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Natural Resources Defense Council

Testimony

**Before the
Committee on Oversight and Government Reform
United States House of Representatives**

Hearing on EPA's New Ozone Standards

May 20, 2008

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Chairman Waxman, and Ranking Member Davis, thank you for the opportunity to testify today regarding the EPA's new National Ambient Air Quality Standards for ozone. My name is Michael Goo. I am the Climate Legislative Director at the Natural Resources Defense Council (NRDC). NRDC is a national, nonprofit organization of scientists, lawyers and environmental specialists dedicated to protecting public health and the environment. Founded in 1970, NRDC has more than 1.2 million members and online activists nationwide, served from offices in New York, Washington, Los Angeles and San Francisco, Chicago and Beijing.

I am pleased to have the opportunity to address the Committee on the subject of the National Ambient Air Quality Standards. These standards are the cornerstone of the Clean Air Act and they are fundamental to public health and welfare protection in the United States. These standards tell us when the air is safe to breathe. They tell us when public welfare is safe from the deleterious effects of air pollution. They set the level at which our most sensitive populations, including children and the elderly, are protected

“with an adequate margin of safety¹.” These standards are to be based on the “latest scientific knowledge²” and in setting these standards, EPA may not be guided by considerations of cost and feasibility³. Until recently, the process for developing these standards was regarded as the “gold standard” for rigorous, scientifically based federal decisionmaking, conducted free of political influence.

Although I am pleased to be here to testify regarding the success that these standards have represented over the duration of the Clean Air Act, I am not pleased to be here to tell you about EPA’s latest actions with regard to the ozone standard, which amount to a shameful distortion of the scientific and regulatory process that has served the American public so well in the past. I am not pleased to be here to report that the Environmental Protection Agency, which is charged under the Clean Air Act with the duty of protecting the public from the ill effects of air pollution, has buckled under political pressure from the Office of Management and Budget and set a standard that will fail to meet the statutory requirements of the law and will not protect public health or welfare. I am not pleased to tell you that EPA Administrator Johnson chose to disregard the clearly outlined scientific advice of the Clean Air Scientific Advisory Committee (CASAC) which was created under section 109 of the Clean Air Act, and which is charged with providing a scientific recommendation regarding such standards.

Unfortunately, EPA’s decision, by setting the bar incorrectly at the beginning of the clean air process, all but ensures that we will not reach the right result—clean, safe

¹ Clean Air Act section 109

² Clean Air Act section 108

³ *Whitman v. American Trucking Associations*, 531 U.S. 457, 464-71 (2001)

air-- at the end of that process. Although these standards will ultimately be revised to reflect the true state of scientific knowledge, in the meantime, the result will be that millions of Americans, even people in areas that eventually meet the new standard, will continue to breathe unhealthy air for years to come.

With regard to ozone pollution, the first point that bears emphasis is that we now know that ozone pollution can result in premature mortality. This is a fancy way of saying that smog kills people. During the last ozone NAAQS review in 1997, although there was some evidence regarding ozone mortality, that evidence was much more limited than today. There was, however, ample evidence that exposure to ozone leads to a “pyramid” of health effects ranging from increased asthma and respiratory symptoms to hospital admissions. (See Figure 1 below for a current version of EPA’s “pyramid” of effects which now includes death at the top.) Those non-mortality effects alone were more than sufficient to justify revising the standard in 1997 and the Supreme Court of the United States agreed, unanimously upholding the standard in the case of *Whitman v. American Trucking Associations*, 531 U.S. 457 (2004)

Ozone Health Impacts: “Pyramid of Effects”

- Susceptible and vulnerable groups include:
 - People with lung disease such as asthma
 - Children
 - Older adults
 - People who are more likely to be exposed, such as outdoor workers

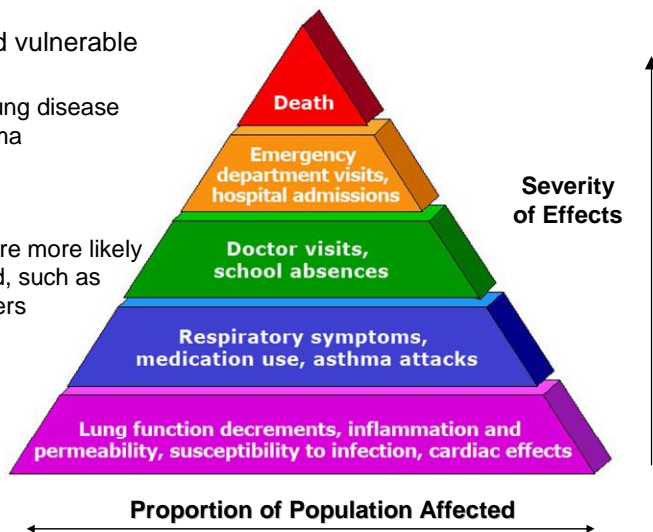


Figure 1. (EPA 2007)

Since the 1997 standard was promulgated a robust body of scientific evidence has been created showing that short term exposure to ozone pollution shortens peoples’ lives. In fact, just last month, the National Academy of Sciences, National Research Council, concluded that “short term exposure to ambient ozone is likely to contribute to premature death” and that “human chamber and toxicological studies have yielded strong evidence that short term exposure to ambient ozone can exacerbate lung conditions, causing illness and hospitalization, and can potentially lead to death.” The NAS also pointed out that: “available evidence on ozone exposure and exacerbation of heart conditions, which is less abundant, points to another concern.” NAS/NRC: Estimating Mortality Risk Reduction and Economic Benefits from Controlling Ozone Air Pollution, April 22, 2008. So ozone can play a role in heart attacks.

The CASAC⁴ also reached similar conclusions regarding ozone mortality nearly two years ago. In October of 2006, they indicated that: [A]dverse health effects due to low concentration exposure to ambient ozone (that is below the current primary 8-hour NAAQS) found in the broad range of epidemiologic and controlled exposure studies cited above include...an increase in mortality (non accidental cardio-respiratory deaths)” and that “retaining this [the current] standard would continue to put large numbers of Americans at risk for...mortality⁵.” Thus, it is now scientifically well established that ozone is associated with premature death. This means that “judgments” about the public health implications of an ozone standard are in fact decision of the utmost seriousness, with genuine life or death consequences.

Having made clear that ozone kills people and causes other serious health effects, the second factual point I wish to emphasize regarding ozone is that it is ubiquitous. According to EPA, approximately 140 million Americans live in areas that violate the

⁴ Although CASAC in 2006 and before found clear evidence for mortality from ozone pollution and relayed that conclusion to EPA, the Bush Administration chose a very different tack. As detailed in the attached testimony presented to the Senate Environment and Public Works Committee by my colleague, Ms. Vicki Patton of the Environmental Defense Fund, the Office of Management and Budget was actually working to delete references to ozone mortality in EPA rulemaking documents. The rulemakings in question related to standards to limit ozone pollution from gasoline powered lawnmowers, handheld garden engines and marine engines. In response to OMB objections to including information relating to mortality, EPA acquiesced and indicated to OMB that “we have removed all references to quantified ozone benefits (including mortality) in the most recent version of the ES.” Thus, instead of working to incorporate the latest scientific knowledge into EPA rulemaking efforts, OMB was actually working to purge EPA rules of any mention of ozone mortality. Unfortunately, this level of OMB intrusion into the scientific basis for these rulemakings was but a harbinger of future interference with the scientific process, as I discuss later in my testimony.

⁵ Letter from Dr. Rogene Henderson, Chair, Clean Air Scientific Advisory Committee to Stephen L. Johnson, Administrator, U.S. Environmental Protection Agency, re Clean Air Scientific Advisory Committee’s (CASAC) Peer Review of the Agency’s 2nd Draft Ozone Staff Paper, EPA-CASAC-07-001, October 24, 2006.

1997 8-hour ozone standard⁶. Well over half the population, in the 10 most populous states, live in areas that exceed that standard. According to the American Lung Association, that number includes more than 16 million children and more than 6 million people age 75 and older. It includes more than 9 million people who suffer from asthma, 3.5 million people who suffer from chronic bronchitis and 1.3 million people who suffer from emphysema. These are the “sensitive populations” that EPA is charged with protecting under the Clean Air Act. EPA’s decision not only leaves the populations breathing air that is unsafe, but it fails to provide them with any additional “margin of safety” a point made most clearly by the CASAC and numerous other commentors.

Having established that ozone exposure leads to a variety of health effects, including premature death, and that millions of Americans are exposed to these effects, I would like to turn to the statutory process for establishing National Ambient Air Quality Standards, a process which has worked, and worked well, for nearly 40 years to protect public health from air pollution.

The Clean Air Act provides a clear process for establishing the NAAQS. The first step in establishing a NAAQS involves identifying those pollutants “emissions of which, in [EPA’s] judgment, cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare,” and “the presence of which, in the ambient air, results from numerous or diverse mobile or stationary sources.”⁷ Once EPA identifies a pollutant, it must select a NAAQS that is based on air quality “criteria”

⁶ U.S. EPA Green Book, 8 Hour Ozone Nonattainment Areas, (as of March 12, 2008).

⁷ Clean Air Act section 108

reflecting “the latest scientific knowledge useful in indicating the kind and extent of all identifiable effects on public health or welfare which may be expected from the presence of such pollutant in the ambient air⁸.” Primary NAAQS must be set at a level “requisite to protect the public health” with “an adequate margin of safety⁹.”

Thus, any standards that EPA promulgates under these provisions must: (1) protect public health and (2) provide an adequate margin of safety. Further, the statute makes clear that there are significant limitations on the discretion granted to EPA in selecting a level for the NAAQS. In exercising its judgment, EPA must (1) err on the side of protecting public health, (2) must base decisions on the latest scientific knowledge giving due deference to the recommendations of the Clean Air Science Advisory Committee, and (3) may not consider cost or feasibility in connection with establishing the NAAQS.

The United States Court of Appeals for the District of Columbia Circuit outlined the process succinctly as follows:

“Based on these comprehensive [air quality] criteria and taking account of the ‘preventative’ and ‘precautionary’ nature of the act, the Administrator must then decide what margin of safety will protect the public health from the pollutant’s adverse effects – not just known adverse effects, but those of scientific uncertainty or that ‘research has not yet uncovered.’ Then, and without reference to cost or technological feasibility, the Administrator must promulgate national standards that limit emissions sufficiently to establish that margin of safety. “

American Lung Assn. v. EPA, 134 F.3d 388, 389 (D.C. Cir. 1998) (citations omitted);

⁸ Id.

⁹ Clean Air Act section 109

This same process was described by Justice Scalia, writing for the unanimous Supreme Court in the *Whitman v. American Trucking Associations* case as follows: “The EPA, based on the information about health effects contained in the technical ‘criteria’ documents compiled under section 108(a)(2), is to identify the maximum airborne concentration of a pollutant that the public health can tolerate, decrease the concentration to provide an “adequate” margin of safety and set the standard at that level. *Whitman v. American Trucking Assn.*, 531 U.S. 457, 464- 71 (2001)¹⁰ See also H.Rep. 294, 95th Cong., 1st Sess. 49-51 (1977) (explaining amendments designed *inter alia* “[t]o emphasize the preventive or precautionary nature of the act, i.e., to assure that regulatory action can effectively prevent harm before it occurs”).

A key feature of the act is the requirement that NAAQS be based on the “latest scientific knowledge.” To assist in ensuring that this is the case, the Act created the independent Clean Air Scientific Advisory Committee. The Act expressly requires EPA, in developing standards, to consider the advice of the statutorily-created CASAC and rationally explain any important departure from CASAC’s recommendations¹¹.

In this case, the CASAC panel appointed to review the ozone standard consists of 23 distinguished scientists representing a broad range of disciplines and perspectives.

This panel was comprised of the nation’s leading experts in ozone air pollution science

¹⁰ According to the Supreme Court: “Were it not for the hundreds of pages of briefing respondents have submitted on the issue, one would have thought it fairly clear that this text does not permit the EPA to consider costs in setting the standards.” *Whitman v. American Trucking Assns.*, 531 U.S. 457, 465 (2001).

¹¹ Clean Air Act sections 109 and 307(d).

and health. The committee conducted a very thorough review of the adequacy of EPA's scientific assessments. The panel met at least six times over the course of the review and submitted detailed oral comments and seven sets of written comments totaling 500 pages on the review plan, the exposure and risk assessments and the draft and final Criteria Document and Staff Paper. It is remarkable for such a diverse group of scientists to agree upon anything, but in this case they achieved consensus on several key issues.

Most importantly, CASAC unanimously indicated that the primary standard needed to be revised and that the level should be set between 0.060 to 0.070 parts per million. The actual language of the CASAC panel leaves no room for doubt about their conclusions:

“There is no scientific justification for retaining the current primary 8-hr NAAQS of 0.08 parts per million (ppm¹²), and the primary 8-hr NAAQS needs to be substantially reduced to protect human health, particularly in sensitive populations.”

“Additionally, we note that the understanding of the associated science has progressed to the point that there is no longer significant scientific uncertainty regarding the CASAC's conclusion that the current 8-hr primary NAAQS must be lowered.”

“A large body of data clearly demonstrates adverse human health effects at the current level of the 8-hr primary ozone standard. Retaining this standard would continue to put large numbers of individuals at risk for respiratory effects and/or significant impact on quality of life including asthma exacerbations, emergency room visits, hospital admissions and mortality.”

“...on the basis of the large amount of recent data evaluating adverse health effects at levels at or below the current NAAQS for ozone, it is the unanimous opinion of the CASAC that the current primary ozone NAAQS is not adequate to protect human health.”

“Therefore, the CASAC unanimously recommends a range of 0.060 to 0.070 ppm for the primary ozone NAAQS.”

¹² ppm=parts per million.

“Accordingly, the CASAC unanimously recommends that the current primary ozone NAAQS be revised and that the level that should be considered for the revised standard be from 0.060 to 0.070 ppm, with a range of concentration-based forms from the third- to the fifth-highest daily maximum 8-hr average concentration.”

Letter from Dr. Rogene Henderson, Chair, Clean Air Scientific Advisory Committee to Stephen L. Johnson, Administrator, U.S. Environmental Protection Agency, re Clean Air Scientific Advisory Committee’s (CASAC) Peer Review of the Agency’s 2nd Draft Ozone Staff Paper, EPA-CASAC-07-001, October 24, 2006.

CASAC is not just any public commenter. CASAC is not just any EPA advisory committee. CASAC is the Congressionally-chartered advisory committee specifically charged by the Clean Air Act with making recommendations to the Administrator on the revision of air quality standards. The CASAC committee reviews all the science during the NAAQS review process. Revisions of the standards must by law be based solely on the science. Unfortunately, and contrary to both the scientific evidence and the law, EPA chose to disregard CASAC’s advice and to set a final ozone NAAQS at 0.075 parts per million.

As noted in Dr. Henderson’s testimony, CASAC’s response to the final rule that set the standard at 0.075 ppm, above the CASAC recommended range, was immediate and clear:

“[T]he members of the CASAC Ozone Review Panel do not endorse the new primary ozone standard as being sufficiently protective of public health.”

“The CASAC — as the Agency’s statutorily-established science advisory committee for advising you on the national ambient air quality standards — unanimously recommended decreasing the primary standard to within the range of 0.060–0.070 ppm.”

“It is the Committee’s consensus scientific opinion that your decision to set the primary ozone standard above this range fails to satisfy the explicit stipulations of the Clean Air Act

that you ensure an adequate margin of safety for all individuals, including sensitive populations.”

Letter from Dr. Rogene Henderson, Chair, Clean Air Scientific Advisory Committee to Stephen L. Johnson, Administrator, U.S. Environmental Protection Agency, re Clean Air Scientific Advisory Committee’s (CASAC) Recommendations Concerning Final Rule for National Ambient Air Quality Standards for Ozone: EPA CASAC 08-009. April 7, 2008.

Although many other commenters with substantial scientific expertise¹³ agreed with CASAC regarding the need to set the primary ozone standard at between 0.060 ppm and 0.070 ppm, it should be apparent, based on the foregoing discussion, that the new ozone NAAQS does not fulfill the law’s health protection mandates. EPA’s standard was set outside the scientifically defensible range identified by CASAC, and therefore fails to protect public health. Moreover, EPA’s standard fails to include any margin, much less an “adequate” margin, of safety, as required by the statute and by the precautionary principle elucidated in the statute and caselaw.

This is not the first time during this Administration that EPA has distorted the scientific process in favor of polluters and ignored clear language in the statute, only to have its position repudiated by the courts. In fact, at this point, there are too many such examples, ranging from EPA’s rules on New Source Review, to its rules on toxic mercury pollution

¹³ These commenters included EPA’s own Children’s Health Protection Advisory Committee, the American Academy of Pediatrics, the American Thoracic Society, the American Medical Association, and the American College of Chest Physicians, among others. A list of such public health commentors is attached to this testimony.

and its untenable legal position regarding greenhouse gas regulation. None of these rules or legal positions has survived judicial review. And EPA's final rule for the particulate matter NAAQS, although it has not yet been invalidated in court, is yet another unfortunate example of clear EPA disregard for the scientific evidence and process. The net effect of these unlawful and unsupported decisions is to delay implementation and compliance with the Clean Air Act, and to therefore expose our citizens to air that we know to be unhealthy, for years to come.

EPA and others have attempted to justify the EPA decision as a "policy judgment." In considering such a claim it is instructive to review the actual language of the statute which states that primary NAAQS "*shall be ambient air quality standards, the attainment and maintenance of which, in the judgment of the Administrator, based on such criteria, and allowing an adequate margin of safety, are requisite to protect the public health*¹⁴." The term "criteria" refers to the language of section 108, which states that: "*air quality criteria for an air pollutant shall accurately reflect the latest scientific knowledge useful in indicating the kind and extent of all identifiable effects on public welfare which may be expected from the presence of such pollutant in varying quantities*¹⁵."

Thus, while there is an element of "judgment" in the NAAQS decision, that judgment must be based on the "latest scientific knowledge" taking into consideration

¹⁴ Clean Air Act section 109

¹⁵ Id.

only questions of “public health” and questions of what constitutes an “adequate margin of safety.”

The Administrator’s decision in this regard fails to pass muster as a scientifically based “policy judgment” regarding public health. CASAC’s language in this regard was unusually clear in indicating that the scientific evidence pointed to health effects occurring with the range of 0.060-0.070 ppm and they made clear that the existing standard was inadequate to protect public health. The basis for the decision recommending that the top of the range be set at 0.070 ppm was that numerous peer reviewed studies indicated health effects at 8 hour ozone levels well below 0.070 ppm. These studies include controlled human exposure studies showing adverse effects in healthy individuals at levels as low as 0.060 ppm, and numerous epidemiological studies showing morbidity and mortality effects at levels even below 0.060 ppm. Allowing the public to be exposed to these effects would not protect public health with an adequate margin of safety. Setting a standard, as EPA did, above this level and then calling it a “policy” judgment is little more than a way of covering over the “policy” decision to disregard the available scientific evidence.

A key example of EPA’s flawed approach relates to EPA’s rationale for setting the level of the standard. In setting the level of the standard at 0.075 ppm, EPA used information available from the exposure assessment relating to what it called “exposures of concern.” EPA indicated that the “continuum” of exposures of concern ran from 0.060-0.080 ppm. However, in explaining its decision to set the level at 0.075 ppm, EPA

noted that it “primarily focused on exposures of concern at and above the 0.070 benchmark level as an important surrogate measure for potentially more serious health effects for at risk groups, including people with asthma. “ 72 Fed. Reg. 16477 (March 27, 2008) . EPA went on to state that: ”[a] standard within the 0.070-0.075 ppm range would thus substantially reduce exposures of concern by about 90 to 80 percent respectively, from those estimated to occur from just meeting the current standard.” Id. EPA therefore concluded that: “a 0.070 ppm standard would be expected to provide protection from exposures of concern that the Administrator had primarily focused on for over 98% of all and asthmatic age school children.” Id.

The circularity of this reasoning is characteristic of EPA’s decisionmaking in this rulemaking. EPA itself decided to focus on exposures of concern between 0.070 ppm and 0.075 ppm. Not surprisingly then, and simply as a matter of logic and definition, a standard set in that range would eliminate most of those “exposures of concern.” However, such a standard would not effectively address exposures of concern in the CASAC identified range of 0.060-0.070 ppm. Had EPA evaluated that information it would have been forced to contend with the fact that a standard between 0.070 ppm and 0.075 ppm leaves unprotected 39,000-78,000 children with asthma in the 12 cities under consideration¹⁶. EPA’s reasoning here is little more than thinly disguised self-justification for its initial arbitrary decision to “primarily focus[] on exposures of concern at and above the 0.070 ppm benchmark level.” Unfortunately this leaves thousands of children at risk for health effects and minimizes the import of epidemiological

¹⁶ See Comments of the American Lung Association et al on the EPA’s Proposed Revisions to the National Ambient Air Quality Standards for Ozone, (July 11, 2007 at 104-105.)

information showing health effects, such as emergency room visits and hospital admissions, which occur from exposures at levels below that benchmark¹⁷. It is this type of disregard for the scientific evidence that forced CASAC to conclude that EPA had not met its obligations under the Clean Air Act in setting the standard and thus that the standard “fails to satisfy the explicit stipulations of the Clean Air Act that ensure an adequate margin of safety for all individuals including sensitive populations¹⁸.”

In fact, the record created by EPA and CASAC reveals very solid reasons for CASAC’s conclusion that the standard must be set between 0.060 ppm and 0.070 ppm. Since 1996, two controlled human exposure studies have been conducted that evaluated the effect on lung function -- forced expiratory volume in one second (FEV₁) -- of various exposure regimes to concentrations of ozone of 0.08 ppm, 0.06 ppm and 0.04 ppm, for 6.6 hours¹⁹. In these studies, healthy human subjects are exposed in chambers to low levels of ozone. The fact that effects can be demonstrated in healthy human subjects at such exposure levels indicates that sensitive populations, such as people with asthma and other respiratory illnesses would be even more likely to experience such effects. However, it is not possible to test such sensitive populations consistent with medical ethics.

¹⁷ Id.

¹⁸ Letter from Dr. Rogene Henderson, Chair, Clean Air Scientific Advisory Committee to Stephen L. Johnson, Administrator, U.S. Environmental Protection Agency, re Clean Air Scientific Advisory Committee’s (CASAC) Recommendations Concerning Final Rule for National Ambient Air Quality Standards for Ozone: EPA CASAC 08-009. April 7, 2008.

¹⁹ Adams WC. Comparison of chamber and face-mask 6.6 hour exposures to ozone on pulmonary function and symptoms responses. *Inhalation Toxicol* 2002; 14: 745-764.; Adams WC. Comparison of chamber 6.6 h exposures to 0.04-0.08 PPM ozone via square-wave and triangular profiles on pulmonary responses. *Inhalation Toxicol* 2006; 18: 127-136.

These studies by Adams were funded by the American Petroleum Institute and were intended to address the effect of various exposure regimes on lung function responses to ozone. These studies showed statistically significant effects at 0.06 ppm, which included decreases in FEV₁ and pain upon deep inspiration. In response to criticisms from a consultant to the American Petroleum Institute, EPA has undertaken a careful reanalysis of the underlying data in the Adams (2002, 2006) studies to assess the change in FEV₁ following exposure to 0.06 ppm ozone and filtered air. The reanalysis concluded that exposure to 0.06 ppm ozone causes a small, but statistically significant decrease in group mean FEV₁ responses compared to filtered air²⁰.

In addition, there are a number of epidemiological studies that show effects at levels of ozone below 0.060 ppm. It is noteworthy that five studies report positive, statistically significant relationships between 8-hour ozone concentrations and various adverse effects at 98th percentile concentrations below 0.060 ppm, seven additional studies (for a total of 12) report effects below 0.70 ppm. Furthermore, the Criteria Document and Staff Paper include discussion of numerous additional epidemiological studies that are positive, though not statistically significant, which add weight to the overall findings of effects that are evident at low concentrations²¹.

²⁰ U.S. EPA Memorandum from James S. Brown, EPA, NCEA-RTP Environmental Media Assessment Group, Thru Mary Ross, EPA, NCEA-RTP, EMAG Branch Chief and Ila Cote, EPA, NCEA-RTP, Director, To Ozone NAAQS Review Docket (OAR-2005-0172), The Effects of Ozone on Lung Function at 0.06 ppm in Healthy Adults, June 14, 2007.

²¹ See Comments of the American Lung Association et al on the EPA's Proposed Revisions to the National Ambient Air Quality Standards for Ozone, (July 11, 2007 at 51-55.)

Finally, there were a number of epidemiological studies that demonstrated effects even after excluding observations above certain concentrations including some very low concentrations. This type of study provides compelling evidence of associations evident at low concentration and is very relevant to standard setting. Some of the studies can be summarized as follows:

- Brunekreef, 1994: Even after removing all observations with hourly ozone concentrations greater than 60 ppb, researchers found a decline in lung function and an increase in respiratory symptoms in this group of amateur cyclists.
- Brauer 1996: Even after excluding all days when the ozone was greater than 40 ppb, investigators still observed reduced lung function in a cohort of outdoor workers.
- Mortimer 2002: After excluding days when 8-hour average ozone was greater than 0.080 ppm, the associations with morning lung function decrements remained statistically significant.
- Bell, 2004: Estimates of premature mortality attributable to ozone changed little when days with 24-hour average concentrations greater than 0.06 ppm were excluded.
- Bell, 2006: There was little difference in the mortality effect estimate when days with 24-hour ozone concentrations above 0.02 ppm were excluded.

See Comments of the American Lung Association et al on the EPA's Proposed Revisions to the National Ambient Air Quality Standards for Ozone, (July 11, 2007 at 79-80 for a fuller discussion and citations.)

Despite the clear evidence of health effects at levels below 0.070 and even below 0.060, EPA claimed "uncertainty" as a basis for its decision, but the extensive record before the Agency and the unanimous CASAC findings refute that claim. And even if there were uncertainty, the Clean Air Act says that the Administrator must choose a more, not less, stringent standard in the face of uncertainty, to ensure a margin of safety. If uncertainty

is really the reason for disregarding CASAC's advice, then the Administrator should have set an even more stringent standard, not only to protect public health but also to provide a margin of safety against that uncertainty. In this case, however, EPA chose to err not in setting a margin of safety, but by ignoring a clear margin of danger.

My testimony up to this point has focused on the primary standard which is focused on public health. Unfortunately, it is also necessary to address EPA's setting of the secondary standard, a process which reveals even more clearly the stamp of Administration "policy" unfettered from the constraints of the statute.

Under the Clean Air Act, EPA is also required to set a secondary standard for pollutants that are listed under section 108. That standard is to be one that is "requisite to protect the public welfare from any known or adverse effects associated with the presence of such air pollutant in the ambient air." CAA section 109. "Welfare" effects are broadly defined under section 302(h) of the Clean Air Act to include "effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility and climate, damage to and deterioration of property and hazards to transportation as well as effects on economic values and personal comfort and well being, whether caused by transformation, conversion or combination with other air pollutants." CAA 302(h).

The record in this case reveals quite clearly that the secondary standard was set at the same level as the primary standard due to last minute interference by the Office of Management and Budget. In fact, with regard to the secondary standard, EPA Deputy

Administrator Marcus Peacock explicitly disagreed with the Office of Management and Budget regarding the decision to set the standard at the same level as the primary standard²². Unfortunately, as with the decision regarding the primary standard to protect polluters over people, the Administration also chose to protect polluters over plants and sensitive ecosystems.

Because plants react differently than people to ozone, CASAC unanimously recommended that: “protection of managed agricultural crops and natural terrestrial ecosystems requires a secondary ozone NAAQS that is substantially different from the primary ozone standard in averaging time, level and form²³.” CASAC recommended the “sigmoidally weighted W126 index accumulated over at least the 12 “ daylight hours and over at least the three maximum ozone months of the summer season²⁴.” EPA staff agreed and indicated that: “it is not appropriate to continue to use an 8-hr averaging time for the secondary O₃ standard” and that the “8-hr average form should be replaced with a cumulative seasonal, concentration weighted form.”²⁵

Despite the clear need for a different secondary standard for ozone, on March 6, 2008, Office of Management and Budget Administrator Susan Dudley, wrote to EPA Administrator Johnson to indicate that “the draft rule “does not contain a reasoned basis for concluding that a secondary standard set separate from the primary standard is

²² Memorandum from EPA Deputy Administrator Marcus Peacock to Administrator Susan Dudley, Office of Information and Regulatory Affairs, Office of Management and Budget (Mar. 7, 2008).

²³ Letter from Dr. Rogene Henderson, Chair of the Clean Air Scientific Advisory Committee, to EPA Administrator Stephen L. Johnson (Mar. 26, 2007).

²⁴ Id.

²⁵ Environmental Protection Agency, *Review of the National Ambient Air Quality Standards for Ozone: Policy Assessment of Scientific and Technical Information* (July 2007)(EPA-452/R-07-007a).

“requisite to protect public welfare²⁶.” In her letter to Administrator Johnson, Ms. Dudley concluded that: “Adopting a W126 standard would also deviate from EPA’s past practice which has been to set a secondary ozone NAAQS equal to the primary ozone NAAQS²⁷.” Ms. Dudley also indicated that: “EPA has not yet considered or evaluated the effects of adopting aW126 standard on economic values, personal comfort and well being, as specifically enumerated in the Act.²⁸”

The very next day, EPA Deputy Administrator Peacock wrote back and noted that with regard to evaluating effects on personal comfort and well being, “EPA is not aware of any information indicating beneficial effects of ozone on public welfare and we are not aware of any information that ozone has beneficial effects on personal comfort or well being. All the information in the record seems to indicate otherwise²⁹.” Mr. Peacock went on to state that “the legal status of a secondary standard differs from that of a primary standard. By definition, the primary standard and the secondary standard are separate legal actions based on separate criteria³⁰.” Mr. Peacock went on to note that EPA has in the past set secondary standards that are different than the primary standard. Finally, he noted that: “ozone related effects on vegetation are clearly linked to cumulative, seasonal exposures and are not appropriately characterized by the use of a short-term (8 hour) daily measure of ozone exposure³¹.”

²⁶ Memorandum from Administrator Susan Dudley, Office of Information and Regulatory Affairs, Office of Management and Budget, to EPA Administrator Stephen L. Johnson (Mar. 6, 2008).

²⁷ Id.

²⁸ Id.

²⁹ Memorandum from EPA Deputy Administrator Marcus Peacock to Administrator Susan Dudley, Office of Information and Regulatory Affairs, Office of Management and Budget (Mar. 7, 2008).

³⁰ Id.

³¹ Id.

On March 11, 2008, EPA staff drafted confidential and privileged talking points for a meeting between EPA and the President. These talking points stated that: “[t]he seasonal form is the most scientifically defensible. Ozone decreases the ability of plants to produce and store food. The impact of repeated ozone exposure accumulates over the course of the growing season...new evidence includes a broader array of vegetative effects and a diverse set of research studies looking at the effects of ozone in the real world.” The talking points also indicate that the seasonal form “is the most legally defensible” and that “EPA has extensive record support for a seasonal form and lacks scientific support for an 8 hour form.”

On March 13, 2008, Ms. Dudley wrote back to indicate that: “The President has concluded that, consistent with Administration policy, added protection should be afforded to public welfare by strengthening the secondary ozone standard and setting it to be identical to the new primary standard³².”

The story of the behind the scenes maneuvering that, incredibly, resulted in President Bush himself deciding that the secondary ozone standard should match the primary standard, was detailed in an article in the Washington Post: “Ozone Rules Weakened at Bush’s Behest.” Washington Post, Friday March 14 , p. A14. The struggle between EPA, OMB and the President, and the last minute intervention by U.S. Solicitor General

³² Letter from Administrator Susan Dudley, Office of Information and Regulatory Affairs, Office of Management and Budget, to EPA Administrator Stephen L. Johnson (Mar. 13, 2008).

Paul Clement, who warned that such a decision “contradicted past submissions to the Supreme Court³³ has been well documented in a number of sources.³⁴

The final day scramble to ensure that the secondary standard would be the same as the primary standard is perhaps, to date, one of the most egregious example of a NAAQS standard setting process completely unmoored from its statutory tethers. The science shows that plants need to be protected on a cumulative, seasonal basis and not just on a short-term ambient basis. The fact that plants and human lungs respond differently to ozone, and require different standards, is hardly counterintuitive, novel or difficult to accept³⁵. What this decision reveals is a clear Administration “policy” to disregard the scientific evidence and to disregard the well established dictates of the law at the expense of clean air. In the meantime, our children and our elderly, our plants and forests and crops, will all continue to be exposed to levels of ozone that cause health effects, including premature death, and that damage our ecosystems.

Thank you for the opportunity to testify before the Committee. That concludes my written testimony and I would be happy to answer any questions that you may have.

³³ Washington Post, Friday March 14 , p. A14

³⁴ See John Walke, “Science Decider in Chief”

http://switchboard.nrdc.org/blogs/jwalke/science_decider_in_chief.html

³⁵ As one member of CASAC put it long ago, “[t]he injurious effects of ozone and other oxidants on plants and ecosystems are CUMULATIVE in their effects rather than acute or chronic in their effects as is found for most health effects of ozone on people...many plant pathologists, plant physiologists and ecologists like me are prone to assert, somewhat facetiously, that: “plants do not worry about a bad Tuesday, but they do worry about a bad ozone season. “ Statement of Ellis B. Cowling, University Distinguished Professor at Large and Professor of Plant Pathology and Forest Resources, North Carolina State University, to the Clean Air Scientific Advisory Committee, March 21, 1996.