State and Local Air Agencies’ Perspective on Agricultural Air Emissions

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NACAA
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- National Association of Clean Air Agencies (NACAA)
- Formerly known as STAPPA/ALAPCO
- National association representing state and local clean air agencies nationwide
- www.4cleanair.org
NACAA Agriculture Committee

- NACAA Agriculture Committee co-chairs
  - Shelley Kaderly, Nebraska
  - Doug Quetin, Monterey, California

- Forum for discussing agricultural air quality issues

- Opportunity to liaison with AAQTF
Clean Air Act Roles and Responsibilities

- Implementation of the Clean Air Act is a joint responsibility among EPA, states, localities and tribes
- “[A]ir pollution prevention (that is, the reduction or elimination, through any measures, of the amount of pollutants produced or created at the source), and air pollution control at its source is the primary responsibility of States and local governments.” CAA section 101(a)(3).
State and Local Air Agencies Perform Most of the Work

- Collect 99% of the data included in EPA’s AIRS databases
- Handle 90% of all enforcement actions
- Receive delegation of over 80% of environmental programs
- Write SIPs demonstrating attainment/maintenance of NAAQS
More on State Implementation Plans (SIPs)

- Contain enforceable measures for reducing emissions
- Must demonstrate attainment by attainment date
- Federal measures help, but ultimately states and localities on hook to find emission reductions
More on SIPs

- Pollution control requirements apply to all industry sectors
  - Electric utilities but also dry cleaners, bakeries, auto body shops, e.g.

- Nonattainment areas: new sources LAER; existing RACT

- Attainment areas: new sources BACT; existing PSD increment
More on SIPs

- Zero sum game – if one industry does not reduce emissions, will need to seek emission reductions from another sector.
- Ultimate test: monitoring data – are pollution concentrations going down? Three years of clean data needed.
8-Hour Ozone Standard

Nonattainment and Maintenance Areas in the U.S.
8-hour Ozone Standard

- Nonattainment Areas (418 entire counties)
- Nonattainment Areas (44 partial counties)
- Maintenance Areas (12 entire or partial counties)

March 2008
PM$_{2.5}$ Standard

Counties Designated Nonattainment for PM-2.5

Partial counties are shown as whole counties.
8-Hour Ozone and PM$_{2.5}$ Standards

**Counties Designated Nonattainment for PM-2.5 and/or 8-hour Ozone Standard**

Designated Nonattainment

- PM-2.5 Only
- PM-2.5 and 8-hour Ozone
- 8-hour Ozone Only

Several counties have only a portion of their county designated nonattainment. These counties are represented as whole counties on this map.
Counties Exceeding Revised PM$_{2.5}$ Standards

Based on 2003-2005 Monitoring Data

- Data from AQS 7/10/2006
- Data completeness computed per CFR 7/10/2006
- EPA will not base designations for the new fine particle standards on these data.

Legend

County with monitor exceeding:
- both annual (15 µg/m$^3$) and 24-hour (35 µg/m$^3$) PM$_{2.5}$ standards
- ONLY the 24-hour PM$_{2.5}$ standard (35 µg/m$^3$)
- ONLY the annual PM$_{2.5}$ standard (15 µg/m$^3$)

Number of Counties

- Total Counties Exceeding 143
- areas violating annual standard but not designated NA

Data from AQS 7/10/2006
Data completeness computed per CFR 7/10/2006
EPA will not base designations for the new fine particle standards on these data.
### 8-Hour Ozone and PM$_{2.5}$ Deadlines Facing States & Localities

<table>
<thead>
<tr>
<th>Action</th>
<th>Deadline</th>
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<tbody>
<tr>
<td><strong>8-hour ozone</strong></td>
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<tr>
<td>Attainment demonstration SIPs due</td>
<td>June 2007</td>
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<tr>
<td>Attainment deadlines</td>
<td>June 2007-June 2024 (areas with more severe pollution problems get more time)</td>
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<tr>
<td><strong>Fine Particulate Matter (PM$_{2.5}$)</strong></td>
<td></td>
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<tr>
<td>SIPs due</td>
<td>April 2008</td>
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<tr>
<td>Attainment Date</td>
<td>April 2010</td>
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<tr>
<td>Attainment Date w/extension</td>
<td>April 2015</td>
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Ozone harms plants
Ozone decreases plant yield

Proportional Yield Response

Seasonal Ozone Concentration (ppb)
Air Emissions from Ag

- Manure lagoons and piles
- Land application of manure
- Barns
- Feed preparation/storage & handling
- Unpaved areas
- Internal combustion engines
- Agricultural burning
- Field dust
AFO Air Emissions

- 50% of U.S. NH$_3$ emissions
- 25% of U.S. N$_2$O emissions
- 18% of U.S. methane emissions
- NO$_x$ & VOCs are ozone precursors
- NH$_3$, H$_2$S and NO are PM$_{2.5}$ precursors
- Direct emissions of PM$_{10-2.5}$
- Odor

Source: National Research Council, 2002
Concerns with Safe Harbor Agreement

- Enforcement waiver
- SIP issues
- Results not timely
- No study of BMPs and no requirement to put on BMPs
- Industry control of study
- Only 14 monitoring sites
Other concerns

- EPA deeming emissions from barns and lagoons fugitive
- Grassley proposal to exempt dust from PM NAAQS
- Other exemptions (e.g., manure & EPCRA and CERCLA)
  - Emissions still have an impact on air quality even if don’t “count”
Another Model -- California

- SB 700 removed permitting exemption for agricultural activities in CA
- ARB defined “large confined animal facility”
- Local air districts must establish a permitting program for agriculture
- Areas in nonattainment for ozone and/or PM must adopt rules for limiting emissions from agriculture
Another model -- California

- San Joaquin Valley adopted rule 4570 limiting VOC emissions from dairies June 2006
  - VOC emission factors determined August 2005
  - Next up: BACT for dairies
- San Joaquin Valley adopted rule 4550 limiting fugitive dust emissions from ag sites in May 2004
Another model -- California

- AB 32 set greenhouse gas (GHG) emission cap for state
- California’s Climate Action Team identified manure management as one of the 11 sectors for controlling GHG emissions
- ARB recently adopted staff’s recommendations to amend the Stationary Diesel Engine Air Toxic Control Measure to include emission performance standards for in-use stationary diesel agriculture engines.
Opportunities for Collaboration

- BMPs that limit or avoid release of air pollution
- Control technologies
- Win-wins
  - Methane as an energy source
  - Reduce odor/reduce nuisance complaints
  - Avoid need for regulation if emissions below permitting thresholds
  - $\downarrow$ emissions = $\downarrow$ impact of pollution on agriculture
  - GHG market
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