



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

MAR - 8 2004

OFFICE OF  
AIR AND RADIATION

Mr. Forrest M. Mims III  
Geronimo Creek Observatory  
433 Twin Oak Road  
Sequin, TX 78155

Re: Response to Request for Correction (RFC) regarding the recently published booklet on the Latest Findings on National Air Quality - 2002 Status and Trends pursuant to the Environmental Protection Agency (EPA) Information Quality Guidelines (RFC #12989)

Dear Mr. Mims:

This is in response to your request dated October 3, 2003, raising concerns about what you describe as "important errors and omissions" and "confusing" descriptions of "important matters" in the recently published EPA booklet entitled *Latest Findings on National Air Quality - 2002 Status and Trends*. This publication and its findings can also be accessed at EPA's Air Trends website found at <http://www.epa.gov/airtrends>. In preparing this annual booklet, we have determined that the best way to meet the information needs of the general public regarding air quality matters is to prepare the booklet with sufficient detail to facilitate understanding, but without extensive discussion of scientific underpinnings. This document is designed for the general public to be able to read about and understand air quality trends in the U.S. Furthermore, while we work to include the most relevant information in any given year for the sake of completeness, we do not attempt to cover all air quality issues nor do we attempt to address issues in an in-depth scientific manner.

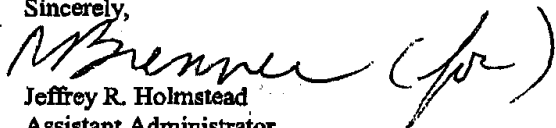
Following a thorough review, we believe that EPA has met the information quality principles outlined in *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity, of Information Disseminated by the Environmental Protection Agency* (EPA Information Quality Guidelines). Specifically, we deem the information contained within the *Latest Findings on National Air Quality - 2002 Status and Trends* to be objective and accurate and presented in a clear, complete and unbiased manner. We also believe that the level of detail provided in this booklet is appropriate for its intended use. While we are not withdrawing the 2002 Air Trends booklet per your request, we have made some clarifying changes to the EPA Air Trends website and plan to consider some of your comments in future issues of our annual Air Trends booklet. The enclosure with this letter provides a more detailed response to each of your questions and comments regarding 2002 booklet. As indicated in the enclosure, although we believe the 2002 booklet is consistent with the EPA Information Quality Guidelines, we welcome the opportunity to improve the content of future booklets. We appreciate your comments and will, of course, consider any future comments and data that you may have.

Internet Address (URL) = <http://www.epa.gov>

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We hope you find our question-by-question responses in the enclosure helpful. If you are dissatisfied with EPA's decision on this request, you may submit a Request for Reconsideration (RFR). EPA recommends that this request be submitted within 90 days of the date on this letter. To do so, send a written request to EPA's Information Quality Guidelines Processing Staff via mail (Information Quality Guidelines Staff, Mail Code 28220T, US. EPA, 1200 Pennsylvania Ave., N.W, Washington, D.C., 20460), electronic mail ([quality.guidelines@epa.gov](mailto:quality.guidelines@epa.gov)) or fax (202 566-0255). The RFR should reference the request number assigned to the original request for correction (identified in the heading of this response). Additional information that should be included in the request is listed on the EPA Information Quality Guidelines web site (<http://www.epa.gov/oei/qualityguidelines>).

Sincerely,



Jeffrey R. Holmstead  
Assistant Administrator

Enclosure

## ENCLOSURE

EPA believes that the booklet "Latest Findings on the National Air Quality – 2002 Status and Trends" was developed and presented in ways consistent with the EPA Information Quality Guidelines. Below we have reproduced the questions from your request and have coupled them with an EPA response. Text shown in italics is quoted directly from your request.

### *1. AFRICAN AND ASIAN DUST STORMS*

*Nowhere does the report discuss the significant increase of PM2.5 and PM10 caused by dust from windstorms originating in North Africa and China. I measure dust from Africa and China here every year. If new PM2.5 standards now under consideration by EPA are implemented, these dust storms alone will be sufficient to cause air quality violations during certain times of the year over broad areas of the U.S.*

*QUESTION: Why is dust from Asia and Africa ignored in the report?*

EPA ANSWER: This topic is very interesting and may soon be ready for presentation in the booklet. We are aware of several studies identifying this phenomenon and are reviewing them in the context of the Regional Haze program. We also performed a study this year on the April 2002 Asian dust event, which can be found at the Air Trends website at Special Studies.

### *2. DOMESTIC AGRICULTURAL FIRES*

*The report properly addresses smoke that originates in Mexico. Yet nowhere does the report discuss the massive pollution caused by domestic agricultural fires, some of which reaches Mexico. Louisiana alone burns 450,000 acres of sugarcane each fall, which causes massive air pollution regionally. During September 2002, smoke from Louisiana and Arkansas contributed to major air pollution problems across Texas.*

*QUESTION: Why is domestic agricultural burning ignored in the booklet?*

EPA ANSWER: While we are aware of the practice of agricultural burning and have been working with the Department of Agriculture to better understand these practices, due to limited resources, we have not yet specifically discussed domestic agricultural burning in the booklet. We do present emissions trends associated with wildfires and prescribed burning of brush and trees for a large group of pollutants. We do not however, present emissions data for the most recent year as the activity data for such fires is still being compiled and therefore we cannot estimate the emissions. The availability of this data lags behind by a year and will be included in the next year's trends report. Even though emissions and air quality issues related to domestic agricultural burning remain uncertain, they are important and we hope to address these issues in a future booklet.

### 3. PRESCRIBED FIRES

*Nowhere does the report cover the massive air pollution caused by prescribed burns of timber and brush. So far this year alone, the Federal government has intentionally ignited fires that have burned more than 2.6 million acres. These fires release substantial amounts of methyl chloride and methyl bromide, both of which cause depletion of stratospheric ozone. These fires also cause huge violations of PM2.5 and PM10 air quality guidelines. Moreover, ozone precursors in smoke from prescribed fires and agricultural burning lead to significant ozone production downwind when cloud cover is not present.*

*QUESTION: Why is the enormous pollution impact of prescribed fires completely ignored in the report?*

**EPA ANSWER:** We have not ignored the pollution impact of prescribed burns. We present emissions trends data that incorporate the impacts of wildfires and prescribed burning for a large group of pollutants. We do not, however, present emissions data for the most recent year because the activity data for these fires are still being compiled. Therefore, we cannot estimate the emissions. These data become available the year after collection and as such, emissions information is included in the subsequent year's report. While we are aware of the prescribed burns of timber and brush, and have been working with the National Forest Service to better understand these practices, due to limited resources, we have not specifically discussed prescribed burns in the booklet. Even though emissions and air quality issues related to prescribed fires remain uncertain, they are important and we hope to address these issues in a future booklet.

### 4. SMOG

*QUESTIONS: What is the peer-reviewed reference that concludes that ozone is the primary ingredient of smog? Can you change "the primary constituent of smog" to read "a primary constituent of smog"?*

**EPA ANSWER:** In many general public documents, the terms "ozone" and "smog" are used interchangeably. In EPA's Criteria Document for Ozone (AIR QUALITY CRITERIA FOR OZONE AND RELATED PHOTOCHEMICAL OXIDANTS. USEPA EPA/600/P-93/004a-cF. 01 Jul 1996. U.S. Environmental Protection Agency, Office of Research and Development, National Center for Environmental Assessment, Washington, DC.), we characterize ozone as the major component of photochemical oxidant air pollution that is clearly of most concern to the health of the human population. While we believe the statement is not confusing and is sufficiently specific for purposes of a non-scientific explanation aimed at the general public, we will change the parenthetical to "a primary constituent of smog", to the extent that the parenthetical exists in future booklets.

## 5. OZONE FORMATION

*The report states: "Ozone is not emitted directly into the air....". This incorrect statement is often repeated by journalists who rely on EPA literature. Ozone is directly emitted into the air by various mechanisms, including naturally by lightning and artificially by many kinds of electrical equipment (including laser printers, xerographic copy machines, DC motors with brushes, high voltage electrical discharges, etc.)*

*QUESTION: Can the EPA support this assertion with a peer-reviewed reference? If not, when will EPA correct this often quoted but incorrect statement?*

EPA ANSWER: We do not dispute that ozone can be emitted directly into the air by various mechanisms, including naturally by lightning and artificially by many kinds of electrical equipment. However, they are not significant contributors to ambient ozone levels. In EPA's Criteria Document for Ozone, EPA states that:

Ozone is formed photochemically in the stratosphere and transported downward, resulting in the presence of O<sub>3</sub> in the natural or "clean" troposphere... Although O<sub>3</sub> at relatively low concentrations is an integral part of the clean troposphere, its presence at higher concentrations is detrimental. (p3-2)

In the Latest Findings on National Air Quality - 2002 Status and Trends booklet, we state that "ozone is not emitted directly into the air" as a way to focus the reader on the important aspects of ozone. In addition, we contrast ambient ozone levels with ambient SO<sub>2</sub>, NO<sub>2</sub> and similar air pollutants. Ozone is mainly a result of atmospheric chemical reactions of NO<sub>x</sub> and VOC; whereas, pollutants such SO<sub>2</sub> and NO<sub>2</sub> are primarily directly emitted. We think the public would be misinformed by prominently saying ozone is directly emitted into the air. As of December 2003, we have changed this passage on EPA's Air Trends website (<http://www.epa.gov/airtrends>) to read: "...ozone is rarely emitted directly into the air." We plan to take a similar approach in the next booklet.

## 6. OZONE PHOTOLYSIS

*The report continues: "[Ozone ...] is formed by the reaction of VOCs and NO<sub>x</sub> in the presence of heat and sunlight." This statement suggests that heat is necessary for the photolysis of ozone.*

*QUESTION: Can the EPA support its "heat" assertion with a peer-reviewed reference? If not, will the EPA revise this and other assertions to remove the implication that the synthesis of tropospheric ozone requires heat?*

EPA ANSWER: In using the term "heat," we intend to inform the public that ozone is elevated mainly during the warmest parts of the year. For future booklets, we will adjust this language to delete "heat" while indicating that temperature is an important factor in ozone formation. For now, we have changed this passage on EPA's Air Trends website to delete "heat and."

## 7. NATURAL AND BIOGENIC OZONE PRECURSORS

*The report states: "VOCs are emitted from a variety of sources, including motor vehicles, chemical plants, refineries, factories, consumer and commercial products, and other industrial sources. NOx is emitted from motor vehicles, power plants, and other sources of combustion."*

*This paragraph is highly misleading, for it makes absolutely no mention of natural sources of VOCs and NOx. Plants are major sources of many VOCs, yet the only plants mentioned are "chemical plants." It is important that the general public be aware that natural processes contribute to air quality problems. For example, the regional transport of VOCs from heavily forested regions to regions with major anthropogenic sources of NOx can lead to high levels of ozone when sunlight is sufficiently intense.*

*QUESTION: Will the EPA revise the publication to also list biogenic and other natural sources of VOC and NOx?*

**EPA ANSWER:** We agree that biogenic emissions are an important component of the background contribution to air quality. However, plants (vegetation) are not major sources of VOCs, whereas many "chemical plants" emit enough VOCs to be considered major. One of the key aspects of this booklet is to inform the public about the important actions undertaken within the U.S. to reduce emissions of air pollutants; thus, we focus on anthropogenic emissions. For future booklets, we will adjust this language to read: "... , other industrial sources, and biogenic sources" and for now, we have changed this passage on EPA's Air Trends website.

## 8. UV-B

*The report states:*

*"In humans, UV-B radiation is linked to skin cancer, including melanoma, the form of skin cancer with the highest mortality rate." Melanoma is also linked with UV-A exposure, which is unaffected by the ozone layer. Moreover, melanoma is linked with sunburn early in life, which completely independent of ozone decline. It is misleading to suggest that ozone decline is leading to increased melanoma.*

*QUESTION: Can the discussion of melanoma be expanded to better reflect the current state of knowledge?*

**EPA ANSWER:** The focus of this booklet is on overall state of air quality and how that relates to the every day lives of people. Given this purpose, the 2002 booklet provides information readily available concerning the effects of UV-B radiation to provide context for the data provided. Additional in-depth information of the effects of UV-B radiation is readily available from a number of sources, including EPA's website (see <http://www.epa.gov/sunwise/overview.htm>).

## 9. STRATOSPHERIC OZONE DESTRUCTION

*The report states: "In the 1970s, scientists had linked several substances associated with human activities to ozone depletion, including the use of chlorofluorocarbons (CFCs), halons, carbon tetrachloride, methyl bromide, and methyl chloroform. These chemicals are emitted from commercial air conditioners, refrigerators, insulating foam, and some industrial processes."*

*Completely ignored are the methyl chloride and methyl bromide emissions from biomass burning of all kinds. It is inappropriate for the same government that endorses or ignites millions of acres of such fires to fail to list them as being ozone depleting.*

*QUESTION: Will the EPA revise the publication to mention specific byproducts of biomass burning that lead to stratospheric ozone decline?*

**EPA ANSWER:** The booklet's statement about the sources of the ozone depletion substances is accurate. Accordingly, we do not plan to change this year's booklet. However, we will consider this change for future booklets, although we will need to evaluate the significance of the quantity of these biomass-related emissions.

## 10. OZONE LAYER

*The report states "However, the growth of certain plants can be slowed by excessive UV-B radiation."*

*This is correct but incomplete. I have studied significant reduction in leaf size in cypress trees and radish plants caused by UV-B. Others have found significant improvements in productivity of certain plants that result from the suppression of various diseases by elevated UV-B.*

*QUESTION: Will the EPA revise the booklet to point out that UV-B is both beneficial and harmful?*

**EPA ANSWER:** The booklet states: "The effects of UV-B radiation on plant and aquatic ecosystems are not well understood." With a focus of this booklet being the education of the public on environmental harms from air pollution, we only go on to describe some of those harms. In other parts of this section of the booklet, we describe the nature and scope of the problem and the programs to restore the stratospheric ozone layer. In this booklet, we do not intend to educate the public on all aspects of UV-B. Additional in-depth information of the effects of UV-B radiation is readily available from a number of sources, including EPA's website (see <http://www.epa.gov/sunwise/overview.htm>).