Texas Commission on Environmental Quality (TCEQ) Written Comments to the Science Advisory Board (SAB) Ozone Review Panel for the March 23, 2011 Teleconference

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Dear Ozone Review Panel Members:

I, Dr. Michael Honeycutt, Director of the Toxicology Division of the Texas Commission on Environmental Quality, would like to offer the following written comments on behalf of the TCEQ. The Federal Register Notice for the March 23, 2011 Teleconference of the Clean Air Scientific Advisory Committee Ozone Review Panel indicated that members of the public could provide written comments. I have previously provided Oral comments to the panel on February 18, 2011.

The current proposed standard is based primarily on ecological epidemiology studies. Ecological epidemiology studies are designed as hypothesis-generating studies and are not scientifically-rigorous enough to base such an important policy decision. Meta analyses of ecological epidemiology studies may give the appearance of hard data, but they have an extremely poor exposure component and studies conducted to date show only slight associations. Even a well-conducted epidemiology study is a blunt instrument at best and not adequate to establish whether or not 75 ppb ozone is any less health protective than 65 ppb. When developing strategies to address ambient ozone, every ppb

reduction in the standard results in more emission reductions needed. If the standard is to be lowered, the scientific data must clearly demonstrate the health benefits that would result from the additional regulatory burdens. Speaking from the viewpoint of a state that has significant experience developing strategies to reduce ozone, we have plucked all of the low-hanging fruit. All that is left is severe pruning.

You yourselves have noted that personal exposure to ozone is not considered in developing this standard as illustrated in your letter dated June 5, 2006:

> "The Ozone Staff Paper should consider the problem of exposure measurement error in ozone mortality time-series studies. It is known that personal exposure to ozone is not reflected adequately, and sometimes not at all, by ozone concentrations measured at central monitoring sites….Therefore, it seems unlikely that the observed associations between short-term ozone concentrations and daily mortality are due solely to ozone itself."

Also, many ecological studies have used patient medical records instead of patient histories to monitor exposure and assess health effects. Patient medical records are inadequate indices to associate ozone exposure and health effects.

EPA also used clinical studies published by Dr. William Adams as the basis for lowering the 0.08 ppm standard. EPA reanalyzed Dr. Adams' data using t-tests rather than using a multiple comparisons post-hoc test, as pointed out by Dr. Adams himself in his comments to EPA. This reanalysis would not pass peer review. You should not give EPA a pass on it either.

Your job in this process is to ensure that EPA uses good science in deciding where to set the ozone standard. You are not policy makers. You don't get to turn a blind eye to EPA's inadequate science in the name of public health. You are supposed to hold EPA accountable to use scientifically-appropriate methodologies and analyses. You should

make EPA explain the uncertainty in the ozone standard to policy makers so that the policy makers, not you and EPA scientists, can make an informed decision that weighs all relevant factors.

In conclusion, a policy decision this important must not be made just by using good science but also by understanding its limitations and uncertainties. The exposure estimates from the ecological epidemiology studies used to justify lowering the ozone standard do not account for personal exposure to ozone and are therefore faulty, as you yourselves have noted. It is scientifically-inappropriate to use ecological epidemiology studies to set the ozone standard. EPA should use appropriate statistical analyses in looking at the Adams clinical data.