - 60 - 2	3020-05 E	106,000 Gallon
N - 956 - 61 - 2	3020-05 E	106,000 Gallon
N - 956 - 62 - 2	3020-05 E	106,000 Gallon
N - 956 - 63 - 2	3020-05 E	106,000 Gallon
N - 956 - 64 - 2	3020-05 E	106,000 Gallon

PERMIT NO.	FEE SCHEDULE	FEE DESCRIPTION
N - 956 - 65 - 2	3020-05 E	106,000 Gallon
N - 956 - 66 - 2	3020-05 E	106,000 Gallon
N - 956 - 67 - 2	3020-05 E	103,000 Gallon
N - 956 - 68 - 2	3020-05 E	103,000 Gallon
N - 956 - 69 - 2	3020-05 E	103,000 Gallon
N - 956 - 70 - 2	3020-05 E	103,000 Gallon
N - 956 - 71 - 2	3020-05 E	103,000 Gallon
N - 956 - 72 - 2	3020-05 E	217,000 Gallon
N - 956 - 73 - 2	3020-05 E	217,000 Gallon
N - 956 - 74 - 2	3020-05 E	217,000 Gallon
N - 956 - 75 - 2	3020-05 E	217,000 Gallon
N - 956 - 76 - 2	3020-05 E	217,000 Gallon
N - 956 - 77 - 2	3020-05 E	217,000 Gallon
N - 956 - 78 - 2	3020-05 E	217,000 Gallon
N - 956 - 79 - 2	3020-05 E	217,000 Gallon
N - 956 - 80 - 2	3020-05 E	217,000 Gallon
N - 956 - 81 - 2	3020-05 E	217,000 Gallon
N - 956 - 82 - 2	3020-05 E	217,000 Gallon
N - 956 - 83 - 2	3020-05 E	218,000 Gallon
N - 956 - 84 - 2	3020-05 E	218,000 Gallon
N - 956 - 85 - 2	3020-05 E	218,000 Gallon
N - 956 - 86 - 2	3020-05 E	218,000 Gallon
N - 956 - 87 - 2	3020-05 E	218,000 Gallon
N - 956 - 88 - 2	3020-05 E	218,000 Gallon
N - 956 - 89 - 2	3020-05 E	217,000 Gallon
N - 956 - 90 - 2	3020-05 E	217,000 Gallon
N - 956 - 91 - 2	3020-05 E	217,000 Gallon
N - 956 - 92 - 2	3020-05 E	217,000 Gallon
N - 956 - 93 - 2	3020-05 E	217,000 Gallon
N - 956 - 94 - 2	3020-05 E	217,000 Gallon
N - 956 - 95 - 2	3020-05 E	217,000 Gallon
N - 956 - 96 - 2	3020-05 E	217,000 Gallon
N - 956 - 97 - 2	3020-05 E	217,000 Gallon
N - 956 - 98 - 2	3020-05 E	217,000 Gallon
N - 956 - 99 - 2	3020-05 E	217,000 Gallon
N - 956 - 100 - 2	3020-05 E	217,000 Gallon
N - 956 - 101 - 2	3020-05 E	217,000 Gallon
N - 956 - 102 - 2	3020-05 E	217,000 Gallon
N - 956 - 103 - 2	3020-05 E	217,000 Gallon
N - 956 - 104 - 2	3020-05 E	217,000 Gallon
N - 956 - 105 - 2	3020-05 E	217,000 Gallon
N - 956 - 106 - 2	3020-05 E	217,000 Gallon
N - 956 - 107 - 2	3020-05 E	217,000 Gallon
N - 956 - 108 - 2	3020-05 E	217,000 Gallon
N - 956 - 109 - 2	3020-05 E	217,000 Gallon
N - 956 - 110 - 2	3020-05 E	217,000 Gallon
N - 956 - 111 - 2	3020-05 E	217,000 Gallon
N - 956 - 112 - 2	3020-05 E	217,000 Gallon
N - 956 - 113 - 2	3020-05 E	217,000 Gallon
N - 956 - 114 - 2	3020-05 E	217,000 Gallon
N - 956 - 115 - 2	3020-05 E	350,000 Gallon
N - 956 - 116 - 2	3020-05 E	350,000 Gallon
N - 956 - 117 - 2	3020-05 E	350,000 Gallon
N - 956 - 118 - 2	3020-05 E	323,000 Gallon
N - 956 - 119 - 2	3020-05 E	323,000 Gallon
N - 956 - 120 - 2	3020-05 E	323,000 Gallon



PERMIT NO.	FEE SCHEDULE	FEE DESCRIPTION
N - 956 - 177 - 2	3020-05 E	350,000 Gallon
N - 956 - 178 - 2	3020-05 E	350,000 Gallon
N - 956 - 179 - 2	3020-05 E	350,000 Gallon
N - 956 - 180 - 2	3020-05 E	350,000 Gallon
N - 956 - 181 - 2	3020-05 E	350,000 Gallon
N - 956 - 182 - 2	3020-05 E	350,000 Gallon
N - 956 - 183 - 2	3020-05 E	350,000 Gallon
N - 956 - 184 - 2	3020-05 E	350,000 Gallon
N - 956 - 185 - 2	3020-05 E	350,000 Gallon
N - 956 - 186 - 2	3020-05 E	350,000 Gallon
N - 956 - 187 - 2	3020-05 E	350,000 Gallon
N - 956 - 188 - 2	3020-05 E	350,000 Gallon
N - 956 - 189 - 2	3020-05 E	350,000 Gallon
N - 956 - 190 - 2	3020-05 F	650,000 Gallon
N - 956 - 191 - 2	3020-05 F	650,000 Gallon
N - 956 - 192 - 2	3020-05 F	650,000 Gallon
N - 956 - 193 - 2	3020-05 F	650,000 Gallon
N - 956 - 194 - 2	3020-05 F	650,000 Gallon
N - 956 - 195 - 2	3020-05 F	650,000 Gallon
N - 956 - 196 - 2	3020-05 F	650,000 Gallon
N - 956 - 197 - 2	3020-05 F	650,000 Gallon
N - 956 - 198 - 2	3020-05 F	650,000 Gallon
N - 956 - 199 - 2	3020-05 F	705,000 Gallon
N - 956 - 200 - 2	3020-05 F	705,000 Gallon
N - 956 - 201 - 2	3020-05 F	705,000 Gallon
N - 956 - 202 - 2	3020-05 F	705,000 Gallon
N - 956 - 203 - 1	3020-05 B	19,500 Gallon
N - 956 - 204 - 1	3020-05 B	19,500 Gallon
N - 956 - 205 - 1	3020-05 B	19,500 Gallon
N - 956 - 206 - 1	3020-05 B	19,500 Gallon
N - 956 - 207 - 1	3020-05 B	19,500 Gallon
N - 956 - 208 - 1	3020-05 B	19,500 Gallon
N - 956 - 209 - 1	3020-05 B	19,500 Gallon
N - 956 - 210 - 1	3020-05 B	19,500 Gallon
N - 956 - 211 - 1	3020-05 B	19,500 Gallon
N - 956 - 212 - 1	3020-05 B	19,500 Gallon
N - 956 - 213 - 1	3020-05 B	19,500 Gallon
N - 956 - 214 - 1	3020-05 B	19,500 Gallon
N - 956 - 215 - 1	3020-05 B	19,500 Gallon
N - 956 - 216 - 1	3020-05 B	19,500 Gallon
N - 956 - 217 - 1	3020-05 B	19,500 Gallon
N - 956 - 218 - 1	3020-05 B	19,500 Gallon
N - 956 - 236 - 0	3020-05 C	20,000 Gallon
N - 956 - 237 - 0	3020-05 C	20,000 Gallon
N - 956 - 238 - 0	3020-05 B	14,000 Gallon
N - 956 - 239 - 0	3020-05 B	14,000 Gallon
N - 956 - 240 - 0	3020-05 B	14,000 Gallon
N - 956 - 241 - 0	3020-05 B	14,000 Gallon
N - 956 - 242 - 0	3020-05 B	14,000 Gallon
N - 956 - 243 - 0	3020-05 B	14,000 Gallon
N - 956 - 244 - 0	3020-05 B	14,000 Gallon
N - 956 - 245 - 0	3020-05 B	14,000 Gallon
N - 956 - 246 - 0	3020-05 B	14,000 Gallon
N - 956 - 247 - 0	3020-05 B	14,000 Gallon
N - 956 - 248 - 0	3020-05 B	14,000 Gallon
N - 956 - 249 - 0	3020-05 B	14,000 Gallon

# **APPENDIX N**

## **Draft ATCs**

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** N-956-11-2

**LEGAL OWNER OR OPERATOR:** THE WINE GROUP, INC.  
**MAILING ADDRESS:** ATTN: A/P 2827  
P O BOX 90  
TRACY, CA 95378-0090

**LOCATION:** 17000 E HIGHWAY 120  
RIPON, CA 95366

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 15,000 GALLON STAINLESS STEEL WINE STORAGE TANK B1 WITH PRESSURE/VACUUM VALVE: ESTABLISH SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS AND DESIGNATE AS RED AND WHITE WINE FERMENTATION AND STORAGE TANK

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. The daily VOC emissions rate for red wine fermentation shall not exceed 3.46 lb/1000 gallons. [District Rule 2201]
3. The daily VOC emissions rate for white wine fermentation shall not exceed 1.62 lb/1000 gallons. [District Rule 2201]
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201]
5. When used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694, 5.2.1]
6. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694, 5.2.1]

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

**DAVID WARNER, Director of Permit Services**  
N-956-11-2 : Jun 15 2010 9:07AM -- SIONGCOJ : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694, 5.2.2]
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201]
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twice the maximum nominal tank capacity stated in the equipment description. [District Rule 2201]
10. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rule 4694, 6.4.1]
11. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694, 6.4.2]
12. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201]
13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 581,212 lb. [District Rule 2201]
14. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201]
15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201]
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 1070 and 2201]
17. Separate annual records of total red wine and total white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury, shall be maintained. [District Rules 1070 and 2201]
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** N-956-12-2

**LEGAL OWNER OR OPERATOR:** THE WINE GROUP, INC.

**MAILING ADDRESS:** ATTN: A/P 2827  
P O BOX 90  
TRACY, CA 95378-0090

**LOCATION:** 17000 E HIGHWAY 120  
RIPON, CA 95366

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 15,000 GALLON STAINLESS STEEL WINE STORAGE TANK B2 WITH PRESSURE/VACUUM VALVE: ESTABLISH SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS AND DESIGNATE AS RED AND WHITE WINE FERMENTATION AND STORAGE TANK

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. The daily VOC emissions rate for red wine fermentation shall not exceed 3.46 lb/1000 gallons. [District Rule 2201]
3. The daily VOC emissions rate for white wine fermentation shall not exceed 1.62 lb/1000 gallons. [District Rule 2201]
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201]
5. When used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694, 5.2.1]
6. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694, 5.2.1]

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

**DRAFT**

DAVID WARNER, Director of Permit Services  
N-956-12-2: Jun 15 2010 9:08AM -- SIGNOCOJ : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694, 5.2.2]
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201]
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twice the maximum nominal tank capacity stated in the equipment description. [District Rule 2201]
10. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rule 4694, 6.4.1]
11. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694, 6.4.2]
12. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201]
13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 581,212 lb. [District Rule 2201]
14. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201]
15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201]
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 1070 and 2201]
17. Separate annual records of total red wine and total white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury, shall be maintained. [District Rules 1070 and 2201]
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** N-956-13-2

**LEGAL OWNER OR OPERATOR:** THE WINE GROUP, INC.

**MAILING ADDRESS:** ATTN: A/P 2827  
P O BOX 90  
TRACY, CA 95378-0090

**LOCATION:** 17000 E HIGHWAY 120  
RIPON, CA 95366

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 10,000 GALLON STAINLESS STEEL WINE STORAGE TANK 24 WITH PRESSURE/VACUUM VALVE: ESTABLISH SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS AND DESIGNATE AS RED AND WHITE WINE FERMENTATION AND STORAGE TANK

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. The daily VOC emissions rate for red wine fermentation shall not exceed 3.46 lb/1000 gallons. [District Rule 2201]
3. The daily VOC emissions rate for white wine fermentation shall not exceed 1.62 lb/1000 gallons. [District Rule 2201]
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201]
5. When used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694, 5.2.1]
6. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694, 5.2.1]

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

**DAVID WARNER**, Director of Permit Services  
N-956-13-2 - Jun 15 2010 9:08AM - SIONGCOJ - Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694, 5.2.2]
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201]
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twice the maximum nominal tank capacity stated in the equipment description. [District Rule 2201]
10. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rule 4694, 6.4.1]
11. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694, 6.4.2]
12. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201]
13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 581,212 lb. [District Rule 2201]
14. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201]
15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201]
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 1070 and 2201]
17. Separate annual records of total red wine and total white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury, shall be maintained. [District Rules 1070 and 2201]
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** N-956-14-2

**LEGAL OWNER OR OPERATOR:** THE WINE GROUP, INC.  
**MAILING ADDRESS:** ATTN: A/P 2827  
P O BOX 90  
TRACY, CA 95378-0090

**LOCATION:** 17000 E HIGHWAY 120  
RIPON, CA 95366

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 10,000 GALLON STAINLESS STEEL WINE STORAGE TANK 39 WITH PRESSURE/VACUUM VALVE: ESTABLISH SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS AND DESIGNATE AS RED AND WHITE WINE FERMENTATION AND STORAGE TANK

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. The daily VOC emissions rate for red wine fermentation shall not exceed 3.46 lb/1000 gallons. [District Rule 2201]
3. The daily VOC emissions rate for white wine fermentation shall not exceed 1.62 lb/1000 gallons. [District Rule 2201]
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201]
5. When used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694, 5.2.1]
6. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694, 5.2.1]

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

**DAVID WARNER**, Director of Permit Services  
N-956-14-2: Jun 15 2010 9 08AM -- SIONGCOJ Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694, 5.2.2]
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201]
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twice the maximum nominal tank capacity stated in the equipment description. [District Rule 2201]
10. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rule 4694, 6.4.1]
11. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694, 6.4.2]
12. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201]
13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 581,212 lb. [District Rule 2201]
14. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201]
15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201]
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 1070 and 2201]
17. Separate annual records of total red wine and total white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury, shall be maintained. [District Rules 1070 and 2201]
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** N-956-15-2

**LEGAL OWNER OR OPERATOR:** THE WINE GROUP, INC.  
**MAILING ADDRESS:** ATTN: A/P 2827  
P O BOX 90  
TRACY, CA 95378-0090

**LOCATION:** 17000 E HIGHWAY 120  
RIPON, CA 95366

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 120,000 GALLON STAINLESS STEEL WINE STORAGE TANK 44 WITH PRESSURE/VACUUM VALVE: ESTABLISH SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS AND DESIGNATE AS RED AND WHITE WINE FERMENTATION AND STORAGE TANK

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. The daily VOC emissions rate for red wine fermentation shall not exceed 3.46 lb/1000 gallons. [District Rule 2201]
3. The daily VOC emissions rate for white wine fermentation shall not exceed 1.62 lb/1000 gallons. [District Rule 2201]
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201]
5. When used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694, 5.2.1]
6. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694, 5.2.1]

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

**DAVID WARNER, Director of Permit Services**

N-956-15-2 : Jun 15 2010 9:08AM -- SIONGCOJ : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694, 5.2.2]
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201]
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twice the maximum nominal tank capacity stated in the equipment description. [District Rule 2201]
10. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rule 4694, 6.4.1]
11. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694, 6.4.2]
12. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201]
13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 581,212 lb. [District Rule 2201]
14. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201]
15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201]
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 1070 and 2201]
17. Separate annual records of total red wine and total white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury, shall be maintained. [District Rules 1070 and 2201]
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** N-956-16-2

**LEGAL OWNER OR OPERATOR:** THE WINE GROUP, INC.  
**MAILING ADDRESS:** ATTN: A/P 2827  
P O BOX 90  
TRACY, CA 95378-0090

**LOCATION:** 17000 E HIGHWAY 120  
RIPON, CA 95366

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 120,000 GALLON STAINLESS STEEL WINE STORAGE TANK 45 WITH PRESSURE/VACUUM VALVE: ESTABLISH SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS AND DESIGNATE AS RED AND WHITE WINE FERMENTATION AND STORAGE TANK

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. The daily VOC emissions rate for red wine fermentation shall not exceed 3.46 lb/1000 gallons. [District Rule 2201]
3. The daily VOC emissions rate for white wine fermentation shall not exceed 1.62 lb/1000 gallons. [District Rule 2201]
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201]
5. When used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694, 5.2.1]
6. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694, 5.2.1]

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

**DAVID WARNER, Director of Permit Services**

N-956-16-2 ; Jun 15 2010 9:08AM - SIONGCOJ ; Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694, 5.2.2]
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201]
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twice the maximum nominal tank capacity stated in the equipment description. [District Rule 2201]
10. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rule 4694, 6.4.1]
11. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694, 6.4.2]
12. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201]
13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 581,212 lb. [District Rule 2201]
14. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201]
15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201]
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 1070 and 2201]
17. Separate annual records of total red wine and total white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury, shall be maintained. [District Rules 1070 and 2201]
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** N-956-17-2

**LEGAL OWNER OR OPERATOR:** THE WINE GROUP, INC.

**MAILING ADDRESS:** ATTN: A/P 2827  
P O BOX 90  
TRACY, CA 95378-0090

**LOCATION:** 17000 E HIGHWAY 120  
RIPON, CA 95366

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 120,000 GALLON STAINLESS STEEL WINE STORAGE TANK 46 WITH PRESSURE/VACUUM VALVE: ESTABLISH SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS AND DESIGNATE AS RED AND WHITE WINE FERMENTATION AND STORAGE TANK

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. The daily VOC emissions rate for red wine fermentation shall not exceed 3.46 lb/1000 gallons. [District Rule 2201]
3. The daily VOC emissions rate for white wine fermentation shall not exceed 1.62 lb/1000 gallons. [District Rule 2201]
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201]
5. When used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694, 5.2.1]
6. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694, 5.2.1]

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

**DRAFT**

DAVID WARNER, Director of Permit Services

N-956-17-2; Jun 15 2010 9 08AM -- SIONGCOJ : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694, 5.2.2]
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201]
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twice the maximum nominal tank capacity stated in the equipment description. [District Rule 2201]
10. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rule 4694, 6.4.1]
11. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694, 6.4.2]
12. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201]
13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 581,212 lb. [District Rule 2201]
14. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201]
15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201]
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 1070 and 2201]
17. Separate annual records of total red wine and total white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury, shall be maintained. [District Rules 1070 and 2201]
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** N-956-18-2

**LEGAL OWNER OR OPERATOR:** THE WINE GROUP, INC.

**MAILING ADDRESS:**

ATTN: A/P 2827  
P O BOX 90  
TRACY, CA 95378-0090

**LOCATION:**

17000 E HIGHWAY 120  
RIPON, CA 95366

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 120,000 GALLON STAINLESS STEEL WINE STORAGE TANK 47 WITH PRESSURE/VACUUM VALVE: ESTABLISH SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS AND DESIGNATE AS RED AND WHITE WINE FERMENTATION AND STORAGE TANK

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. The daily VOC emissions rate for red wine fermentation shall not exceed 3.46 lb/1000 gallons. [District Rule 2201]
3. The daily VOC emissions rate for white wine fermentation shall not exceed 1.62 lb/1000 gallons. [District Rule 2201]
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201]
5. When used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694, 5.2.1]
6. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694, 5.2.1]

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

**DRAFT**

DAVID WARNER, Director of Permit Services  
N-956-18-2; Jun 15 2010 9 08AM - SIONGCOJ : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694, 5.2.2]
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201]
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twice the maximum nominal tank capacity stated in the equipment description. [District Rule 2201]
10. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rule 4694, 6.4.1]
11. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694, 6.4.2]
12. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201]
13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 581,212 lb. [District Rule 2201]
14. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201]
15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201]
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 1070 and 2201]
17. Separate annual records of total red wine and total white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury, shall be maintained. [District Rules 1070 and 2201]
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** N-956-19-2

**LEGAL OWNER OR OPERATOR:** THE WINE GROUP, INC.

**MAILING ADDRESS:** ATTN: A/P 2827  
P O BOX 90  
TRACY, CA 95378-0090

**LOCATION:** 17000 E HIGHWAY 120  
RIPON, CA 95366

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 120,000 GALLON STAINLESS STEEL WINE STORAGE TANK 48 WITH PRESSURE/VACUUM VALVE: ESTABLISH SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS AND DESIGNATE AS RED AND WHITE WINE FERMENTATION AND STORAGE TANK

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. The daily VOC emissions rate for red wine fermentation shall not exceed 3.46 lb/1000 gallons. [District Rule 2201]
3. The daily VOC emissions rate for white wine fermentation shall not exceed 1.62 lb/1000 gallons. [District Rule 2201]
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201]
5. When used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694, 5.2.1]
6. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694, 5.2.1]

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

**DAVID WARNER**, Director of Permit Services  
N-956-19-2 : Jun 15 2010 9:08AM - SIONGCOJ : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694, 5.2.2]
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201]
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twice the maximum nominal tank capacity stated in the equipment description. [District Rule 2201]
10. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rule 4694, 6.4.1]
11. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694, 6.4.2]
12. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201]
13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 581,212 lb. [District Rule 2201]
14. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201]
15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201]
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 1070 and 2201]
17. Separate annual records of total red wine and total white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury, shall be maintained. [District Rules 1070 and 2201]
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** N-956-20-2

**LEGAL OWNER OR OPERATOR:** THE WINE GROUP, INC.

**MAILING ADDRESS:** ATTN: A/P 2827  
P O BOX 90  
TRACY, CA 95378-0090

**LOCATION:** 17000 E HIGHWAY 120  
RIPON, CA 95366

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 120,000 GALLON STAINLESS STEEL WINE STORAGE TANK 49 WITH PRESSURE/VACUUM VALVE: ESTABLISH SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS AND DESIGNATE AS RED AND WHITE WINE FERMENTATION AND STORAGE TANK

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. The daily VOC emissions rate for red wine fermentation shall not exceed 3.46 lb/1000 gallons. [District Rule 2201]
3. The daily VOC emissions rate for white wine fermentation shall not exceed 1.62 lb/1000 gallons. [District Rule 2201]
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201]
5. When used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694, 5.2.1]
6. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694, 5.2.1]

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

**DAVID WARNER**, Director of Permit Services

N-956-20-2 : Jun 15 2010 9:06AM - SIONGCOJ : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694, 5.2.2]
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201]
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twice the maximum nominal tank capacity stated in the equipment description. [District Rule 2201]
10. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rule 4694, 6.4.1]
11. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694, 6.4.2]
12. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201]
13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 581,212 lb. [District Rule 2201]
14. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201]
15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201]
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 1070 and 2201]
17. Separate annual records of total red wine and total white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury, shall be maintained. [District Rules 1070 and 2201]
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** N-956-21-2

**LEGAL OWNER OR OPERATOR:** THE WINE GROUP, INC.

**MAILING ADDRESS:** ATTN: A/P 2827  
P O BOX 90  
TRACY, CA 95378-0090

**LOCATION:** 17000 E HIGHWAY 120  
RIPON, CA 95366

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 120,000 GALLON STAINLESS STEEL WINE STORAGE TANK 50 WITH PRESSURE/VACUUM VALVE: ESTABLISH SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS AND DESIGNATE AS RED AND WHITE WINE FERMENTATION AND STORAGE TANK

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. The daily VOC emissions rate for red wine fermentation shall not exceed 3.46 lb/1000 gallons. [District Rule 2201]
3. The daily VOC emissions rate for white wine fermentation shall not exceed 1.62 lb/1000 gallons. [District Rule 2201]
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201]
5. When used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694, 5.2.1]
6. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694, 5.2.1]

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

**DAVID WARNER, Director of Permit Services**

N-956-21-2 : Jun 15 2010 9:08AM -- S10NGC0J : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694, 5.2.2]
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201]
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twice the maximum nominal tank capacity stated in the equipment description. [District Rule 2201]
10. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rule 4694, 6.4.1]
11. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694, 6.4.2]
12. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201]
13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 581,212 lb. [District Rule 2201]
14. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201]
15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201]
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 1070 and 2201]
17. Separate annual records of total red wine and total white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury, shall be maintained. [District Rules 1070 and 2201]
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

**ISSUANCE DATE: DRAFT**

**PERMIT NO:** N-956-22-2

**LEGAL OWNER OR OPERATOR:** THE WINE GROUP, INC.

**MAILING ADDRESS:** ATTN: A/P 2827  
P O BOX 90  
TRACY, CA 95378-0090

**LOCATION:** 17000 E HIGHWAY 120  
RIPON, CA 95366

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 30,000 GALLON STAINLESS STEEL WINE STORAGE TANK 51 WITH PRESSURE/VACUUM VALVE: ESTABLISH SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS AND DESIGNATE AS RED AND WHITE WINE FERMENTATION AND STORAGE TANK

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. The daily VOC emissions rate for red wine fermentation shall not exceed 3.46 lb/1000 gallons. [District Rule 2201]
3. The daily VOC emissions rate for white wine fermentation shall not exceed 1.62 lb/1000 gallons. [District Rule 2201]
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201]
5. When used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694, 5.2.1]
6. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694, 5.2.1]

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services

N-956-22-2; Jun 15 2010 9:09AM -- SIONGCOJ : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694, 5.2.2]
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201]
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twice the maximum nominal tank capacity stated in the equipment description. [District Rule 2201]
10. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rule 4694, 6.4.1]
11. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694, 6.4.2]
12. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201]
13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 581,212 lb. [District Rule 2201]
14. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201]
15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201]
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 1070 and 2201]
17. Separate annual records of total red wine and total white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury, shall be maintained. [District Rules 1070 and 2201]
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

**PERMIT NO:** N-956-23-2

**LEGAL OWNER OR OPERATOR:** THE WINE GROUP, INC.

**MAILING ADDRESS:** ATTN: A/P 2827  
P O BOX 90  
TRACY, CA 95378-0090

**LOCATION:** 17000 E HIGHWAY 120  
RIPON, CA 95366

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 30,000 GALLON STAINLESS STEEL WINE STORAGE TANK 52 WITH PRESSURE/VACUUM VALVE: ESTABLISH SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS AND DESIGNATE AS RED AND WHITE WINE FERMENTATION AND STORAGE TANK

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. The daily VOC emissions rate for red wine fermentation shall not exceed 3.46 lb/1000 gallons. [District Rule 2201]
3. The daily VOC emissions rate for white wine fermentation shall not exceed 1.62 lb/1000 gallons. [District Rule 2201]
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201]
5. When used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694, 5.2.1]
6. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694, 5.2.1]

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

**DAVID WARNER, Director of Permit Services**

N-956-23-2: Jun 15 2010 9:09AM - SIONGCOJ : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694, 5.2.2]
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201]
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twice the maximum nominal tank capacity stated in the equipment description. [District Rule 2201]
10. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rule 4694, 6.4.1]
11. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694, 6.4.2]
12. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201]
13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 581,212 lb. [District Rule 2201]
14. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201]
15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201]
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 1070 and 2201]
17. Separate annual records of total red wine and total white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury, shall be maintained. [District Rules 1070 and 2201]
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694]

DRAFT

San Joaquin Valley  
Air Pollution Control District

**AUTHORITY TO CONSTRUCT**

ISSUANCE DATE: DRAFT  
**DRAFT**

PERMIT NO: N-956-24-2

LEGAL OWNER OR OPERATOR: THE WINE GROUP, INC.  
MAILING ADDRESS: ATTN: AP 2827  
P O BOX 90  
TRACY, CA 95378-0090

LOCATION: 17000 E HIGHWAY 120  
RIPON, CA 95366

**EQUIPMENT DESCRIPTION:**

MODIFICATION OF 30,000 GALLON STAINLESS STEEL WINE STORAGE TANK 53 WITH PRESSURE/VACUUM VALVE: ESTABLISH SPECIFIC LIMITING CONDITION FOR VOC EMISSIONS AND DESIGNATE AS RED AND WHITE WINE FERMENTATION AND STORAGE TANK

**CONDITIONS**

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. The daily VOC emissions rate for red wine fermentation shall not exceed 3.46 lb/1000 gallons. [District Rule 2201]
3. The daily VOC emissions rate for white wine fermentation shall not exceed 1.62 lb/1000 gallons. [District Rule 2201]
4. The average fermentation temperature of each batch of must fermented in this tank shall not exceed 95 degrees Fahrenheit, calculated as the average of all temperature measurements for the batch taken at least every 12 hours over the course of the fermentation. [District Rule 2201]
5. When used for wine storage, this tank shall be equipped with and operated with a pressure-vacuum relief valve, which shall operate within 10% of the maximum allowable working pressure of the tank, operate in accordance with the manufacturer's instructions, and be permanently labeled with the operating pressure settings. [District Rules 2201 and 4694, 5.2.1]
6. When this tank is used for wine storage, the pressure-vacuum relief valve and storage tank shall remain in a gas-tight condition, except when the operating pressure of the tank exceeds the valve set pressure. A gas-tight condition shall be determined by measuring the gas leak in accordance with the procedures in EPA Method 21. [District Rules 2201 and 4694, 5.2.1]

CONDITIONS CONTINUE ON NEXT PAGE

**YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (209) 557-6400 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT.** This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director APCO

**DAVID WARNER, Director of Permit Services**  
N-956-24-2 ; Jun 15 2010 9 09AM - SIONGCOJ : Joint Inspection NOT Required

7. The temperature of the wine stored in this tank shall be maintained at or below 75 degrees Fahrenheit. The temperature of the stored wine shall be determined and recorded at least once per week. For each batch of wine, the operator shall achieve the storage temperature of 75 degrees Fahrenheit or less within 60 days after completing fermentation, and shall maintain records to show when the required storage temperature of 75 degrees Fahrenheit or less was achieved. [District Rules 2201 and 4694, 5.2.2]
8. The ethanol content of wine stored in this tank shall not exceed 23.9 percent by volume. [District Rule 2201]
9. When this tank is used for wine storage, the daily tank throughput, in gallons, shall not exceed twice the maximum nominal tank capacity stated in the equipment description. [District Rule 2201]
10. For each batch of must fermented in this tank, the operator shall record the fermentation completion date, the total gallons of must fermented, the average fermentation temperature and uncontrolled fermentation emissions and fermentation emission reductions (calculated per the emission factors given in District Rule 4694). The information shall be recorded by the tank Permit to Operate number and by wine type, stated as either red wine or white wine. [District Rule 4694, 6.4.1]
11. When this tank is used for wine storage, the operator shall record, on a weekly basis, the total gallons of wine contained in the tank and the maximum temperature of the stored wine. [District Rule 4694, 6.4.2]
12. When this tank is used for wine storage, daily throughput records, including records of filling and emptying operations, the dates of such operations, a unique identifier for each batch, the volume percent ethanol in the batch, and the volume of wine transferred, shall be maintained. [District Rules 1070 and 2201]
13. Total annual VOC emissions from all wine fermentation and wine storage operations at this facility shall not exceed 581,212 lb. [District Rule 2201]
14. Total annual VOC emissions from wine fermentation operations shall be determined by the following formula: Total annual VOC emissions = (Total Annual Red Wine Production - gallons) x (6.2 lb-VOC/1000 gallons) + (Total Annual White Wine Production - gallons) x (2.5 lb-VOC/1000 gallons). [District Rule 2201]
15. Total annual VOC emissions from wine storage operations may be determined using the total annual wine throughput and a single storage emissions factor based on the average ethanol content of the annual wine throughput; or using the throughputs for different batches of wine and batch-specific storage emissions factors based on the ethanol content of each batch. [District Rule 2201]
16. Records of total annual fermentation and total annual storage emissions, including calculation methods and parameters used, shall be maintained. [District Rule 1070 and 2201]
17. Separate annual records of total red wine and total white wine produced by fermentation at this facility, based on values reported to the Alcohol and Tobacco Tax and Trade Bureau (TTB), U.S. Department of the Treasury, shall be maintained. [District Rules 1070 and 2201]
18. All records shall be retained on-site for a period of at least five years and made available for District inspection upon request. [District Rules 1070, 2201 and 4694]

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