

TESTIMONY OF NORMAN R. ("SKIP") BROWN
U. S. ENVIRONMENTAL PROTECTION AGENCY
CHARTERED CLEAN AIR SCIENTIFIC ADVISORY COMMITTEE (CASAC)
PUBLIC MEETING ON PARTICULATE MATTER
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My name is Norman R. ("Skip") Brown. I am the former owner of Delta Construction Company, a family roadbuilding business started by my father in 1943 with operations in Northern California. My company was put out of business because EPA granted California a waiver from federal preemption under the Clean Air Act, allowing California to enforce its particulate matter emissions standards for off-road vehicles powered by diesel engines, such as tractors and excavators. Delta Construction did not have the capital or credit necessary to purchase the equipment necessary to comply with those stringent particulate matter emissions standards. At the same time, it was prohibited from operating its off-road vehicles because they were noncompliant. Although the California Air Resources Board (CARB) offered millions to large firms to replace non-compliant assets, Delta's equipment did not accumulate enough annual hours to qualify for assistance. My argument that parked equipment does not pollute failed to convince CARB to consider lenience. My fine for just one piece was \$1,000 per day just to own it, parked or not. That piece was sold at auction for the price of two rear tires due to the destruction of value caused by new regulations.

California's excuse for promulgating the off-road particulate matter standards was that it needed to curb emissions from off-road vehicles in order to comply with its State Implementation Plan for PM_{2.5} and 8-hour ozone. This was additionally supported via CARB's assumptions that PM_{2.5} from diesel engines was causing 3,500 deaths per year.¹ While California has 14 air quality control regions, only 2 were nonattainment for PM_{2.5} and ozone. Delta Construction performed its road building operations solely within the 12 air quality control regions that were in attainment with the State Implementation Plan. There was no need for California to impose *statewide* curbs of off-road emissions but as a result of those statewide regulations, Delta Construction went out of business.

Technical Discussion:

The underlying culprit in this story is the National Ambient Air Quality Standard (NAAQS) for Particulate Matter, which was put into effect by EPA on March 18, 2013, and which provides that the level of the primary NAAQS for PM_{2.5} is 12 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). That standard is now under a mandatory five-year review and it important for CASAC to understand that the assumption that all of the particulate matter in each size fraction are of equal toxicity on a mass basis is false, an assumption that was put into serious question by a former Chair of CASAC, Roger O. McClellan, in his 2016 peer reviewed article in RISK ANALYSIS titled, "*Providing Context for Ambient Particulate Matter and Estimates of Attributable Mortality.*" Indeed, recent scientific analysis has cast serious doubt on the evidence of a causal link

¹ Controlling Fine Particulate Matter under the Clean Air Act, March 2006

between PM_{2.5} and mortality, as set forth in Roger McClellan's work titled "*Role of Science and Judgment in Setting National Ambient Air Quality Standards: How Low Is Low Enough?*" where he questions the need for stringent PM_{2.5} standards. Moreover, in his 2016 paper, McClellan states that the assumptions upon which the current standard for PM_{2.5} is based need "careful review in the current PM review cycle." In that paper he questions the need for the current stringent PM_{2.5} standard, given the lack of credible evidence to establish a causal connection between ambient concentrations and mortality.

Others have pointed to the same problem with the current standard. For example, James E. Enstrom's paper titled, "*Fine Particulate Air Pollution and Total Mortality Among Elderly Californians*," published in *INHALATION TOXICOLOGY*, found no relationship between levels of fine particulate matter and mortality. Enstrom's research was based on 118,094 Californians enrolled in the American Cancer Society's cancer prevention study from 1973-2002. Another study performed by Anne E. Smith, published in *RISK ANALYSIS* in 2016, "*Inconsistencies in Risk Analysis for Ambient Air Pollutant Regulations*," challenges EPA's assumptions for quantifying risk estimates in setting NAAQS, focusing specifically on PM_{2.5}. These observations are confirmed in a paper by Louis Anthony Cox, Jr., which also challenges those estimates, "*Rethinking the Meaning of Concentration-Response Functions and the Estimated Burden of Adverse Health Effects Attributed to Exposure Concentrations*." These and other important factors are set forth in detail in an administrative petition filed with EPA on November 9, 2017, by the Texas Public Policy Foundation on behalf of several California companies and trade associations that have been unduly injured as a result of the NAAQS for PM_{2.5}. I include a copy of the petition to CASAC for your information.

Regardless of the above studies, the California Air Resources Board states that aerosol PM_{2.5} from diesel engines is causing 3,500 deaths per year. So we should discuss the relationship of airborne PM_{2.5} to premature death, along with a couple of sources of particulate matter.

Common Sense Discussion:

Simple epidemiological statistics associated with PM_{2.5} are just not relevant to the plausibility that it "causes" premature death. They can show "associations" but as Dr. John Dunn likes to say: "Ice cream and drowning are associated as they both are most likely to occur in the summer". But using plain facts along with common sense puts a stake in the heart of the claim of premature death caused by PM_{2.5}.

The amount of air inhaled by an adult breathing at rest is about 10 cubic meters per day or about 300 thousand cubic meters over an 80-year life span ($10\text{m}^3 \times 365\text{days} \times 80\text{years} = 292,000\text{m}^3$). The amount of PM_{2.5} possibly inhaled at the approximate current ambient level in the two worst air quality control regions of California having $15\ \mu\text{g}/\text{m}^3$ in 80 years is about 4.5 grams ($300,000\text{m}^3 \times 15\ \mu\text{g}/\text{m}^3 / 1,000,000\ \mu\text{g}/\text{gram} = 4.5\text{grams}$). **The amount of aerosol diesel PM_{2.5}, based on**

estimates by the California Air Resources Board that it is 4%² of total PM_{2.5}, is about 0.18 grams in 80 years (4.5grams x .04% = .18gram).

The EPA has stated that smoking a single cigarette could result in the inhalation of up to 40,000 micrograms (.04grams) of PM_{2.5}. **The amount of inhaled diesel PM_{2.5} over 80 years (0.18grams) is less than the PM_{2.5} inhaled from smoking just five cigarettes, or 0.20 grams (.04grams x 5cigarettes = .20grams).** Based on just common sense, these low levels of inhaled PM_{2.5} from diesel engines are not sufficient to kill anyone in California or anywhere else. Not only have I have been breathing California air but I have been exposed daily to PM_{2.5} from diesel construction equipment my entire life, not to mention that I smoked 2 packs of cigarettes (Lucky Strike) a day for 5 years (2packs x 365days x 5years x 20cigarettes per pack = 36,500 cigarettes), or 1,460 grams of PM_{2.5} (36,500cigarettes x .04grams per cigarette = 1,460grams) and I am still here at the age of 75. The absurdity of the inhalation of 0.18 grams of diesel particulate matter over 80 years can be a cause of premature death is ridiculous.

I am here, but my Company was destroyed for my contribution of the total aerosol diesel PM_{2.5} to the equivalence of five cigarettes smoked over 80 years. Common sense must conclude that epidemiological studies supposedly linking PM_{2.5} to premature death amount to nothing more than statistical noise!

Conclusion:

In short, Common Sense supported by the analyses of McClellan, Enstrom, Smith, and Cox provide more than enough reason to reconsider the necessity of the current extremely stringent PM_{2.5} standards. Given that the causal link between PM_{2.5} and mortality is not demonstrable or even logical, the EPA certainly should not tighten the primary annual or 24-hour NAAQS for PM_{2.5}; rather, EPA should consider making the standards less stringent. Had a less stringent standard been in effect a few years ago, I would not have had to close my 73-year family business. Please make sure that doesn't happen to others because of the pseudoscience underlying the current PM_{2.5} NAAQS.

Respectfully submitted,

Norman R. "Skip" Brown

² ibid