pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

March 17, 2015

U.S. Environmental Protection Agency
EPA Docket Center (EPA/DC)
Mail Code 28221T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Attention: Docket ID No. EPA-HQ-OAR-2008-0699

Re: National Ambient Air Quality Standards for Ozone; Proposed Rule

To Whom It May Concern:

The Pennsylvania Department of Environmental Protection (DEP) thanks the U.S. Environmental Protection Agency (EPA) for the opportunity to comment on the proposed revisions to the National Ambient Air Quality Standards (NAAQS) for ozone, published in the *Federal Register* on December 17, 2014 (79 FR 75234). The Clean Air Act requires EPA to periodically review the latest science regarding the health and welfare effects of ambient concentrations of ozone in the atmosphere.

Based on controlled human exposure studies and epidemiologic studies, EPA has determined that the current primary ozone standard set at a level of 75 parts per billion (ppb) is not requisite to protect public health with an adequate margin of safety. Therefore, based on this recent research, the EPA is proposing to revise the level of the health-based primary standard to within the range of 65 ppb to 70 ppb and to revise the secondary standard to within the range of 65 to 70 ppb, which air quality analyses indicate would provide air quality, in terms of three-year average W126 index values, at or below a range of 13 – 17 parts per million-hours (ppm-hrs). EPA is also seeking comment on the retention of the 2008 standards or lowering the standard to 60 ppb.

Pennsylvania has taken significant steps to reduce emissions of ozone precursors. Preliminary design values for 2012 – 2014 indicate that one ozone sampler (Harrison) in Allegheny County, Pennsylvania, has not attained the 2008 primary ozone standard of 75 ppb. It will be a significant challenge for states including Pennsylvania to attain a more stringent ozone standard at or below 70 ppb. For instance, based on current monitoring network data, if EPA adopts a 65 ppb ozone standard in October 2015, approximately 90% of the monitored areas in the Commonwealth would measure violations of the standard. To meet a more stringent standard, additional emission control programs will be needed, and with each rulemaking that strengthens the ozone standards, effective programs become more difficult to develop and implement as available statewide emission reduction opportunities become scarce.

Comments and recommendations on the proposed rule are provided herein.

DEP supports the proposed indicator, averaging time, and form elements of the health-based ozone standard.

The CASAC concurred with EPA's justification in the Second Draft Policy Assessment for the Review of the Ozone National Ambient Air Quality Standards (hereafter referred to as the "Second Draft PA") for retaining the current indicator, averaging time and form of the primary ozone standard. DEP supports EPA's proposed decision to keep the indicator (ozone), averaging time (maximum daily 8-hour average), and form (annual 4th highest maximum daily 8-hour average, over a period of three years) elements of the health-based ozone standard the same as they are for the 2008 ozone standard. According to EPA's analysis of these three elements and the CASAC conclusion, any change in these elements would not result in an appreciable increase in the protection of public health.

The level of the primary ozone standard should be based on sound science.

EPA should set the level for the ozone NAAQS based on recent scientific evidence provided by exposure studies, epidemiology studies, and animal toxicology studies while accounting for an adequate margin of safety. EPA should rely heavily on the evaluation of this scientific evidence and the CASAC recommendations provided to Administrator McCarthy in June 2014. In its advice to the EPA Administrator, CASAC concluded that the scientific evidence and exposure/risk information support consideration of standard levels ranging from 70 to 60 ppb. DEP also notes that EPA's analysis of recent studies show that statistically significant associations of adverse health effects between exposure studies and epidemiological studies at the 60 ppb level do not exist at this time. With this all in mind, DEP supports the standard being set at or below 70 ppb.

DEP supports the CASAC recommendations for the form of the secondary ozone standard. Historically, the form of the secondary ozone standard has been equivalent to the form of the primary ozone NAAQS. EPA is proposing to define the secondary ozone standard in terms of a "W126 index" in a range of 13 to 17 ppm-hrs, averaged over three years. EPA should follow the recommendation of CASAC and the EPA staff to set the secondary standard to the W126 index form. As stated in the Executive Summary of the Policy Assessment for the Review of the Ozone National Ambient Air Quality Standards (Policy Assessment):

> To the extent the Administrator finds it useful to consider the extent of public welfare protection that might be afforded by a revised primary standard, staff concludes that public welfare protection is appropriately judged through the use of the cumulative, seasonal W126 index form, as described above. CASAC agreed that it was appropriate to establish a revised form of the secondary standard and that the W126 index was a more biologically relevant form than the current form of the standard.[1]

For the proposed revision to the ozone NAAQS, EPA has proposed again to set the form of the secondary standard to the form of the primary standard. In order to adequately prevent seasonal

[1] Policy Assessment for the Review of the Ozone National Ambient Air Quality Standards, EPA-452/R-14-006, August 2014, p. ES-10.

damage to trees, crop yield loss, and visible foliar injury to plants, however, CASAC recommended that it was appropriate to establish a revised form of the secondary standard. Your independent science advisors clearly indicated that the W126 index was a more biologically-relevant form of the ozone standard than the current form. EPA staff agreed with this recommendation. By measuring public welfare protection with the W126 form, trees and crops are better protected and the public would be better informed.

The level of the secondary standard should be consistent with CASAC recommendations.

EPA is requesting comments on its proposed conclusion "that air quality in terms of a three-year average seasonal W126 index value, based on the three-consecutive-month period within the O_3 season with the maximum index value, with daily exposures cumulated for the 12-hour period from 8:00 a.m. to 8:00 p.m., within the range from 13 to 17 ppm-hrs would provide the requisite protection against known or anticipated adverse effects to the public welfare."

The Administrator is also proposing to revise the current secondary standard to a level within the range of 65 to 70 ppb. Additionally, the EPA solicits comments on the alternative approach of revising the secondary standard to a W126-based form, averaged over three years, with a level within the range of 13 to 17 ppm-hrs. A distinct secondary standard with a level within the range extending below 13 ppm-hrs down to 7 ppm-hrs has also been proposed. Lastly, EPA is seeking comments on whether the 2008 ozone secondary standard should be retained (79 FR 75237; December 17, 2014).

While CASAC supports EPA's scientific conclusion that the current secondary ozone standard does not provide adequate protection, the Committee has concerns with EPA's proposed approach. In the June 26, 2014, letter to EPA Administrator McCarthy, the CASAC stated the following:

> The CASAC does not support a level higher than15 ppm-hrs. For example, at 17 ppm-hrs, the median tree species has 6% relative biomass loss, and the median crop species has over 5% yield loss. These levels are unacceptably high. ...Furthermore, there are specific economically significant crops, such as soybeans, that may not be protected at 15 ppm-hrs but would be protected at lower levels. A level below 10 ppm-hrs is required to reduce foliar injury. A level of 7 ppm-hrs is protective of relative biomass loss for trees and offers additional protection against crop yield loss and foliar injury.

Moreover, CASAC does not recommend the use of a three-year average for the secondary standard and favors the "single-year period for determining the highest three-month summation which will provide more protection for annual crops and for the anticipated cumulative effects on perennial species." The CASAC further stated that if the agency preferred to base the three-year average for the secondary standard for purposes of stability, "then the level of the standard should be revised downward such that the level for the highest three-month summation in any given year of the three-year period would not exceed the scientifically recommended range of 7 to 15 ppm-hrs."[2]

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[2] Ibid., p. ES-12.

DEP recommends that the secondary W126 standard be set no higher than the maximum level of 15 ppm-hrs, as recommended by the CASAC. The CASAC recommendations should not be ignored.

The timely release of EPA's implementation rule and guidance is imperative.

Delays in EPA's issuance of the implementation rule and associated guidance have been a barrier to progress toward expeditiously achieving the benefits of a new standard. While EPA has the primary responsibility of promulgating the new standard, Pennsylvania and other states have the primary responsibility of implementing the standard. The states' efforts require adequate time and resources, and any delays, particularly delays by the EPA in issuing guidance and rules, reduce the speed and effectiveness in achieving the health and environmental benefits of a new ozone standard.

EPA should propose the implementation rule and associated guidance at the same time it promulgates the revised ozone standard, and the final rule and guidance should be issued expeditiously.

Federal control measures should be implemented to address background ozone concentrations.

The EPA should adopt new regulations and policies that reduce emissions that contribute to background ozone concentrations. Any ozone formed by processes other than the chemical conversion of local or regional ozone precursor emissions is generically referred to as background ozone. Background ozone concentrations are comprised of natural sources of ozone and ozone precursors, manmade international sources of ozone precursors, and natural and international emissions of methane. Local controls may not be enough to attain the proposed ozone standard. Through the years, the NAAQS for ozone has become significantly more stringent. Emissions of ozone that form background concentrations comprise a larger percentage of overall concentrations. As EPA states in the Policy Assessment, "...the relative importance of background O_3 would increase were O_3 concentrations to decrease with a lower level of the O_3 NAAQS."[3]

According to the Policy Assessment, North American background levels of ozone concentrations can reach levels as high as 50 ppb in some western states and at least 30 ppb in most other regions of the country.[4] In 2007, in the eastern U.S., the percentage of U.S. background concentrations comprised 50% of seasonal mean ozone concentrations.[5] EPA states in the Policy Assessment that:

> The key finding of this analysis is that air quality planning efforts to reduce anthropogenic methane emissions and international NO_x/VOC emissions (e.g. migrating

[3] Ibid., p. 2-31.
[4] Ibid., Figure 2-10, p. 2-19.
[5] Ibid., Figure 2-12, p. 2-22.

from Asia, Canada, and Mexico; and from commercial shipping) have the potential to lower background O_3 levels.[6]

Modeling performed in 2007 confirms the importance of methane emissions and international ozone precursor emissions in contributing to background ozone. The EPA's 2013 Integrated Science Assessment for Ozone and Related Photochemical Oxidants estimated that roughly half of the difference between natural background and North American background modeling scenarios resulted from the removal of anthropogenic methane and the other half resulted from international anthropogenic emissions of shorter-lived ozone precursors.[7]

The timely promulgation of federal measures to reduce ozone precursor emissions will be necessary to assist states and tribes in making significant progress to attain the ozone standards by the statutorily-prescribed deadlines.

The U.S. government should work with the governments of Canada, Mexico, and Asian countries, the biggest sources of the international transport of pollution to the U.S., in order to develop information and technological exchange programs to better reduce ozone-forming emissions produced in those countries. The U.S. government should also seek relief from international transport by including measures in trade agreements that would reduce emissions of ozone precursors from international sources. In the Policy Assessment, EPA estimates that international transport could contribute as much as 8 ppb toward overall seasonal ozone concentrations. International transport could contribute up to 25 ppb to peak single-day ozone concentration in some areas like Buffalo, NY and San Diego, CA.

Federal measures to reduce methane emissions will be necessary in order to attain the new ozone standards.

EPA must adopt and implement federal measures to reduce methane emissions in order to lower background ozone concentrations. DEP is encouraged by the EPA's greenhouse gas emissions control efforts to limit fugitive emissions of methane from oil and gas production and distribution activities. EPA has considered methane to have a negligible photochemical reactivity, and in comparison to other pollutants on a mass basis, it is not as photochemically reactive. Nevertheless, the amount of methane released in the environment from local, regional, national and international sources and its relatively long residency time in the atmosphere can contribute toward producing higher ozone concentrations. In the Policy Assessment, EPA estimates that methane emissions could contribute up to 8 ppb toward overall seasonal ozone concentrations. As the NAAQS for ozone becomes more stringent, it will be necessary to reduce all anthropogenic precursors that lead to the formation of ozone, including methane.

[6] Ibid., p. 2-29.
[7] Ibid., p. 2-27

DEP supports the grandfathering provisions for prevention of significant deterioration (PSD) permits.

EPA has proposed grandfathering provisions that would apply to two categories of PSD permit applications that are pending when the EPA issues the revised ozone NAAQS: (1) Applications for which the reviewing authority has formally determined that the application is complete on or before the signature date of the revised NAAQS; and (2) Applications for which the reviewing authority has first published a public notice of a draft permit or preliminary determination before the effective date of the revised NAAQS.

The DEP agrees with EPA's proposed grandfathering provisions for PSD permit applications.

Conclusion

The analysis of many controlled human exposure and epidemiology studies demonstrates that the current 2008 NAAQS for ozone does not adequately protect the public health with a reasonable margin of safety. The task before EPA is to set a new level for the ozone NAAQS that protects public health and is supported by available scientific evidence. The EPA is proposing to set the level of the ozone NAAQS between 65 ppb and 70 ppb. EPA's analysis shows that a level of 65 ppb achieves nearly three times the health benefits than the 70 ppb level. The CASAC proposed to exclude the upper end of a 60 ppb to 70 ppb range to provide the required margin of safety. In consideration of both EPA's and CASAC's proposals, DEP recommends that the new level of the NAAQS standard should be set at or below 70 ppb. Whatever the final ozone standards set by EPA, in order to meet the new ozone standard, it is clear that EPA needs to be fully engaged in exercising its authority to reduce emissions that contribute to manmade background concentrations and other emissions that are outside of a state's authority to regulate.

Pennsylvania will continue to work in cooperation with EPA to limit ozone precursor emissions within the Commonwealth's borders to attain the primary and secondary ozone NAAQS. Once again, thank you for this opportunity to comment on the proposed ozone standards.

Should you have any questions or need additional information, please contact Joyce E. Epps, Director, Bureau of Air Quality, by e-mail at jeepps@pa.gov or by telephone at 717.787.9702.

Sincerely,

Patrick McDonnell
Policy Director