



July 14, 2017

Via E-mail (wolfe@niehs.nih.gov)

Mary S. Wolfe, Ph.D.
Designated Federal Officer
NIEHS/NIH
P.O. Box 12233, MD K2-03
Research Triangle Park, NC 27709

Re: Peer Review of the Draft Report on Carcinogens Monograph on Haloacetic Acids Found as Water Disinfection By-Products (82 Fed. Reg. 28672, June 23, 2017)

Dear Dr. Wolfe:

The American Chemistry Council (ACC)¹ appreciates the opportunity to submit these comments on the National Institute of Environmental Health Sciences National Toxicology Program's (NTP) "Draft Report on Carcinogens [RoC] Monograph on Haloacetic Acids [HAAs] Found as Water Disinfection By-Products [DBPs]" (Draft Monograph).^{2,3} Federal chemical assessments should reflect the best available science, utilize a weight of evidence process to evaluate the information, and apply robust peer review practices to support decisions. ACC submitted comments dated April 4, 2016,⁴ in response to the March 2016 release of NTP's Draft Report on Carcinogens Concept [of 10 total] Di- and Tri- Haloacetic Acids Found as Water Disinfection By-Products,⁵ which are incorporated herein by reference. NTP subsequently expanded the RoC evaluation to include three monohaloacetic acids, as described in the NTP Report on Carcinogens Protocol: Haloacetic Acids Found as Water Disinfection By-Products.⁶

As discussed below, a RoC listing would not result in any additional public health benefit because HAAs are already effectively controlled by community drinking water systems in accordance with U.S. Environmental Protection Agency (EPA) regulations.

¹ ACC represents the leading companies engaged in the business of chemistry. ACC members apply the science of chemistry to make innovative products and services that make people's lives better, healthier and safer. ACC is committed to improved environmental, health and safety performance through Responsible Care®, common sense advocacy designed to address major public policy issues, and health and environmental research and product testing. The business of chemistry is a \$797 billion enterprise and a key element of the nation's economy. It is the nation's largest exporter, accounting for fourteen percent of all U.S. exports. Chemistry companies are among the largest investors in research and development.

² 82 Fed. Reg. 28672 (June 23, 2017).

³ <https://ntp.niehs.nih.gov/about/org/rocp/panels/meetings/2017/july/index.html>.

⁴ https://ntp.niehs.nih.gov/ntp/about_ntp/bsc/2016/april/publiccomm/nordgren20160404.pdf.

⁵ https://ntp.niehs.nih.gov/ntp/about_ntp/bsc/2016/april/haa_508.pdf.

⁶ https://ntp.niehs.nih.gov/ntp/roc/protocols/haloacetic_acids.pdf.



A RoC Listing Would Not Result in Additional Public Health Benefit Because HAAs Are Already Effectively Controlled by Community Drinking Water Systems in Accordance with EPA Regulations

As stated in the NTP Draft Monograph on p. ii, “Water disinfection is among the most important and beneficial public health advances of the 20th century and has substantially reduced United States incidence of cholera, typhoid, and amoebic dysentery caused by waterborne pathogens.” Millions of lives have been saved and illnesses avoided since the inception of continuous chlorine use in conjunction with filtration in water treatment over 100 years ago.⁷ There are 50,000 community water systems that supply treated drinking water to the same U.S. population (over 300 million Americans) year-round.⁸ Most of these systems rely on chlorine or a chlorine-based disinfection process to protect their consumers.

The provision of public drinking water is regulated under the Safe Drinking Water Act (SDWA) by EPA in conjunction with state and tribal governments. The 1996 SDWA Amendments required EPA to develop rules and regulations to balance acute risks between microbial pathogens and chronic risks associated with potential exposure to DBPs. Disinfection of public drinking water is required by EPA through comprehensive National Primary Drinking Water Regulations. A wide variety of organic and inorganic DBPs can be formed unintentionally at low levels when chlorine and other disinfectants react with naturally occurring organic matter in raw (natural) sources of drinking water. Although all chemical disinfectants form byproducts, the DBPs of chlorine disinfection are by far the most thoroughly studied.⁹ Among these, trihalomethanes (THMs) and HAAs are formed in the greatest quantities by weight, but other families of DBPs as well as “emerging DBPs” continue to be discovered at $\mu\text{g/L}$ (part per billion) and ng/L (part per trillion) levels as analytical methods improve.

Whether individual or mixtures of DBPs contribute to a low risk of long-term adverse effects—particularly cancer risk—is still being debated decades after the original THM regulation was implemented. A 2017 review notes that “The World Health Organisation has characterised each of these chlorination DBP ‘families’ in terms of their hazards and IARC [International Agency for Research on Cancer] have commented on the potential carcinogenicity of these molecules, with no single DBP being classified as a *confirmed* human carcinogen.”¹⁰

EPA has regulated DBPs in drinking water since the Total Trihalomethane Rule (TTHM) in 1979, through the Stage 1 Disinfectants and Disinfection Byproducts Rule (DBPR) of 1998, in

⁷ See review by McGuire, M.J. 2013. *The Chlorine Revolution: Water Disinfection and the Fight to Save Lives*. AWWA: Denver, Colorado.

⁸ President’s Council of Advisors on Science and Technology. 2016. REPORT TO THE PRESIDENT: Science and Technology to Ensure the Safety of the Nation’s Drinking Water, https://www.whitehouse.gov/sites/default/files/pcast_drinking_water_final_executive_summary_final.pdf.

⁹ See American Chemistry Council. 2016. *Drinking Water Chlorination: A Review of U.S. Disinfection Practices and Issues*, <https://chlorine.americanchemistry.com/Chlorine-Benefits/Safe-Water/Disinfection-Practices.pdf>.

¹⁰ Euro Chlor. 2017. *Human Health Aspects of Halogenated Organic By-Products from Use of Active Chlorine*, at p. 4, http://www.eurochlor.org/media/109463/science_dossier_hhdbp_2016_final.pdf.



which five HAAs (HAA5¹¹) were added as another group of indicators for other unmeasured DBPs, and most recently in the 2006 Stage 2 DBPR.¹² EPA's existing TTHM and HAA5 regulations¹³ continue to serve as water treatment control benchmarks, reduce overall DBP presence, and protect public health. Therefore, a RoC listing would not result in any additional public health benefit because HAAs are already effectively controlled by community drinking water systems in accordance with EPA regulations.

ACC appreciates the opportunity to submit these comments. If you have any questions, please feel free to contact me by phone at 202-249-6709 or via email at judith_nordgren@americanchemistry.com.

Sincerely,

Signature redacted

Judith Nordgren
Managing Director
Chlorine Chemistry Division

¹¹ Monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, bromoacetic acid, and dibromoacetic acid.

¹² Stage 1 and Stage 2 Disinfectants and Disinfection Byproducts Rules, <https://www.epa.gov/dwreginfo/stage-1-and-stage-2-disinfectants-and-disinfection-byproducts-rules#rule-summary>.

¹³ National Primary Drinking Water Regulations, <https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations#Byproducts>.

