

Region III Plan Summary
**Attainment Demonstration Portion of the Attainment Plan for the Philadelphia-
Wilmington-Atlantic City Moderate Nonattainment Area**

Title: Attainment Demonstration Portion of the Attainment Plan of the 1997 8-hour Ozone National Ambient Air Quality Standard for the Philadelphia-Wilmington-Atlantic City Moderate Nonattainment Area

Federal Register Dates: August 7, 2012, 77 FR 46990 (Proposed Rule); October 5, 2012, 77 FR 60914 (Final Rule)

EPA Effective date: November 5, 2012

State Submittal Date: June 13, 2007

Affected Area: Philadelphia Area (New Castle, Kent and Sussex Counties in Delaware)

Summary of the Plan

On June 13, 2007, the Delaware Department of Natural Resources and Environmental Control (DNREC) submitted a comprehensive state implementation plan (SIP) revision to meet the requirements for an attainment plan for the 1997 8-hour ozone national ambient air quality standard (NAAQS) for the Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE moderate nonattainment area (Philadelphia Area). The SIP revision included the attainment demonstration for the 1997 8-hour ozone NAAQS for the Philadelphia Area and its associated motor vehicle emission budgets (MVEBs) used for transportation conformity purposes in all three counties of Delaware (New Castle, Kent and Sussex Counties). The Delaware attainment plan also included the 2002 base year emissions inventory, an analysis of the reasonably available control measures/ reasonably available control technology (RACM/RACT), the 2008 rate of progress plan (ROP) plan and its associated MVEBs, and contingency measures. The ROP plan and its MVEBs, the 2002 base year emissions inventory, the RACM/RACT analysis, and the contingency measures (elements of the June 13, 2007 attainment plan) were approved by EPA on April 8, 2010 (75 FR 17763).

Moderate areas are required to attain the 1997 8-hour ozone NAAQS by no later than six years after designation. Therefore, the Philadelphia Area was to attain by June 15, 2010. *See* 40 CFR 51.903 and 69 FR 23951 (April 30, 2004). However, the Philadelphia Area qualified for a one year extension of its attainment date, based on the complete, certified ambient air quality data for the 2009 ozone season. *See* 40 CFR 51.907. On January 21, 2011 (76 FR 3840), EPA approved a one year extension of the Philadelphia Area's attainment date from June 15, 2010 to June 15, 2011, based in part on air quality data recorded during the 2009 ozone season.

On March 26, 2012 (77 FR 17341), EPA published two determinations regarding the 1997 8-hour ozone NAAQS for the Philadelphia Area. First, EPA made a clean data determination that the Philadelphia Area had attained the 1997 8-hour ozone NAAQS. This determination was

based upon complete, quality assured, and certified ambient air monitoring data that showed the Philadelphia Area had monitored attainment of the 1997 8-hour ozone NAAQS for the 2008 – 2010 monitoring period. Ambient air monitoring data for the 2009 – 2011 monitoring period is consistent with continued attainment. Second, pursuant to section 181(b)(2)(A) of the CAA, EPA made a determination of attainment that the Philadelphia Area had attained the 1997 8-hour ozone NAAQS by its attainment date of June 15, 2011.

Weight of Evidence Demonstration

EPA's modeling guidance describes how to use a photochemical grid model and additional analytical methods to complete a weight of evidence (WOE) analysis to estimate if emissions control strategies will lead to attainment of the 1997 8-hour ozone NAAQS. A WOE analysis is a supporting analysis that helps to determine if the results of the photochemical modeling system are correctly (or not correctly) predicting future air quality.

The WOE analysis presented in the Delaware SIP revision describes the analyses performed, databases used, key assumptions and outcomes of each analysis, and why the evidence, viewed as a whole, supports a conclusion that the Philadelphia Area will attain the NAAQS despite the model prediction that some monitors' future design values exceed the 1997 8-hour ozone NAAQS. The WOE analysis included the following: 1) a comparison of model-predicted 2009 ozone design values to monitored design values for 2006 - 2011; 2) an analysis of recent ozone trends in the Philadelphia Area; and 3) alternative methods for calculating the 2009 ozone design value.

The 2009 model over predicted ozone design values for 2006 – 2011 for most cases. Further, EPA's analysis concurs with Delaware's analysis of significant declining trends in the Philadelphia Area ozone design values. Additional emissions reductions have continued to occur due mostly to local controls in each nonattainment area and to a few reductions in major sources due to initiatives in the Ozone Transport Region (OTR). In addition, monitored ozone design values for each of the Philadelphia Area monitors continued to decline and to show attainment in 2010 and 2011.

EPA has determined that the Delaware photochemical grid modeling results predict a 2009 projected design value well above the 1997 8-hour ozone NAAQS for the Philadelphia Area. However, after taking into account WOE arguments regarding model over prediction of the 2009 monitored design values and recent ozone design value trends, which show attainment of the standard by 2010, EPA determined that the Delaware SIP has demonstrated attainment of the ozone standard by the extended attainment date of June 2011.

Motor Vehicle Emissions Budgets

The motor vehicle emissions budgets (MVEBs) for the 2009 attainment year are based on the projected 2009 on-road motor vehicle source emissions, accounting for the emission reductions from on-road vehicle source control measures, including transportation control measures and vehicle technology, fuel or maintenance-based measures. Table 1 is a summary of the 2009 NO_x and VOC MVEBs for all the three counties in Delaware.

Table 1. Motor Vehicle Emissions Budgets for Delaware in tons per day (tpd)

CAA Requirement	Milestone Year	MVEBs for NO_x (tpd)	MVEBs for VOC (tpd)
Attainment Demonstration – New Castle County	2009	19.23	9.89
Attainment Demonstration – Kent County	2009	9.04	3.95
Attainment Demonstration –Sussex County	2009	11.93	7.05

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