

August 25, 2023

Public comments on the California Office of Environmental Health Hazard Assessment's proposed Public Health Goals for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) in drinking water

Submitted via electronic docket at <https://oehha.ca.gov/comments>

MONARCH Action would like to submit the following comments to the California Office of Environmental Health Hazard Assessment (OEHHA) in support of the proposed public health goals (PHGs) for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) in drinking water. We appreciate this opportunity to provide input.

MONARCH (Mother's Oversight Network for Actionable Response to Contaminant Harm) is a California company organized to promote awareness of exposures to toxic chemicals.

In the Second Public Review Draft, published July 2023, OEHHA states the purpose of PHGs are to "estimate the levels of contaminants in drinking water that would pose no significant health risk to individuals consuming water on a daily basis over a lifetime". MONARCH supports OEHHA's proposed PHGs for PFOA (0.007 parts per trillion) and PFOS (1 ppt) which are rooted in the most recent and relevant studies.

MONARCH also supports OEHHA's proposed health protective drinking water concentrations for noncancer health effects for both PFOA (3 ppt, based on increased risk of liver damage in humans) and PFOS (2 ppt based on increased total cholesterol in humans). **However, MONARCH strongly encourages OEHHA to extend the PHG levels to all chemicals in this PFAS toxic class, not just PFOA/PFOS.**

Detailed comments are presented below for your consideration:

- 1. Levels of toxic PFOA/PFOS (as well as other chemicals belonging to this class) should be as low as detectibly possible to minimize lifetime exposure and developmental impacts to children.***

The public draft document showcases the ways in which PFOA and PFOS are known to bioaccumulate in human tissues. As it is well known, children are a toxicologically more sensitive endpoint than adults. They are smaller and live longer from any given time of exposure than the general adult population. This makes PFOA/PFOS exposure even more pernicious: First, it is more likely to cause harm when you compare the relative sizes of the affected organs to adult populations; and second, longitudinally speaking, more of the toxins will accumulate in their bodies over their lifetimes. Exposure to PFOS is linked to behavioral alterations, learning/memory impairment, and changes in chemical signaling, while PFOA exposure has been linked to ADHD¹. Therefore, MONARCH strongly advocates for stringent PHG levels of toxic PFAS chemicals to prevent further exposure for children.

¹ https://www.istage.ist.go.jp/article/its/41/Special/41_SP27/_pdf

2. PFOA and PFOS can cross the placenta and accumulate in the fetus, and can also transfer via breast milk². These chemicals are known liver and neurotoxins, and can therefore impact a child's overall development.

Setting strict PHGs relating to these toxic chemicals will reduce exposure for both lactating mothers and children. Fetal livers are a child's major hematopoietic organ during development; therefore, it is vital to prevent known liver toxins from bioaccumulating in developing tissues. The data provided in the second draft document states that "the half-life of PFOA is 2.3 years, whereas PFOS is 5.4 years..." and that "organisms with greater half-lives would bioaccumulate the compound to a greater extent". Since a fetus is an even more toxicologically sensitive endpoint than the children discussed above, preventing exposure to toxins in utero is of utmost importance.

Children receive their earliest immunity from breast milk. OEHHA studies highlighted in previous public workshops showcase the dangers to immune system functioning when impeded by PFOA/PFOS – "[s]uppression in one or more measure of anti-vaccine antibody response associated with prenatal, childhood, and adult exposures; "PFOA increased asthma, total IgE, rhinitis"; "ulcerative colitis an autoimmune disease in the colon/rectum"; "[d]ecreased levels of immune cells; increased histamine and TNF- α ". MONARCH stands behind OEHHA's commitment to protect vulnerable communities when setting their goals.

3. Preeclampsia is one of the leading causes of maternal death worldwide; it affects 1 in 25 pregnancies in the US. Black women are 60% more likely to suffer from preeclampsia and communities of color are more likely to be exposed to PFAS chemicals in their water³.

Finally, MONARCH must comment on OEHHA's statement re: "evidence of an association with risk of preeclampsia and pregnancy-related hypertension" regarding PFOA/PFOS. OEHHA identified six studies published since 2016 discussing the association between PFOA/PFOS exposure and preeclampsia (one of which also discusses PFNA). As an organization, we urge OEHHA to consider all PFAS class chemicals when establishing these public health goals.

PFOA/PFOS are known to cause "adverse developmental effects includ[ing] reduced pup body weight, developmental delays, and altered hormone and glucose regulation in rats." As noted above, these chemicals bioaccumulate in humans. The CDC notes that as many as "1 in 20 pregnant women has gestational diabetes. It is more common in Native American, Alaskan Native, Hispanic, Asian, and Black women⁴", suggesting that hormone and glucose regulation in communities of color would further be impacted without strict regulations of PFOA and PFOS. Income and health disparities already disproportionately affect low-income communities, communities of color, and disabled individuals. Exposure to PFOA, PFOS, and broader PFAS, are no exception, and therefore, OEHHA should take extra care to protect vulnerable individuals.

² <https://pubs.acs.org/doi/10.1021/acs.est.0c06978>

³ <https://www.hsph.harvard.edu/news/press-releases/communities-of-color-disproportionately-exposed-to-pfas-pollution-in-drinking-water/#:~:text=Boston%2C%20MA%20%E2%80%93%20People%20who%20live,study%20led%20by%20researchers%20from>

⁴ https://www.cdc.gov/pregnancy/documents/diabetes_and_pregnancy508.pdf

Conclusion

The available science supports OEHHA's PHG of 0.007 ppt for PFOA and 1 ppt for PFOS, as well as the non-cancer PHGs. We believe, by establishing these PHGs, OEHHA is taking a critical step toward protecting all Californians. Moreover, we urge OEHHA to consider setting public health goals for PFAS as a class, as this would be a more protective public health measure.

Sincerely,



[Sayward Halling \(Aug 29, 2023 15:58 PDT\)](#)

Sayward Halling
MONARCH Action







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Final Audit Report

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