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June 2, 2021

The Environmental Working Group responds to the National Institutes of Health/National Institute of Environmental Health Sciences (NIH/NIEHS) [request for information](#) for the National Emerging Contaminant Research Initiative (NECRI)

Submitted via email to NIEHSCEC@nih.gov

The Environmental Working Group, a nonprofit research and policy organization with offices in San Francisco, Sacramento, Minneapolis and Washington, D.C., submits these comments to the National Institutes of Health/National Institute of Environmental Health Sciences for consideration in the development of a National Emerging Contaminant Research Initiative (NECRI).

EWG supports development of the NECRI and federal agency coordination of drinking water contaminants of emerging concern (DW CEC) research.

Early investigation and action are critical to preventing harm from contaminants of emerging concern. The ubiquitous contamination of drinking water and the environment at large demonstrates the current lack of and need for these efforts. Contamination of drinking water by the toxic chemicals known as per- and polyfluoroalkyl substances, or PFAS, was first detected near industrial dischargers in 1984, and evidence of toxicity and bioaccumulation was brought to the attention of the Environmental Protection Agency as early as 1998. Yet more than two decades later, there are still no nationally enforceable standards or monitoring requirements for PFAS in drinking water.

The Environmental Working Group maintains a public database of drinking water test results, available at www.ewg.org/tapwater/. This database was first published in 2005 and incorporates test results from nearly 50,000 local utilities in 50 states. The most recent update, in 2019, includes more than 32 million records on 278 different contaminants. This database helps make visible widespread exposure to mixtures of chemicals of concern in drinking water and the risks of these exposures based on the latest public health guidelines. Using the water sampling results in EWG's Tap Water Database, EWG researchers and others have published numerous peer-reviewed articles on contaminants of emerging concern.¹

¹ Environmental Working Group. Peer-reviewed studies published by EWG scientists. <https://www.ewg.org/peer-reviewed-studies-published-by-ewg-scientists>.



Section 1 – Improving and coordinating DW CEC efforts

1.1 Barriers

NIH/NIEHS's attention to eliminating barriers of DW CEC research is key to improving public health protection from contaminants of emerging concern.

Test data that are limited in both scope and frequency remain a barrier to assessing the risk of contaminants of emerging concern. It is necessary both to expand the scope of monitoring, including the number of chemicals tested, and to increase the frequency of monitoring. These are important as a way to better understand the impacts of seasonal variations in contaminant concentrations that develop as a result of fluctuations such as reduced surface flow rates during the summer and variable pesticide or chemical use patterns. With drought conditions and reduced surface water becoming more common – in short, because of a constantly evolving context – it is also more and more important to understand groundwater contaminants.

One significant impediment to research is the lack of a federal database that collates drinking water test results from utilities around the country and makes public this information in a timely manner. Although some data exists in Unregulated Contaminant Monitoring Rule occurrence reporting, it does not provide a comprehensive picture of contamination.

An additional barrier to studying drinking water exposure is that more than 42 million people are estimated to get their drinking water from private wells² and, in some states, up to 50% of the population have private drinking water wells. Exposure to many contaminants, emerging or known, is not well characterized for this population on a national level.

1.2 Outreach

EWG supports NIH/NIEHS's goal of identifying the best ways to communicate findings. The NECRI should seek to make data and research easily accessible for the affected communities and identify disproportionately affected populations.

The federal government should collect, publish and maintain a database of drinking water data to serve as a long-term clearinghouse for national data on contaminants. EWG is committed to transparency and the availability of data to the general public, as demonstrated by the EWG Tap Water Database.³ The publication of this database is a stopgap for what should be a federal resource.

² United States Geological Survey. 2015. Estimated use of water in the United States in 2015. <https://pubs.er.usgs.gov/publication/cir1441>

³ Environmental Working Group. 2019. EWG Tap Water Database. <https://www.ewg.org/tapwater/>



1.3 Significant concerns and recommendations

A significant bottleneck in protecting public health from drinking water contaminants lies in the translation of the latest research into federally enforceable drinking water standards. The process of collecting data on single contaminants and establishing federal standards is slow and outdated. There have been no maximum contaminants limits established for a new contaminant in decades. EWG would encourage the NECRI to keep in mind this goal when planning and implementing studies of drinking water contaminants.

Section 2 – DW CEC research areas

2.1 Exposure

EWG supports the NECRI aim of “source to tap” monitoring for exposure-related research. It is important to acknowledge that some contaminant concentrations vary vastly between the water treatment plant and the tap. Disinfection byproducts and lead are just two examples.

Other contaminants, like the pesticide atrazine, vary seasonally – a pattern that is typically obscured when monitoring is completed at only a few points during the year.⁴ EWG urges the NECRI to advance research on contaminants of emerging concern, taking into account seasonality of contaminant concentrations, especially when narrow windows of exposure can affect vulnerable populations in the short term.

As we have already stated, EWG strongly urges the NECRI to consider the need for widespread monitoring of contaminants in private wells. Exposures to many contaminants, emerging or known, are not well characterized for these populations.

Employing non-targeting analysis methods for drinking water monitoring will also be necessary for future monitoring and identification of unknown sources of exposure, particularly near discharges upstream of drinking water sources.

2.2 Risk characterization to inform risk mitigation

Last year, EWG published a side-by-side analysis of two risk assessment methods, one based on the measurement of risk from animal toxicology studies and one based on risk measured from

⁴ Environmental Working Group. 2018. Hormone-disrupting weedkiller taints drinking water for millions of Americans. <https://www.ewg.org/research/hormone-disrupting-weed-killer-taints-drinking-water-millions-americans>



human epidemiology studies.⁵ It offers a compelling argument for assessing cumulative risk of both regulated and unregulated contaminants and highlights the value of using human data in health risk assessments.

EWG urges the NECRI to consider both human and animal studies, as well as acknowledging the impact of cumulative risk and contaminant mixtures⁶ in human health risk assessment.

2.3 Human health and environmental effects

To foster greater understanding of the vulnerability of children, pregnant women, immunocompromised people and older adult populations, and to better protect American public health in general, research questions should focus on determining risk at critical life stages.

We would like to point to the importance of New Approach Methodologies (NAMs), such as ToxCast screening, as tools for determining the toxicity of new contaminants and regulatory decision-making. New tools must be developed to rapidly fill data gaps and increase the capacity to efficiently test and identify potential threats to human health.

2.4 Risk communication

There is a lack of public understanding about the difference between legal limits for contaminants in the environment and “safe” levels of exposure or public health goals and guidelines. This area of risk communication urgently needs to be addressed.

More effort is needed to understand and communicate the compounded risks presented by mixtures of contaminants, whether from a single route of exposure or from all sources of exposure combined.

EWG’s Tap Water Database community water system pages are examples of both of these communication efforts.

In summary, EWG supports NIH/NIEHS’s efforts to protect and improve U.S. drinking water quality and advance the study of drinking water contaminants of emerging concern.

⁵ Evans, S., Campbell, C., & Naidenko, O. V. 2020. Analysis of cumulative cancer risk associated with disinfection byproducts in U.S. drinking water. <https://www.mdpi.com/1660-4601/17/6/2149/htm>

⁶ Evans, S., Campbell, C., & Naidenko, O. V. 2019. Cumulative risk analysis of carcinogenic contaminants in United States drinking water. [https://www.cell.com/heliyon/fulltext/S2405-8440\(19\)35974-2](https://www.cell.com/heliyon/fulltext/S2405-8440(19)35974-2)



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