



WISCONSIN'S
greenfire
VOICES FOR CONSERVATION

PFAS Environmental and Human Health Concerns

Jim Baumann

NR 809 Stakeholder Meeting

September 23, 2020

Artwork by Ann Christensen

Our mission

Wisconsin's Green Fire supports the conservation legacy of Wisconsin by promoting science-based management of our natural resources.

Artwork by Ann Christensen

Three Points

1. Dealing with real health concerns to real people
2. Would like to know why DHS recommended values are higher than other states
3. Need for representative data set of Wisconsin public water supplies

1. Real People, Real Health Concerns

- September 11th article in Star Tribune
- Study in Oakdale, Minnesota
- Babies 35% more likely to weigh less than 5.5 pounds
- Babies nearly 45% more likely to be born before 32 weeks
- Fertility rate 15% to 25% lower

Waterfield et al. *Environmental Health* (2020) 19:42
<https://doi.org/10.1186/s12940-020-00591-0>

Environmental Health

RESEARCH

Open Access

Reducing exposure to high levels of perfluorinated compounds in drinking water improves reproductive outcomes: evidence from an intervention in Minnesota

Gina Waterfield¹, Martha Rogers¹, Philippe Grandjean^{2,3}, Maximilian Auffhammer^{4,5} and David Sunding^{4*}



EAST METRO

PFAS-laced water caused infertility, premature births and low birthweight, study says

By Jennifer Bjorhus Star Tribune | SEPTEMBER 11, 2020 — 10:26AM



RICHARD SENNOTT • STAR TRIBUNE FILE

Chad Kolstad of the Minnesota Department of Health collected water samples at the Oakdale pumping station in 2007.

Oakdale residents who drank water polluted with toxic "forever chemicals" experienced elevated rates of infertility, premature births and low birthweight babies due to the contaminants, according to a multiyear review of health records.

List of Human Health Concerns

Concerns from Health
Canada, based on C8
Study in Mid-Ohio:

- Liver effects
- Immune suppression
- Lipidemia
- Thyroid suppression
- Kidney effects
- Carcinogenicity
- Developmental toxicity (e.g. lower birth weights and earlier births)
 - Oakdale and other studies across the world
- Reproductive toxicity
- Corresponding concerns with test animals

Serum half-lives in human body

- 5.4 years for PFOS;
 - 8.5 years for PFHS; and
 - 3.8 years for PFOA – retired industry workers; Olsen, et. al.
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- 4.3 years for PFOS
 - 4.2 years for PFOA – breast fed children; Mogensen

References on Serum Half-lives

- Mogensen, U.B., Grandjean, P., Nielsen, F., Weihe, P. and Budtz-Jorgensen, E. (2015a). Breastfeeding as an exposure pathways for perfluorinated alkylates. *Environ. Sci. Technol.*, 49: 10466-10473.
- Olsen, G.W., Burris, J.M., Ehresman, D.J., Froehlich, J.W., Seacat, A.M., Butenhoff, J.L. et al. (2007). Half-life of serum elimination of perfluorooctanesulfonate, perfluorohexanesulfonate, and perfluorooctanoate in retired fluorochemical production workers. *Environ. Health Perspect.*, 115(9): 1298-1305.

2. Concern with Proposed MCL being higher than other states

- DHS/DNR's proposed limit for PFOS and PFOA -- 20 ng/L combined – is higher than other states. For example:
 - New Hampshire: PFOS 15 ng/L, PFOA 12 ng/L
 - New Jersey: PFOS 13 ng/L, PFOA 14 ng/L
 - Michigan: PFOS 16 ng/L, PFOA 8 ng/L
 - New York: PFOS 10 ng/L, PFOA 10 ng/L
 - Washington: PFOs 15 ng/L, PFOA 10 ng/L
- Request at a future stakeholder meeting, DHS/DNR discuss differences between Wisconsin values and those of other states.

3. Need Representative Wisconsin Data Set

- As Wisconsin's Green Fire recommended for the surface water quality standards process, Wisconsin needs a representative data set for concentrations in public water supply facilities.
 - May be a relatively small subset of the 2000 Wisconsin facilities, but it should cover the range of situations
 - Will be very useful in the required economic impact analysis; reducing guesses and assumptions
 - Affordable: \$325 per sample (WDNR)

Thank you for this opportunity!



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