

**Region 3 Plan Summary  
Philadelphia-Wilmington-Trenton Ozone Nonattainment Area**

**Title:** Ozone Nonattainment Plan for the Philadelphia-Wilmington-Trenton Ozone Nonattainment Area

**Federal Register Dates:** December 16, 1999, 64 FR 70444 (proposed rule); October 29, 2001, 66 FR 54598 (final rule); December 5, 2003, 68 FR 67948 (final rule), 68 FR 67993 (proposed rule).

**EPA Effective date:** November 28, 2001; revisions effective February 3, 2004.

**State Submittal Dates:** December 29, 1997; revisions submitted on October 8, 1998, January 24, 2000, December 20, 2000, and October 9, 2001; September 2, 2003.

**Affected Area:** Kent and New Castle Counties

**Summary of the Plan:** Delaware submitted a 1-hour ozone attainment demonstration. This demonstration consisted of: Photochemical grid modeling results for three episodes representing different weather conditions, additional evidence to demonstrate attainment for the Philadelphia-Wilmington-Trenton nonattainment area, VOC and NO<sub>x</sub> emission inventories, and identification of control measures needed to attain the 1-hour national ambient air quality standard (NAAQS) for ozone by November 15, 2005. EPA evaluated this information and performed additional analysis and concluded that additional assurances were needed to conclusively determine that the Philadelphia-Wilmington-Trenton 1-hour Ozone Attainment Plan will result in attainment. Delaware provided this assurance by committing to adopt additional control measures which would result in the EPA-identified VOC and NO<sub>x</sub> emission reductions and to perform a mid-course review which would determine whether Delaware was still on track to attain.

**Control Measures/Regulations Included As Part of the Plan:**

| <b>Name of Control Measure or SIP Element</b>       | <b>Type of Measure</b> | <b>Included in Local Modeling</b> | <b>Approval Status</b>              |
|---|------------------------|-----------------------------------|-------------------------------------|
| Enhanced Inspection & Maintenance                   | CAA SIP Requirement    | Yes                               | SIP Approved (9/30/99, 64 FR 52657) |
| Federal Motor Vehicle Control Program (Tiers 1 & 2) | Federal Rule           | Yes                               | Promulgated at 40 CFR Part 86       |

| <b>Name of Control Measure or SIP Element</b>                                | <b>Type of Measure</b> | <b>Included in Local Modeling</b> | <b>Approval Status</b>  |
|--|------------------------|-----------------------------------|---|
| National Low Emission Vehicle (NLEV)- to the extent not superseded by Tier 2 | State Opt-In           | Yes                               | Federal program promulgated at 40 CFR Part 86, subpart R. State opt-in adopted and submitted; SIP Approved (12/28/99, 64 FR72564) |
| Reformulated Gasoline  | Federal Rule           | Yes                               | Promulgated at 40 CFR Part, 80 subpart D  |
| Federal Non-Road Gasoline Engines (Small Gasoline Engines)                   | Federal Rule           | Yes                               | Promulgated at 40 CFR Part 90   |
| Federal Non-Road Heavy Duty Diesel Engines                                   | Federal Rule           | Yes                               | Promulgated at 40 CFR Part 89   |
| Railroad Engine Standards  | Federal Rule           | Yes                               | Promulgated at 40 CFR Part 92   |
| Stage II Vapor Recovery  | CAA SIP Requirement    | Yes                               | SIP Approved (6/10/94, 59 FR 29956)   |
| On-Board Refueling Vapor Recovery  | Federal Rule           | Yes                               | Promulgated at 40 CFR Part 86   |
| AIM Surface Coatings   | Federal Rule           | Yes                               | Promulgated at 40 CFR Part 59, subpart D  |
| Consumer & Commercial Products   | Federal Rule           | Yes                               | Promulgated at 40 CFR Part 59, subpart C  |
| Autobody Refinishing   | State Rule             | Yes                               | SIP- Approved (01/26/96, 61 FR 2419)  |
| Industrial Cleaning Solvents   | State Rule             | Yes                               | SIP Approved (05/03/95, 60 FR 21707)  |
| Open Burning Ban   | State Rule             | Yes                               | SIP Approved (03/12/97, 62 FR 11329)  |
| Stage I Vapor Recovery   | CAA SIP Requirement    | No                                | SIP Approved (05/03/95, 60 FR 21707)  |

| Name of Control Measure or SIP Element | Type of Measure     | Included in Local Modeling | Approval Status  |
|--|---------------------|----------------------------|--|
| Offset Lithography                     | State Rule          | Yes                        | SIP Approved (9/2/97, 62 FR 46199)                                 |
| Heavy Duty Diesel Engines (On-Road)    | Federal Rule        | Yes                        | Promulgated at 40 CFR Part 86                                      |
| VOC RACT                               | CAA SIP Requirement | Yes                        | SIP Approved (05/03/95, 60 FR 21707)                               |
| Sanitary Landfills                     | State Rule          | Yes                        | Federally Approved as a Section 111(d) plan (09/17/99 64 FR 50453) |
| Benzene Waste Rule                     | Federal Rule        | Yes                        | Promulgated at 40 CFR Part 61, subpart F                           |

**Motor Vehicle Emissions Budget:**

TRANSPORTATION CONFORMITY BUDGETS FOR THE DELAWARE PORTION OF THE PHILADELPHIA AREA

| Type of control strategy SIP                                       | Year | Kent County |           | New Castle County |           |
|--|------|-------------|-----------|-------------------|-----------|
|  |      | VOC (TPD)   | NOx (TPD) | VOC (TPD)         | NOx (TPD) |
| Attainment Demonstration<br>(Revised, effective February 3, 2004.) | 2005 | 5.14        | 8.42      | 15.08             | 21.28     |

**Emission Reductions:**

Attainment year emission inventories were developed through the use of Bureau Economic Analysis (BEA) growth factors for area source (VOC & NOx) and point source (VOC) growth. EGAS growth factors were used for off-road mobile source (VOC & NOx) and point source (NOx) emission projections. EPS-2 and EMS-95 along with Mobile 5b were used to grid and speciate emissions for the July 1988 and the July 1991 episodes respectively. The below-listed table summarizes the percentage reduction in emissions from the 1990 levels expected in the Delaware portion of the Philadelphia interstate nonattainment area. The percentage reduction takes into account growth as well as emission reductions from measures adopted since 1990. Column four represents the percentage reduction of NOx emissions from 1990 to 2005 when emission reductions anticipated from the NOx SIP call are combined with reductions from all other local measures.

**Delaware Portion of the Philadelphia Area Emissions (tons/day)**

|                       | <b>1990</b> | <b>2005</b> | <b>% Reduction</b> |
|-----------------------|-------------|-------------|--------------------|
| <b>NO<sub>x</sub></b> | 182         | 138         | 24                 |
| <b>VOC</b>            | 196         | 104         | 47                 |

**Commitments:**

| <b>Commitment</b>   | <b>Adoption Date</b> | <b>Emission Reductions in Tons per Day (TPD)</b>             |
|---|----------------------|--|
| Adopt additional control measures*  | 10/31/01             | VOC- 62 TPD<br>NO <sub>x</sub> - 3.4 TPD                     |
| Submit revised SIP and motor vehicle emissions budget if additional adopted measures affect the motor vehicle emissions inventory | 10/31/01             | Not Applicable   |
| Revise SIP and motor vehicle emissions budget within 1 year after MOBILE6 mobile emissions model is issued                        | 1/29/02              | SIP Revision action published December 5, 2003 (68 FR 67948) |
| Perform a mid-course review and submit the results to EPA   | 12/31/03             | Not Applicable   |

\* Emissions reductions are for the entire nonattainment area consisting of portions of DE, MD, NJ and PA.

**Additional Control Measures Submitted by Delaware to Address the Projected Emissions Shortfall:** On November 22, 2002 (67 FR 70315), EPA approved a group of six control measures submitted by Delaware on March 2, 2002 to address the projected emissions shortfall. The control measures and their expected impacts on VOC and NO<sub>x</sub> emissions in Kent and New Castle Counties are summarized below:

**Delaware Regulations and Their Expected Reductions for Kent and New Castle Counties**

| Regulation Number and Title   | Expected Benefit by 2005 (tons/day) |             |             |             |
|---|-------------------------------------|-------------|-------------|-------------|
|   | Kent                                |             | New Castle  |             |
|   | VOC                                 | NOx         | VOC         | NOx         |
| Reg. 42, Sec. 1 - Control of NOx Emissions from Industrial Boilers  | N/A                                 | 0.00        | N/A         | 0.36        |
| Reg. 41, Sec. 2 - Consumer Products                                 | 0.17                                | N/A         | 0.68        | N/A         |
| Reg. 41, Sec. 3 - Portable Fuel Containers                          | 0.09                                | N/A         | 0.43        | N/A         |
| Reg. 41, Sec. 1 - Architectural & Industrial Maintenance Coatings   | 0.38                                | N/A         | 1.46        | N/A         |
| Reg. 24, Sec. 1 (amended) - Mobile Equipment Repair and Refinishing | 0.07                                | N/A         | 0.29        | N/A         |
| Reg. 24, Sec. 33 (amended) - Solvent Cleaning & Drying              | 0.48                                | N/A         | 0.91        | N/A         |
| <b>County Totals</b>  | <b>1.19</b>                         | <b>0.00</b> | <b>3.77</b> | <b>0.36</b> |

In order to produce further benefit for the Philadelphia-Wilmington-Trenton non-attainment area, the States decided to also apply the six new regulations to 19 counties outside the nonattainment area. The outside counties being credited to the nonattainment area fall within 100 kilometers of the nonattainment area. Extending the VOC rules in this manner adds about 35 tons/day of VOC reductions to the 59 tons/day of VOC reductions from within the nonattainment area. This gives a total of 94 tons/day of VOC reductions that can be applied to the attainment shortfall for the Philadelphia-Wilmington-Trenton nonattainment area. An additional benefit of 1 ton/day of the NOx reduction is picked up by applying the NOx Model Rule to sources outside of the nonattainment area but within the 100 kilometers. The total VOC and NOx benefits from the nonattainment area plus the counties within 100 kilometers are compared to the EPA-identified shortfalls.

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