

Minor Source BAT Programs

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NACAA JOINT PERMITTING AND
ENFORCEMENT WORKSHOP

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Major Source Thresholds

Nonattainment Areas			
Pollutant	Nonattainment Classification	Major Source Threshold	Offset Ratio
2008 Ozone	Marginal ($\geq 0.076 < 0.086$ ppm)	100 tpy of VOC or NO _x	1.1 to 1
	Moderate ($\geq 0.086 < 0.100$ ppm)	100 tpy of VOC or NO _x	1.15 to 1
	Serious ($\geq 0.100 < 0.113$ ppm)	50 tpy of VOC or NO _x	1.2 to 1
	Severe ($\geq 0.113 < 0.175$ ppm)	25 tpy of VOC or NO _x	1.3 to 1
	Extreme ($= 0.175$ ppm and up)	10 tpy of VOC or NO _x	1.5 to 1
Particulate Matter	Moderate	100 tpy	-
	Serious	70 tpy	-
Carbon Monoxide	Moderate (9.1 – 16.4 ppm)	100 tpy	-
	Serious (16.5 and up ppm)	50 tpy	-
Sulfur Dioxide, Nitrogen Oxides and Lead	Only one nonattainment classification	100 tpy	-

**Major NSR
Gets lots of
attention!**



**Minor Permits:
Most of what air
agencies issue.**



Permitting Hierarchy



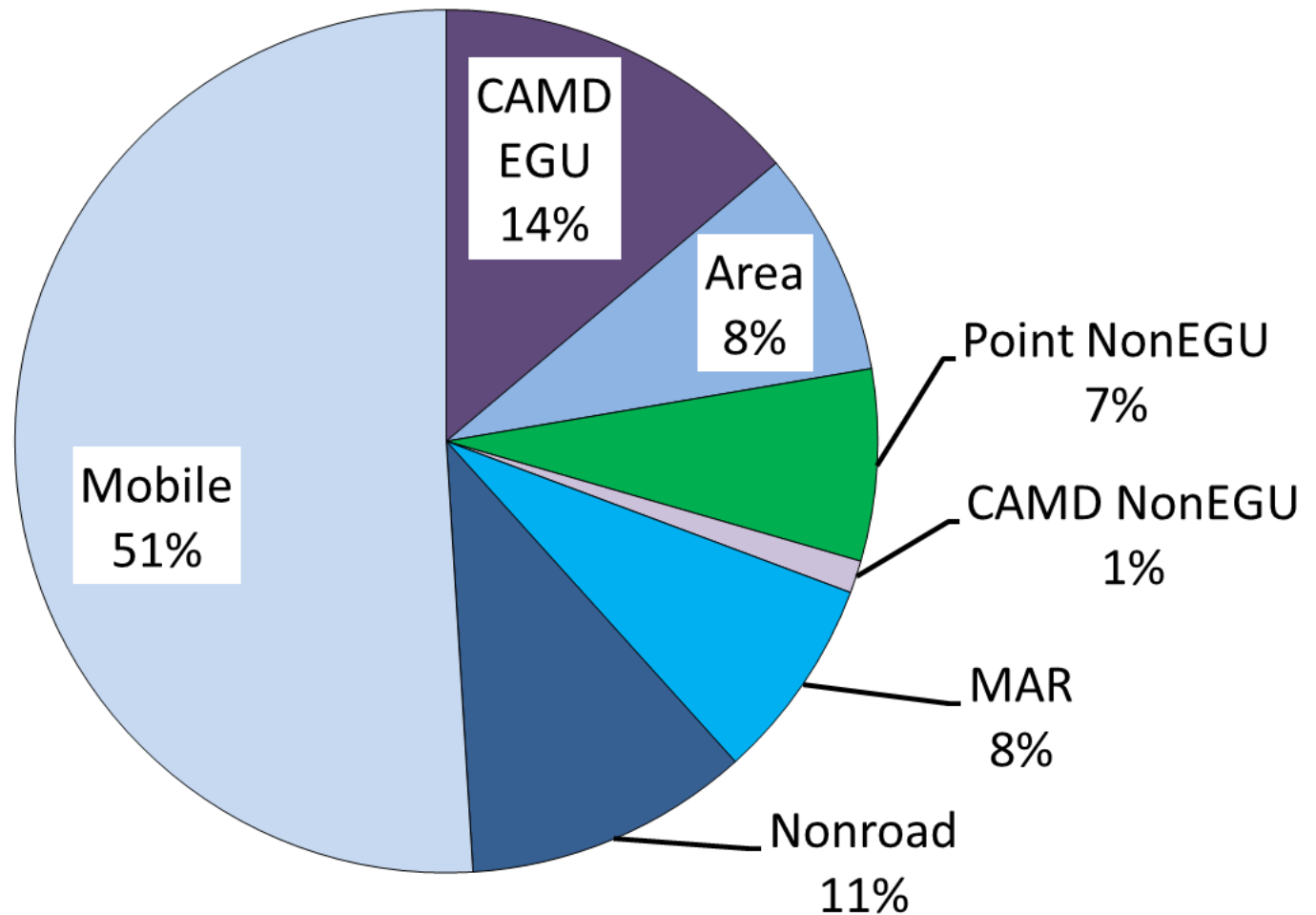
Major
NSR

Synthetic
Minor

Natural Minor

De Minimis

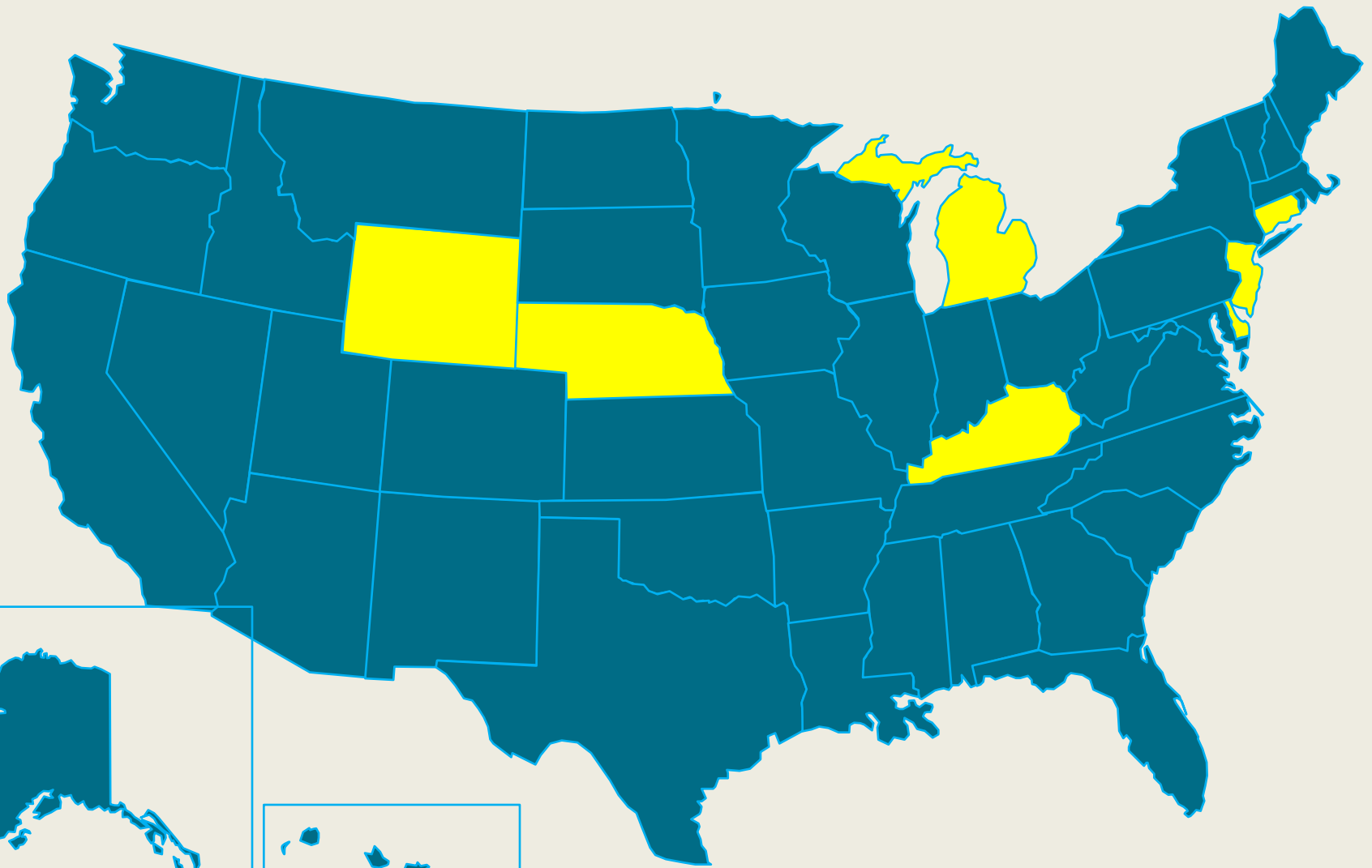
Comparison of Emission Sources in 2007 MANE-VU and VA NO_x



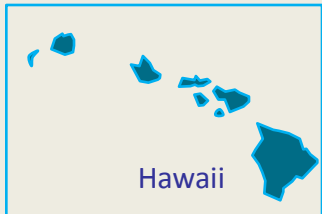
Why adopt minor source BAT

- Thresholds for major NSR are high,
- Generally no controls are otherwise required below NSR,
- Initial construction usually the best opportunity to reduce pollution,
- Manage local impacts,
- Manage emissions inventory.

State and Local Programs

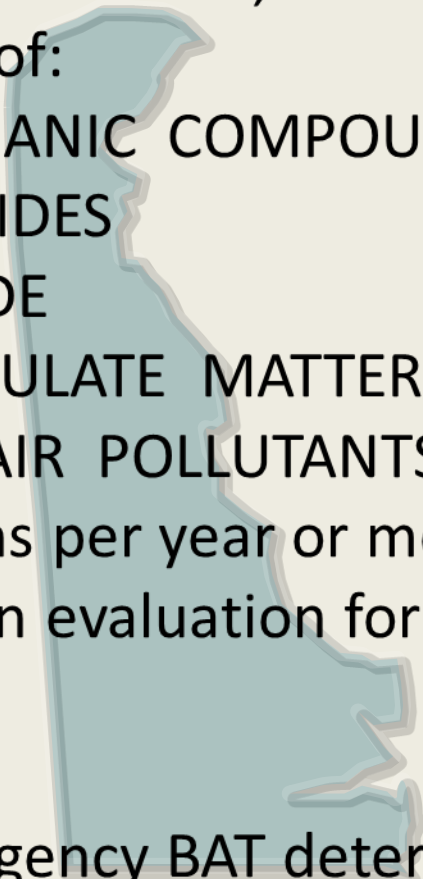


Alaska



Hawaii

Delaware's Approach

- Applies to new installations,
 - Covers emissions of:
 - VOLATILE ORGANIC COMPOUNDS (VOC)
 - NITROGEN OXIDES (NOX)
 - SULFUR DIOXIDE (SO₂)
 - SMALL PARTICULATE MATTER (PM_{2.5})
 - HAZARDOUS AIR POLLUTANTS (HAP'S)
 - Threshold of 5 tons per year or more – in aggregate for HAPs
 - Requires top-down evaluation for controls
 - LAER
 - BACT
 - Presumptive Agency BAT determinations
 - Case-by-case evaluation of technologies
- 

Wyoming

- Requires construction permits for nearly all sources - no de minimis,
- Sources must meet BACT,
- Presumptive BACT guidelines for the oil and gas production

http://deq.state.wy.us/aqd/Resources-New%20Source%20Review/Guidance%20Documents/September%202013%20FINAL_Oil%20and%20Gas%20Revision_UGRB.pdf

Nebraska

- T-BACT - HAP emissions
 - Applies to 2.5 tons per year of any single HAP or 10 tons per year of total aggregated HAPs
 - Use the EPA top down method
- Out of 576 permits issued only 21 were subject to PSD BACT.
- Only 2 or 3 of the ethanol/fermentation plants triggered NSR.
- 2/3 (55-60) of the T-BACT determinations since 2005 were for ethanol production/fermentation facilities.

Minor Source BACT in Connecticut



December 9, 2014

Jaimeson Sinclair

NACAA Joint Permitting and Enforcement Workshop



Connecticut Department of Energy and Environmental Protection

Connecticut's Permitting Program

- Regulatory citation located at [Section 22a-174-3a of the Regulations of Connecticut State Agencies \(RCSA\)](#)
- Addresses Minor and Major Source permitting



Permit Applicability Triggers

- Set forth at Subsection 22a-174-3a(a)(1) of the RCSA
 - New Major Stationary Source, Major Mod
 - New or Reconstructed MSS of HAP
 - **New emission unit or modification with PTE > 15 TPY for any individual air pollutant**
 - Any incinerator
 - GHG sources of certain size*



BACT Applicability

- “Best Available Control Technology” or “BACT” means an emission limitation, including a limitation on visible emissions, based upon the maximum degree of reduction for each applicable air pollutant emitted from any proposed stationary source or modification **which the commissioner, on a case-by-case basis, determines is achievable in accordance with section 22a-174-3a of the Regulations of Connecticut State Agencies. BACT may include, without limitation, the application of production processes, work practice standards or available methods, systems, and techniques, including fuel cleaning or treatment, the use of clean fuels, or innovative techniques for the control of such air pollutant.**
- Required for each pollutant* for which PTE exceeds 15 tpy (minor sources) per Section 22a-174-3a(j) of the RCSA

*different trigger for GHG emissions



Assistance for Applicants

- BACT forms and Instructions on the Department's Website
 - [http://www.ct.gov/deep/lib/deep/Permits and Licenses/Air Emissions Permits/bact-app-214a.pdf](http://www.ct.gov/deep/lib/deep/Permits_and_Licenses/Air_Emissions_Permits/bact-app-214a.pdf)
- Searchable BACT Clearinghouse located on internet at: [CT BACT Clearinghouse](#)





New Jersey Approach

Ken Ratzman

New Jersey Department of
Environmental Protection

New Jersey General Permits/General Operating Permits

- Automatic Approvals
- Must Certify to Pre-defined Conditions
- 20 General Permits and 4 General Operating Permits
- Can creatively push the envelope with Pollution Prevention and BAT



Partial List of NJ GPs/GOPs



- Bulk Storage



- Fuel Dispensing

- Emergency Generator(s)

- Storage Tanks

- Floating
- Fixed

- Plating



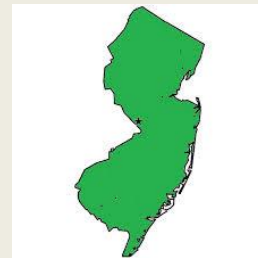
- Boiler(s)

- Dry Cleaning

- Combined Heat and Power

- Site Remediation

NJ Diesel Risk Screening (Under Development)



Step 1 - Determine if this worksheet is appropriate for your Diesel Engine

A. Engine's Stack Height

B. Engine's Horsepower

C.. Discharge Direction of the Stack

 Up Down Horizontal

Test if this
Worksheet is
Appropriate for you

Step 2 - Determine the annual Potential DPM Rate

A. Enter the Engine's power in hp

hp

B. Select the engine's tier or year of manufacture

 Tier (1-4) Year Manufactured

Calculate DPM
Emissions

C. Enter the Engine's maximum annual operating hours

hrs

Reset Values

D. Resulting DPM* Value

g/bhp-hr

E. DPM Emissions in pounds/Yr

lbs/yr

=

DPM Emissions Factor

g/bhp-yr

*

(Horsepower

*

Hours of Operation)

/ 454 g/lb

*

hp

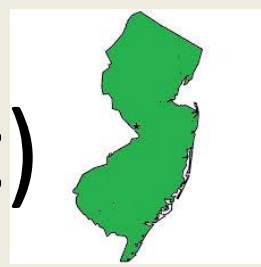
*

hrs

/ 454 g/lb

* DPM - short for Diesel Particulate Matter

NJ Diesel Risk Screening (Cont)



Step 3 - Assess Cancer Risk Impact

For engines of 600 hp and less, an assumption was made of a stack height of 15 feet and a plume rise of 25 feet. The stack height used in the risk assessment is therefore 40 feet

For engines rated over 600 hp, assumption was made of a stack height of 25 feet and a plume rise of 50 feet. The stack height used in the risk assessment is therefore 75 feet.

DPM Emission Rate (pounds\year)

85.9

pounds\year

Distance from Stack to Property Line in Feet

150

feet

Incremental Cancer Risk (based on A and B above)

8.40E-06

or less than 8.4 in a million

Assess Cancer Risk-Impact

Color Key for Incremental Cancer Risk

Green	- The risk factor is less than or equal to 1 in a million (1E-06) and is appropriate
Yellow	- The risk factor is greater than 1 in a million (1 E-06) and less than or equal to 10 in a million (1 E-05) and may be approvable if the best air pollution control technology is applied
Orange	- The risk factor is greater 10 in a million (1 E-05) and less than or equal to 100 in a million (1 E-04) further evaluation is needed, including refined modeling.
Red	- The risk factor is greater than 100 in a million (1 E-04) and is not approvable.

Opportunity to Implement P2, BAT, or BMPs

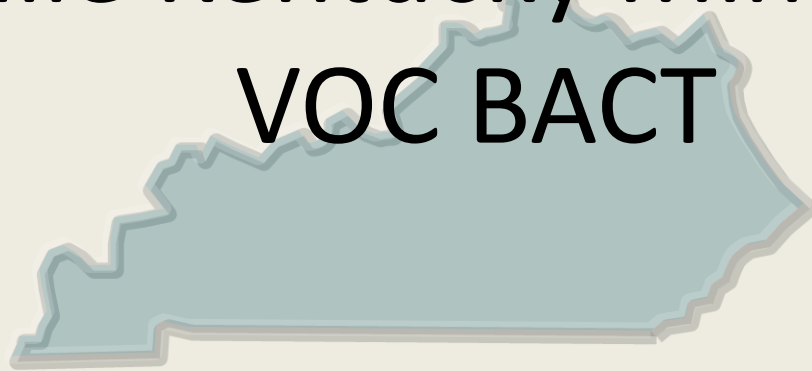
NJ Emergency Generators— Lessons Learned (GP-005A & GOP-003)

- Available for Minor and Major Facilities
- Get out of the way if it is a real emergency!
- Special Considerations
 - Sulfur Limitations
 - More comprehensive Maintenance Schedule
 - Prohibition on using for Demand Response or Peak Shaving



Louisville Kentucky Minor Source

VOC BACT



Paul Aud

Louisville Metro Air Pollution Control
District

Applicability

- “each affected facility not elsewhere regulated in Regulation 7 as to emissions of VOCs...”
- “any equipment, machine, and other device, or any combination of facilities at a source, which uses VOCs and which has the potential to emit greater than 5 tons of VOCs per year.”

Standard

- No owner or operator shall construct or operate an affected facility unless it is equipped with and utilizes best available control technology (BACT) as determined at the time of the construction permit review by the District. Emission rates in terms of pounds of VOCs per hour and/or work practice, equipment specifications, and/or raw material specifications shall be set out as permit conditions on the construction and/or operating permits to insure compliance with this requirement.

Desired Changes

- Mirror PSD where there's a threshold plant wide limit prior to applicability (currently exists)
 - Couple with project threshold prior to BACT applicability (not currently in the regulation)



Michigan Approach to Minor Source BACT Permitting

Cindy Smith

Unit Supervisor

Michigan Department of Environmental Quality

Air Quality Division, Permit Section

Michigan Minor Source BACT Permitting

Applies To New Sources Of:

- Air Toxics (T-BACT)
- Volatile Organic Compounds (VOC)

Approach

- Follow “top-down” approach
- Energy, environmental, and economic impacts included
- VOC BACT can be combined with T-BACT, if appropriate
- Spray Coating Operations—3 elements

Discussion & Questions?