



Proposed Updates to BACT Guidelines

BACT Scientific Review
Committee

February 25, 2020

Recent Update to BACT Guidelines & Webpage

Approved @ February 1, 2019 Board Meeting

- Overview, Parts A, B, C, and D
- Maintained consistency with recent changes to SCAQMD rules, State and Federal requirements
- BACT webpage (interactive and User Friendly)
- Referenced Engineering & Permitting policy preventing circumvention of BACT requirement for emission increase of any nonattainment air contaminant, any ozone depleting compound, or ammonia ≥ 1 lb/day within a 5-year period



Proposed Updates to BACT Guidelines

- Administratively change SCAQMD to South Coast AQMD in:
 - Table of Contents, Overview, Parts A, C, D, and E
- Part B, Major Polluting Facilities (LAER/BACT) – Section I
 - New Listings & Updated Listing
- Part C, Policy and Procedures for Non-major Polluting Facilities
 - Update Maximum Cost Effectiveness Criteria in Table 5
- Part D, Non-Major Polluting Facilities (BACT)
 - New Listings & Updated Listing
 - Clarification/updates to existing Listings

Part B- LAER/BACT Determination

Section I: New Proposed Listing



Regenerative Thermal Oxidizer,
Natural Gas Fired (burner only)

Achieved In Practice: 1 example

Source Test showing emission limits compliance

Control set point for retention chamber at 1400°F

NOx limit: 30 ppmv on a dry basis @ 3% O₂



Part B- LAER/BACT Determination

Section I: New Proposed Listing



Recuperative Thermal Oxidizer,
Natural Gas Fired (burner only)

Achieved In Practice: 1 example

Source Test showing emission limits compliance

Control set point for retention chamber at 1400 °F

NO_x limit: 30 ppmv / CO limit: 250 ppmv on a dry
basis @ 3% O₂



Part B- LAER/BACT Determination

Section I: New Proposed Listing



Flare - Liquid Transfer and Handling Marine Loading

Achieved In Practice: 1 example

Source Test showing emission limits compliance

Control set point for retention chamber at 1400 °F

NO_x limit: 30 ppmv and CO limit: 10 ppmv on a dry basis @ 3% O₂

Part B- LAER/BACT Determination

Section I: New Proposed Listing



Process Heater – Non-Refinery,
Thermal Fluid Heater, Natural Gas Fired

Achieved In Practice: 2 examples

Source Test showing emission limits compliance

NO_x limit: 9 ppmv and CO limit: 100 ppmv on a
dry basis @ 3% O₂



Part B- LAER/BACT Determination

Section I: New Proposed Listing



I.C. Engine, Stationary, 147 & 385 BHP, Non-Emergency, Electrical Generation with SCR

Achieved In Practice: 2 examples

Source Test showing emission limits compliance

NO_x limit: 0.07 lb/MW-hr, VOC limit: 0.10 lb/MW-hr and CO limit: 0.20 lb/MW-hr



Part B- LAER/BACT Determination

Section I: New Proposed Listing



Duct Burner – Refinery Fuel Gas

Achieved In Practice: 1 example

CEMS data showing emission limits compliance

Sulfur limit: 40 ppm, rolling 1-hr avg. period and
30 ppm, rolling 24-hr avg. period

Part B- LAER/BACT Determination

Section I: New Proposed Listing



Aluminum Heat Treating Oven
5.47 MM Btu/hr, Billet Temp < 970°F

Achieved In Practice: 1 example

Source Test showing emission limits compliance

NOx limit: 25 ppmv @ 3% O₂

Part B- LAER/BACT Determination

Section I: Proposed Listing Update



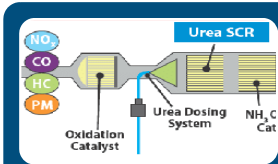
Gas Turbine – Simple Cycle, Natural Gas

Achieved In Practice: 1 example

Source Test showing emission limits compliance

Update NO_x limit from 2.5 ppmv to 2.3 ppmv
CO limit: 4 ppmv and NH₃ slip limit: 5 ppmv on a
dry basis @ 15% O₂

Part D- BACT Determination New Proposed Listing



Stationary Non-Emergency Electrical and non-Electrical Engines

Achieved In Practice: examples

Source Test showing emission limits compliance

Ammonia Slip limit: 10 ppm → PM
Baseline → 10 ppm

Cost-effectiveness Evaluation



Part D- BACT Determination New Proposed Listing



Fermentation, Beer and Wine - Tanks
Closed-Top \leq 30,000 gallons

Achieved In Practice: 1 example
Santa Barbara APCD

Source Test showing emission limits compliance

For VOC: Water Scrubber or Chiller Condenser
with 67% overall control eff. averaged over
length of fermentation season

Cost-effectiveness Evaluation



Part D- BACT Determination New Proposed Listing

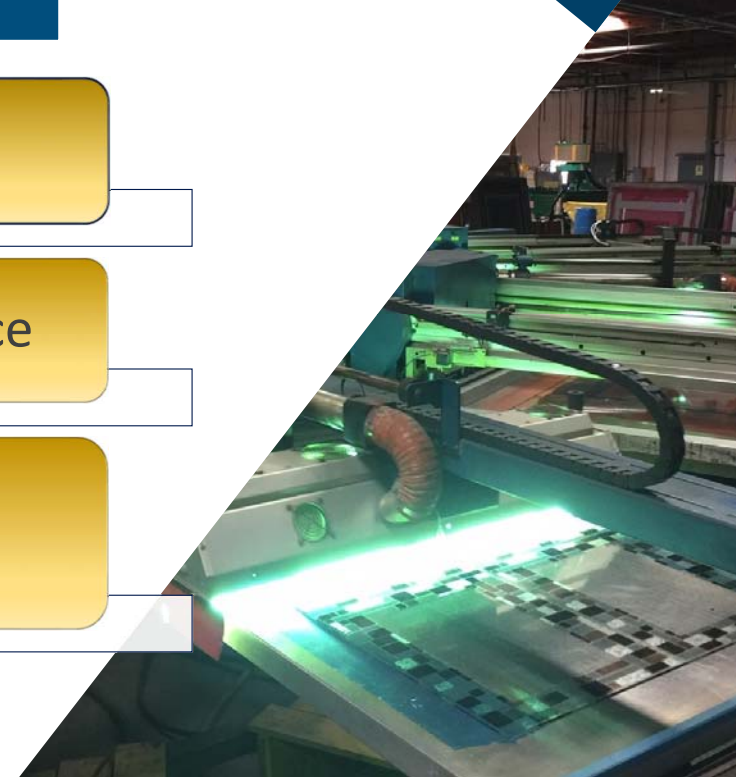


Glass Screen Printing – Flat Glass

Achieved In Practice: 1 example

Source Test showing emission limits compliance

For VOC: Compliance with Rule 1145 or use of Rule 1145 compliant UV/EB or water-based coatings



Part D- BACT Determination New Proposed Listing



Spray Booth – Wood Cabinets
Encl. with automated spray nozzles

For wood cabinets, < 1170 lbs VOC/month

Achieved In Practice: 1 example

Source Test showing emission limits compliance

*For VOC: compliance with Rule 1136 or use of
Rule 1136 compliant UV/EB or water-based
coatings*



Part D- BACT Determination New Proposed Listing



Regenerative Thermal Oxidizer Natural Gas Fired (burner only)

Achieved In Practice: 1 example

Source Test showing emission limits compliance

Control set point for retention chamber at 1500 °F

NO_x limit: 30 ppmv and CO limit: 400 ppmv on a dry basis @ 3% O₂

Cost-effectiveness Evaluation



Part D- BACT Determination New Proposed Listing



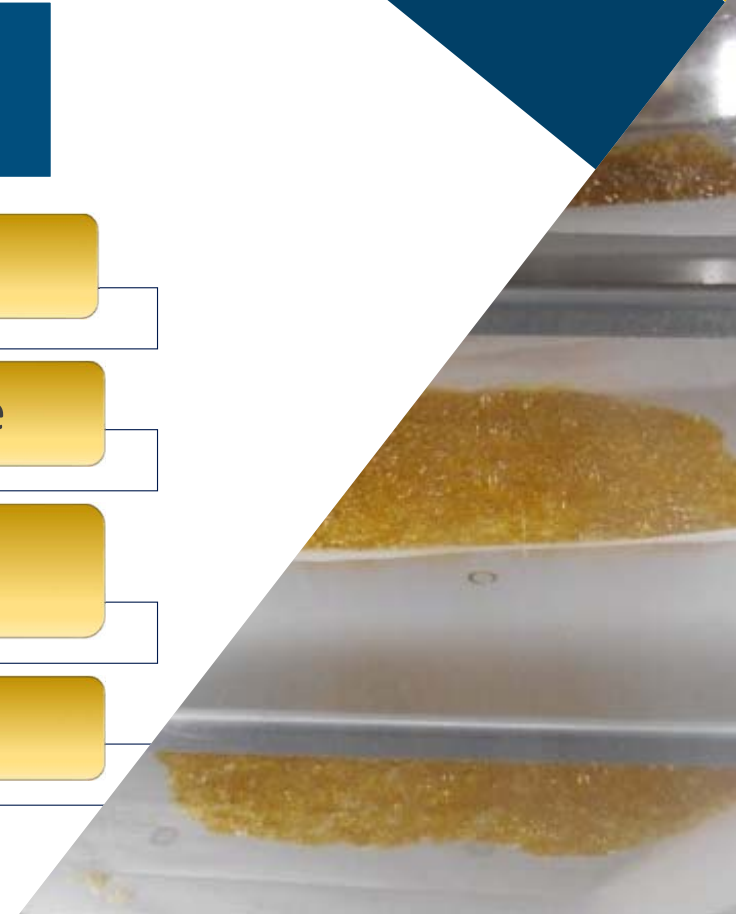
Cannabis Extraction/Processing Butane and Ethanol

Achieved In Practice: 2 examples

Source Test showing emission limits compliance

For VOC: $\geq 95\%$ recovery {preliminary work in progress}

Cost-effectiveness Evaluation



Part D- BACT Determination

Updates for Consistency with
Rules and Regulations

**Flare – Produced
Gas, Landfill Gas,
Organic Liq. Handling
& Other Flare Gas**

*Compliance with
Rule 1118.1 for
NO_x, CO and VOC*

**Fish Reduction –
Cooker, Dryer,
Digester, Evaporator
and Acidulation Tank**

*Exempt from Rule
1147
Remove NO_x
requirement*

**Coffee Roasting –
Food Oven/Roaster**

*Exempt from Rule
1147
Remove NO_x
requirement*

BACT Technical Assessment



Ruel 1118.1 - Control of Emissions from
Non-Refinery Flares > Biogas Flares

Rule 1118.1 adopted on January 2019

Resolution directed staff to conduct a BACT Technical Assessment of flares receiving biogas derived from digestion and/or organic waste digestion or co-digestion

Report to Stationary Source Committee within 12 months

Continue to monitor new/existing organic and food waste digestion projects for ammonia NOx impacts

Hold discussions with POTWs on future proposed projects



Discussion/Other Items & Activities

February 25, 2020



Photo by Unknown Author licensed under [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/)

Q&A





Thank You.



Al Baez

Bahareh Farahani



909 396 2516

909 396 2353



abaez@aqmd.gov

bfarahani@aqmd.gov



www.aqmd.gov