

Blue Ridge Environmental Defense League

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Reginald C. Jordan, Ph.D., CIH

North Carolina Division of Air Quality

1641 Mail Service Center Raleigh, NC 27699-1641

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Dear Dr. Jordan:

On behalf of the Blue Ridge Environmental Defense League (BREDL) and our members across North Carolina, I write to offer comments on the North Carolina Science Advisory Board's proposal to increase the acceptable ambient air level of arsenic. BREDL opposes this increase in acceptable ambient arsenic levels. Increasing human exposure to such a poison is not protective of public health or the environment.

North Carolina is famous for its problems with arsenic. The public is very familiar with its more well-known dangers and sensational uses. Blanche Taylor-Moore, convicted of killing her boyfriend by putting arsenic in his food and suspected of several other murders sits on Death Row. On November 2, 1984, North Carolina executed Velma Barfield for the arsenic poisoning

of her boyfriend Stuart Taylor, just one of many who succumbed to her home cooking. While we may joke about “Death Row Granny” as Barfield came to be known, arsenic exposure is no laughing matter. In the Science Advisory Board’s own words, this recommendation is a *nine-fold* increase over North Carolina’s current acceptable ambient levels. In laymen’s terms, by the time a child is 10, they could inhale the same amount of arsenic as a 90-year old.

The Board recommending any increase in toxic exposure is troubling, especially given how little is known about cumulative and chronic effects of heavy metals and chemicals on human health and development. Additionally, North Carolina is still a tobacco-friendly state and arsenic exposure and smoking is a “deadly combination.”¹ While smoking is a personal choice, exposure to arsenic emissions is not.

Arsenic is ubiquitous in the environment from natural and anthropogenic sources.² It is a known human carcinogen and has various effects on human health and development. Contrary to the findings in the draft risk assessment, using a cancer endpoint is not “acceptable” or protective of human health. “A comprehensive analysis of published data indicates that arsenic exposure induces cardiovascular diseases, developmental abnormalities, neurologic and neurobehavioral

¹ <http://www.uchospitals.edu/news/2011/20110506-arsenic.html>

² <http://www.atsdr.cdc.gov/toxprofiles/tp2-c6.pdf>

disorders, diabetes, hearing loss, hematologic disorders, and various types of cancer.”³ Arsenic is also an endocrine disruptor at very low levels.⁴

Arsenic is also bioaccumulative and could biomagnify under certain conditions. The risk assessment does not consider additional exposure pathways such as arsenic emissions deposited on land and water, potentially taken up by plants (aquatic and terrestrial), animals, birds, and fish as well as smaller organisms. In this manner, arsenic can enter the food chain. Biomethylation of arsenic in salt and freshwater fish, plants and organisms has been and is under study.⁵

Evidence continues to show serious health effects from this toxic metal that are not well understood. Dr. Joshua Hamilton, molecular toxicologist and the Senior Science and Chief Academic & Scientific Officer of the Marine Biological Laboratory at Woods Hole Massachusetts says, *“There is no other chemical with so many diverse health effects, and it has been difficult to envision a single mechanism by which arsenic could affect all these different diseases. One part of the answer may be that arsenic is a potent endocrine disruptor, but does so*

³ “Arsenic toxicity, mutagenesis, and carcinogenesis—a health risk assessment and management approach.” Paul B Tchounwou, Jose A Centeno and Anita K Patilla. *Molecular and Cellular Biochemistry* 2004

⁴ <http://www.ourstolenfuture.org/newscience/oncompounds/2001kaltreideretal.htm>

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<http://nepis.epa.gov/Exe/ZyNET.exe/P1002YTX.TXT?ZyActionD=ZyDocument&Client=EPA&Index=2000+Thru+2005&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&F>

in a way unlike any other chemical.”⁶ Dr. Hamilton is also associated with the Dartmouth Toxic Metals Superfund Research program.⁷

The North Carolina Division of Air Quality requesting that the Science Advisory Board conduct a re-evaluation of arsenic at this time is contradictory to the protection of public health and the environment, as well as fiscally foolhardy. With the North Carolina Department of Environment and Natural Resources under such severe budget constraints, why is the expense of the reexamination of a well-known toxin being incurred now? In addition, substantial evidence demonstrates that arsenic contributes to many serious diseases; the impact on health care costs to North Carolina citizens could be significant. It begs the question, what industry (or industries) are behind the impetus?

In conclusion, Blue Ridge Environmental Defense League urges decision makers to err on the side of prudence and caution; do not increase the acceptable ambient levels for arsenic.

Sincerely,

Therese Vick

⁶ <http://www.dartmouth.edu/~toxmetal/research-projects/1-arsenic.html>

⁷ <http://www.dartmouth.edu/~toxmetal/index.html>