State of New Jersey
Department of Environmental Protection
Division of Water Supply and Geoscience
New Jersey Drinking Water Quality Institute
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DRINKING WATER QUALITY INSTITUTE REQUEST FOR PUBLIC INPUT FOR PERFLUOROOCTANOIC ACID September 22, 2016

Re: Health Effects Subcommittee Report: Health-Based Maximum Contaminant Level Support Document: Perfluorooctanoic Acid (PFOA)

Environmental Working Group (EWG) is a non-profit public health and environmental research and advocacy organization based in Washington, DC. We focus our research on potential health risks from chemical contamination of water, food, consumer products, and the environment.

With this comment letter that we respectfully submit to the New Jersey Drinking Water Quality Institute we urge the adoption of a more health-protective maximum contaminant level for PFOA. In setting a health-based maximum contaminant level the DWQI identified, but did not utilize, numerous studies completed on animals and humans that show health effects occurring from PFOA exposure at even lower concentration than the studies used. Incorporation of these studies will result in a lowering of the proposed drinking water value for PFOA, potentially to zero. The State of New Jersey should utilize these scientific studies on PFOA health effects to establish a legal drinking water limit that water suppliers must meet.

EWG has been researching and publishing reports on the effects of PFOA exposure for over a decade. In the past two years EWG has published multiple reports and articles detailing the history of this pervasive contaminant and the emerging science on its impacts on mammary gland development and the effects on humans from environmentally relevant concentrations.[1] Additionally, EWG has published an online interactive map of the nationwide EPA water testing results for PFCs collected through the Unregulated Contaminant Monitoring Rule.[2]

EWG thanks the DWQI for addressing PFOA and providing important guidance and research that can be utilized by regulatory agencies across the country and the globe. In the face of the inadequate EPA health advisory published this year and the lack of a federal drinking water standard, the support documentation for the health-based MCL is helpful. The health effects report document provides a thorough and detailed summary on the state of the science regarding human health effects from PFOA exposure. In particular, Appendix 2 and the critique of the EPA Health Advisory value for PFOA highlight significant concerns with the EPA set level of 70ng PFOA per liter of water. The DWQI noted that EPA failed to consider women who may become pregnant, ignored human evidence of harm at current exposure levels and failed to incorporate studies showing health effects on the development of mammary glands. In establishing the health-based drinking water maximum value DWQI followed the lead of EPA and did not utilize the human epidemiological evidence or the mammary gland development effects as the point of departure for calculating a safe exposure level.

It is imperative that a health-based MCL be truly protective from the known health effects of PFOA exposure. The level of 14 ng PFOA/L water proposed by the DWQI is more protective than the EPA health advisory concentration but still falls short of fully protecting public health from the harmful effects of PFOA exposure. EWG recommends that the proposal be updated to incorporate the evidence of PFOA exposure-related effects on mammary gland development as well as the direct human evidence of harm including immunotoxicity effects. In our comments we are not providing additional references to studies detailing the impact of PFOA exposure but highlighting the statements made by the DQWI and the lack of incorporating these findings in the final MCL value.

With respect to PFOA impact on mammary gland development the DWQI went through the exercise of calculating an exposure level of 1 ng/L in water to represent the value at which adverse health effects would not be expected. EWG disagrees with the statement that the lack of precedent disqualifies the use of these studies in establishing a MCL for PFOA. As stated by the DWQI,

> *A Health Based MCL based on this RfD would be 1 ng/L or less. The Health Effects Subcommittee chose not to use this RfD as the basis for a recommended Health-based MCL, not because of uncertainty about the scientific validity of doing so, but rather because of lack of precedent for use of this endpoint as the primary basis for health-based criteria for environmental contaminants.*

Additionally, in summarizing both the mammary gland development research and human health of health effects from low level exposure the DWQI indicated that any exposure from drinking water may pose additional risk.

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> *Therefore, any additional exposure from drinking water may potentially pose some risk of health effects. For this reason, it cannot be concluded that lifetime exposure to a certain drinking water concentration, no matter how low, is protective of sensitive subpopulations with a margin of exposure.*

The German Environment Agency also announced a recent review of the evidence of harm from PFOA exposure and set a maximum blood plasma concentration of 2 ng PFOA/ml as the value at which adverse health effects are not expected.[3] This health-protective value was based on human epidemiological evidence of harm as well as animal studies indicating association of PFOA/PFOS exposure effects on fertility and pregnancy, weight of newborns at birth, lipid metabolism, immunity after vaccination and immunological development, hormonal development, thyroid metabolism and the onset of menopause. A health-protective value of 2 ng/ml is above the Centers for Disease Control and Prevention's median value of 2.1 ng/ml in the general population, indicating that any additional exposure from drinking water should be avoided.[4] Using the chart provided by the DWQI in Appendix 2, the DWQI recommended value of 14 ng/L would lead to exposures that are approximately 2 to 2.5 times higher than levels not expected to cause adverse health effects as summarized by the German Human Biomonitoring Commission.

We request the draft health-based MCL for PFOA be updated to reflect the human and animal studies showing health effects at lower concentrations. Additionally, the State of New Jersey must quickly move forward and pass a regulatory standard for water suppliers to ensure the health protection of residents consuming tap water.

Sincerely,

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[2] EWG, PFC Contamination, May 2015. Available at http://static.ewg.org/reports/2015/pfoa_drinking_water/interactive_map/index.html

[3] Bundesgesundheitsbl, HBM I values for Perfluorooctanoic acid (PFOA) und Perfluorooctanesulfonic acid (PFOS) in blood plasma. Bundesgesundheitsblatt - Gesundheitsforschung - Gesundheitsschutz, October 2016. Available at http://link.springer.com/article/10.1007/s00103-016-2437-1

[4] Centers for Disease Control and Prevention, Fourth National Report on Human Exposure to Environmental Chemicals, February 2015. Available at http://www.cdc.gov/biomonitoring/pdf/FourthReport_UpdatedTables_Feb2015.pdf