Santa Barbara APCD BACT Determination for Wine Fermentation Tanks: Closed-Top ≤30,000 gallons (June 5, 2018)

Central Coast Wine Services, 2717 Aviation Way, Suite 101, Santa Maria, CA

Chiller Condenser Info
Manufacturer: EcoPAS Chiller Condenser System
Model: PAS-100

Operation Schedule:	24	hr/day	223 days/yr
Capture & Control Efficiency:	67	%	
Life	15	years	
Interest rate:	4	%	

Capital Cost

Equipment	$	282,321
Direct Installation	$	229,152
Indirect Installation	$	53,218
Total Capital	$	564,691

Operating Cost

Direct & Indirect	$	35,902
Total Average Annual	$	35,902

PVF		11.118
Present Value of Capital Costs	$	564,691
Present Value of Annual Costs (15 years @ 4%)	$	399,172
Total 15-Year Capital Cost	$	963,863

Emissions reduction (tons/year)		**7.5**
Emissions reduction (tons/Life)		113
Cost per ton of ROG reduction	$	8,568

MSBACT maximum cost effectiveness ROG ($/ton)	**$**	**30,231**	**AVERAGE 2nd Qtr 2018**
	COST EFFECTIVE		
	$	*90,694*	**INCREMENTAL 2nd Qtr 2018**

Notes:
- Calculations were based on cost info provided by control equipment suppliers EcoPASI /NoMoVo and SBCAPCD
- Emissions were based on SBCAPCD Winery Calculation spreadsheet found online at https://www.ourair.org/wineries/
- Maximum allowed cost effectiveness was based on 2nd quarter 2018 Marshall & Swift inde›
- Incremental cost effectiveness looks at the difference in cost and emissions between the proposed MSBACT and current BACT
- In accordance with H&SC 40440(c) the proposed MSBACT must be less than the District's established Incremental cost-effectiveness value

Santa Barbara APCD BACT Determination for Wine Fermentation Tanks: Closed-Top≤30,000 gallons (June 5, 2018)

Central Coast Wine Services, 2717 Aviation Way, Suite 101, Santa Maria, CA

Water Scrubber Info

Manufacturer: NoMoVo water scrubber
Model: NMV4-1836

Operation Schedule:	24	hr/day	223 days/yr
Capture & Control Efficiency:	67	%	
Life	15	years	
Interest rate:	4	%	

Capital Cost

Equipment	$	295,851
Direct Installation	$	137,409
Indirect Installation	$	66,003
Total Capital	$	499,263

Operating Cost

Direct & Indirect	$	39,540
Total Average Annual	$	39,540

PVF		11.118
Present Value of Capital Costs	$	499,263
Present Value of Annual Costs (15 years @ 4%)	$	439,621
Total 15-Year Capital Cost	$	938,884

Emissions reduction (tons/year)		**7.5**	
Emissions reduction (tons/Life)		113	
Cost per ton of ROG reduction	$	8,346	
MSBACT maximum cost effectiveness ROG ($/ton)	**$**	**30,231**	**AVERAGE 2nd Qtr 2018**
	COST EFFECTIVE		
	$	*90,694*	**INCREMENTAL 2nd Qtr 2018**

Notes:

- Calculations were based on cost info provided by control equipment suppliers EcoPASI /NoMoVo and SBCAPCD
- Emissions were based on SBCAPCD Winery Calculation spreadsheet found online at https://www.ourair.org/wineries/
- Maximum allowed cost effectiveness was based on 2nd quarter 2018 Marshall & Swift index
- Incremental cost effectiveness looks at the difference in cost and emissions between the proposed MSBACT and current BACT
- In accordance with H&SC 40440(c) the proposed MSBACT must be less than the District's established Incremental cost-effectiveness value

Cost Effectiveness Calculations for Low NOx burner upgrade on Regenerative Thermal Oxidizer (RTO) - Fender Musical Instrumen

Based on info provided by Fender Musical Instruments on January 2020

Emission reduction:

NOx reduction from 60 ppm (0.070 lbs/MMBtu) to 30 ppm (0.035 lbs/MMBtu) = 0.035 lbs/MMBtu reduction
CO reduction from 2000 ppm allowed under Rule 407 to permit limit of 400 ppm per source test of 12/17/18

Low NOx burner Info
Manufacturer: Adwest
Model: Retox 40.0
Rating/Fuel: 11,000,000 Btu/hr

Operation Schedule:	24 hr/day	6 days/week	52 weeks/year
RTO Average Capacity:	80 %		
Life	10 years		
Interest rate:	4 %		

Capital Cost

Equipment & Installation	$	67,947
Total Capital	$	67,947

Operating Cost

Direct & Indirect	$	7,000
Total Average Annual	$	7,000

PVF		8.11
Present Value of Capital Costs	$	67,947
Present Value of Annual Costs (10 years @ 4%)	$	56,776
Total 10-Year Capital Cost	$	124,723

NOx emissions reductions (lbs/day)		**7**
NOx emissions reduction (tons/10-year life)		**11.5**
CO emissions reductions (lbs/day)		**5760**
CO emissions reduction (tons/10-year life)		**10512**

Cost per ton of NOx reduction	**$**	**10,816**
Cost per ton of CO reduction	**$**	**12**

MSBACT maximum cost effectiveness NOx ($/ton)	**$**	**28,585**	**AVERAGE 2nd Qtr 2018**	**COST EFFECTIVE**
	$	**85,606**	**INCREMENTAL 2nd Qtr 2018**	**COST EFFECTIVE**
MSBACT maximum cost effectiveness CO ($/ton)	**$**	**599**	**AVERAGE 2nd Qtr 2018**	**COST EFFECTIVE**
	$	**1,721**	**INCREMENTAL 2nd Qtr 2018**	**COST EFFECTIVE**

Notes:
- Equipment cost based on data provided by Fender Musical Instruments
- RTO burner is essentially maintenance free (except for the cost of natural gas) since it does not need much tuning.
  However the RTO has many filters and pre-filters along with motors and fan replacement from time to time
- Maximum allowed cost effectiveness was based on 2nd quarter 2018 Marshall & Swift index
- Incremental cost effectiveness looks at the difference in cost and emissions between the proposed MSBACT and current BACT
- In accordance with H&SC 40440(c) the proposed MSBACT must be less than the District's established Incremental cost-effectiveness valu