



FSTRAC Newsletter

FEDERAL-STATE TOXICOLOGY RISK ANALYSIS COMMITTEE

What Is FSTRAC?

FSTRAC's mission is to strengthen relationships and cooperation among EPA, states and tribes through the exchange of technical information primarily regarding water-related human health and risk assessment and also share information on ecological effects related to water quality criteria. FSTRAC is composed of current representatives from governmental agencies (state, tribal, federal health and environmental agencies, and other regulatory authorities) and representatives from the Association of State Drinking Water Administrators (ASDWA) and the Association of Clean Water Administrators (ACWA). The goal of FSTRAC is to share information that supports the development of well-rounded, integrated approaches to effects assessment, risk assessment, risk management, risk communication, and standard-setting for drinking water, groundwater, and surface water contaminants. Specific objectives of FSTRAC include:

- To foster cooperation, consistency, and an understanding of goals and problems in human health and ecological risk assessment for contaminants in water.
- To allow the exchange of technical information, including toxicity/exposure data and analysis, and methodologies and assumptions related to the development and implementation of regulations, criteria, advisories, and other toxicity values under the Safe Drinking Water Act and the Clean Water Act, and other state and tribal rules and policies as applicable.
- To allow the exchange of information on research priorities and results.
- To share science policy concerns regarding water-related human health and ecological risk assessment.

Recent Webinars

FSTRAC holds several webinars each year to share information through presentations and discussions regarding human health risk analysis and water quality issues.

October 2018 FSTRAC Webinar

EPA held a FSTRAC Webinar in October 2018 during which the following topics were discussed:

HECD Accomplishments and Workplan for FY 2019

(presented by Ms. Elizabeth (Betsy) Behl, HECD/OST/OW/EPA) Ms. Behl presented an overview of EPA OST/HECD's accomplishments during 2018 in the areas of aquatic life, biosolids, nutrients, biocriteria, and human health. She also described EPA OST/HECD's 2019 priorities, including publishing final updated aluminum aquatic life criteria, developing a draft nationally applicable model linking nutrient

The purpose of this newsletter is to keep Federal-State Toxicology and Risk Analysis Committee (FSTRAC) members up-to-date on current developments in toxicology, risk analysis, and water quality criteria and standards. This newsletter also provides information on recent FSTRAC webinars and upcoming events. Please share this newsletter with anyone you think might be interested in these topics. If you are interested in joining FSTRAC, please contact the FSTRAC Chair, Dr. Shamima Akhter (Akhter.Shamima@epa.gov).

concentrations in lakes to specific adverse effects for 3 designated uses, supporting Regions and States with biocriteria development, and publishing 2013 and 2015 Biosolids Biennial Reviews.

EPA Biosolids Program (presented by Ms. Elizabeth Resek, HECD/OST/OW/EPA) Ms. Resek presented an update on EPA's Biosolids Program, including information on Section 405(d) of the CWA, the 2016-2017 Biennial Review, the biosolids screening tool, and 10 pollutant risk assessments. Ms. Resek noted that EPA is initiating a problem formulation for PFAS in biosolids, including engagement to gain input from states and tribes, risk managers, scientists, and members of the biosolids community regarding foreseeable science and implementation issues. She mentioned that EPA had not tested for per- and polyfluoroalkyl substances (PFAS) as part of its National Sewage Sludge Surveys (NSSS); however, PFAS were detected in the digested samples from EPA's 2001 and 2006 NSSS in Arizona State University's National Sewage Sludge Repository.

Overview of PFAS Groundwater Contamination and Derivation of Health-based Guidance in Minnesota (presented by Dr. Helen Goeden, Minnesota Department of Health [MDH]) Dr. Goeden presented an overview of PFAS contamination in Minnesota, including initial testing of public and private wells for contamination, as well as the addition of analytical methods for perfluorobutyrate (PFBA), perfluoropentanoic acid (PFPeA), perfluorohexanoic acid (PFHxA), perfluorobutane sulfonate (PFBS), and perfluorohexane sulfonate (PFHxS) that resulted in uncovering a larger area of contamination than had been found originally. She also presented information on MDH's 2017 PFAS Water Guidance values, including direct and indirect exposure concerns, daily serum concentration calculations, placental and breastmilk transfer values, and relative source contribution factors. Refer to the open source publication (<https://www.nature.com/articles/s41370-018-0110-5>) for additional information about the model, as well as supplemental information.

Per- and Polyfluoroalkyl Substances in Source and Treated Drinking Waters of the United States (presented by Dr. Susan Glassmeyer, NERL/ORD/EPA) Dr. Glassmeyer presented from a collaborative study with the U.S. Geological Survey (USGS) evaluating contaminants of emerging

concern (CECs) in source and treated drinking water. As part of this work, Dr. Glassmeyer presented information on PFAS occurrence patterns in two river systems, a source investigation via *de facto* reuse modeling, removal of PFAS during drinking water treatment (including the role of granular activated carbon), and examination of data in relation to the Third Unregulated Contaminant Monitoring Rule (UCMR 3). For additional information, please refer to the open access article on which this presentation was based (<https://www.sciencedirect.com/science/article/pii/S004896971834141X>).

April 2019 FSTRAC Webinar

EPA held a FSTRAC Webinar in April 2019 during which the following topics were discussed:

HECD Update (presented by Ms. Colleen Flaherty, HECD/OST/OW/EPA) Ms. Flaherty presented an update on activities in the EPA Office of Water's Health and Ecological Criteria Division (HECD). Her talk focused on work underway related to emerging contaminants (including per- and polyfluoroalkyl substances or PFAS), Safe Drinking Water Act regulatory processes technical support, chemical prioritization for criteria development, method updates and tool development in the areas of aquatic life, biosolids, and numeric nutrient criteria, and stakeholder engagement.

Final Updated National 304(a) Aluminum Aquatic Life Criteria (presented by Ms. Diana Eignor, HECD/OST/OW/EPA) Ms. Eignor presented background information on sources of aluminum and the criteria development process. She described the framework for developing the updated national 304(a) aluminum aquatic life criteria that consisted of (I) screening toxicological studies for high quality data, (II) evaluating water quality conditions to determine applicability, (III) normalizing toxicity data in species sensitivity distribution to a set of water quality conditions, and (IV) constructing a sensitivity distribution to determine criteria at set conditions. Ms. Eignor noted that the relative ranking of aquatic life genera in the sensitivity distribution to which the toxicity data are normalized will change based on water chemistry conditions (i.e., pH, hardness, dissolved organic carbon). Thus, EPA developed an aluminum criteria calculator to make calculating aluminum criteria easier.

NJDEP Maximum Contaminant Levels (MCLs) for Perfluorooctanoic Acid (PFOA), Perfluorooctanesulfonic Acid (PFOS), & Perfluorononanoic Acid (PFNA): Regulatory and Scientific Basis (presented by Dr. Gloria Post, New Jersey Department of Environmental Protection [NJDEP]) Dr. Post presented an overview of the current status of NJDEP PFAS standards and regulations. She described the process for developing the New Jersey Drinking Water Quality Institute's MCL recommendations, as well as public participation in NJDEP's MCL development process. Dr. Post described the literature review strategy and the studies and endpoints that were used as a basis for the NJ MCL for PFNA, which has been adopted, and the proposed NJ MCLs for PFOA and PFOS.

Web-ICE Ecotoxicity Estimation Tool (presented by Dr. Sandy Raimondo, ORD/EPA) Dr. Raimondo presented an overview of EPA's Interspecies Correlation Estimation (ICE) tool to estimate acute toxicity to a species, genus, or family from the known toxicity of a surrogate species. She provided background information on ICE models, noting that they start with a large database of existing, acute toxicity; a suite of ICE models are developed, dependent on the toxicity database; model validation is used to develop user guidance; and models and their application are extensively peer-reviewed. Dr. Raimondo described several

current applications of Web-ICE. She also provided a live demonstration of EPA's Web-ICE tool.

Risk Assessment Basis of the NHDES Proposed MCLs for Four PFAS: PFOA, PFOS, PFNA, and PFHxS (presented by Dr. Jonathan Ali, New Hampshire Department of Environmental Services [NHDES]) Dr. Ali provided background information on the development of the NHDES proposed MCLs for PFOA, PFOS, PFNA, and PFHxS. He noted that New Hampshire Senate Bill 309 granted NHDES the authority to set drinking water MCLs for these four PFAS. Dr. Ali described how reference doses were selected and how relative source contribution values were estimated. He presented the proposed MCLs, a timeline of New Hampshire's MCL process, and public comments and information gaps.

Montana's Proposed PFOA/PFOS Ground Water Standards (presented by Dr. Terri Mavencamp, Montana Department of Environmental Quality [MTDEQ]) Dr. Mavencamp provided an overview of Montana's proposed PFOA and PFOS ground water standards. She described PFAS monitoring performed for EPA's UCMR 3 and military sites in Montana. Dr. Mavencamp mentioned that ground water standards for PFOA and PFOS are part of the DEQ-7 proposed ground water rulemaking package. She noted that these ground water standards would be used as remediation standards.

Information from States Developing Guidance for Specific Chemicals

Criteria Values

Michigan Department of Environment, Great Lakes, and Energy

In June 2019 the Michigan PFAS Action Response Team (MPART) Science Advisory Work Group (SAWG) provided health-based values for seven per- and polyfluoroalkyl substances (PFAS) to the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Drinking Water and Environmental Health Division (DWEHD), to be used as the starting point for developing drinking water maximum contaminant levels (MCLs) for PFAS in Michigan.

Utilizing input provided by key stakeholders, draft MCLs will be provided by EGLE in October 2019 and the formal rule promulgation process will begin. An

official public comment period will follow, including public hearings hosted by EGLE, and the final rule is expected to be adopted by April 2020.

Minnesota Department of Health

The Minnesota Department of Health (MDH) has completed water guidance for strontium, fluorene, anthracene, quinoline, imidacloprid, and PFHxS in recent months. Chemicals currently under full toxicology review by MDH include: 1H-benzotriazole, tolyltriazole, 5-methyl-1H-benzotriazole, benzophenone, biphenyl, total petroleum hydrocarbons (TPH), and 1,4-dichlorobenzene. MDH's program to re-evaluate existing water guidance values has recently

completed reviews of PFOS, ethylbenzene, 3 trimethylbenzenes, xylenes, and 1,1-dichloroethylene. More detailed information on MDH water guidance values can be found on MDH's Human Health-Based Water

Guidance Table website at <https://www.health.state.mn.us/communities/environment/risk/guidance/gw/table.html>.

Risk Assessment

Drinking Water

California Environmental Protection Agency

The State Water Resources Control Board (SWRCB) of the California Environmental Protection Agency has issued updated Notification Levels (NLs) and guidelines for detecting and reporting the presence of PFOA and PFOS in drinking water. NLs are precautionary, nonregulatory health-based levels for drinking water contaminants that warrant notification and further monitoring and assessment. The updated NLs are 5.1 parts per trillion (ppt) for PFOA and 6.5 ppt for PFOS, based on the Office of Environmental Health Hazard Assessment's (OEHHA) recommendation that the NLs be set at the lowest levels at which they can be reliably detected in drinking water using currently available and appropriate technologies. OEHHA's recommendation stems from the development of reference levels of 0.1 ppt for PFOA and 0.4 ppt for PFOS based on cancer. Additionally, SWRCB has initiated the process of establishing regulatory standards (Maximum Contaminant Levels or MCLs) for PFOA and PFOS by requesting that OEHHA develop Public Health Goals for these chemicals.

Clean Water

EPA Recommended Recreational Ambient Water Quality Criteria or Swimming Advisories for two Cyanotoxins, Microcystins and Cylindrospermopsin

EPA issued final *Recommended Recreational Ambient Water Quality Criteria or Swimming Advisories for two Cyanotoxins, Microcystins and Cylindrospermopsin*. The Agency identified recommended concentrations of these cyanotoxins at or below which human

health is protected while swimming or participating in other recreational activities in and on the water. States, territories, and authorized tribes can consider adopting these recommended criteria into their water quality standards and using them for Clean Water Act purposes. Alternatively, they can use these same values as the basis of swimming advisories for public notification purposes at recreational waters. The recommended criteria or swimming advisories are based on peer-reviewed, published science and methods.

EPA also updated and reorganized online information about [cyanobacterial harmful algal blooms \(CyanoHABs\) in water bodies](#), creating a new website dedicated to scientific information, EPA tools, and collaborative work on cyanoHABs in U.S. waters.

On the updated website, the EPA has also published new infographics that state and local governments can use to communicate basic information about HABs to the public. The infographics highlight how a HAB may affect both people and animals, and provide information concerning how to identify and respond to a potential bloom. Downloadable and printable versions of the infographics are available at <https://www.epa.gov/cyanohabs/infographics-help-educate-public-habs-basics>; one as a more detailed poster for display and another as an abbreviated handout. State, tribal and local governments may also customize the infographics by adding their logo and website address or telephone number.

Here is the link to the webpage where the cyanotoxin AWQC lives:

<https://www.epa.gov/wqc/recommended-human-health-recreational-ambient-water-quality-criteria-or-swimming-advisories>

EPA Published a Federal Register Notice Requesting Public Comment to Inform the Development of an Agency Policy for Determining if a Harmful Algal Bloom (HAB) or Hypoxia Event in Freshwater Is an “Event of National Significance”

On Monday, September 16th, the EPA published a Federal Register notice requesting public comment to inform the development of an Agency policy for determining if a harmful algal bloom (HAB) or hypoxia event in freshwater is an “event of national significance.” Recent amendments to the Harmful Algal Bloom and Hypoxia Research and Control Act (HABHRCA) provide the EPA with the statutory authority to make such a determination in the case of a freshwater HAB or hypoxia event. Under HABHRCA, the EPA is responsible for addressing HAB and hypoxia in fresh water and NOAA is responsible for the same in marine and coastal waters. A federal determination that such an occurrence is an event of national significance enables mobilization of federal resources to assess and mitigate its detrimental effects, subject to the availability of appropriations. Using public input, and in coordination with NOAA, the EPA will develop a policy for making a determination of a freshwater HAB or hypoxia event of national significance and subsequently seek public comment on that draft policy.

Members of the public may submit comments on the EPA’s notice for 45 days (until October 31st, 2019). Access the notice and public docket via EPA’s website at <https://www.federalregister.gov/documents/2019/09/16/2019-19985/notice-of-intent-to-develop-a-policy-on-the-determination-of-a-harmful-algal-bloom-hab-and-hypoxia>

Drinking Water Contaminant Occurrence Information

Michigan Department of Environment, Great Lakes, and Energy

In August 2019 the Michigan Department of Environment, Great Lakes, and Energy (EGLE), in

partnership with the state’s contractor AECOM, published a summary of findings for its statewide survey of PFAS in public drinking water supplies. This statewide survey sampled over 1,700 public water supplies in Michigan, representing drinking water resources for approximately 75% of the state’s population. Nearly 90% of those supplies tested returned non-detect results for all tested PFAS compounds. An additional 7% returned combined detections of less-than 10 parts per trillion for all tested PFAS compounds, and of the remaining 3% only two supplies returned detections exceeding the U.S. Environmental Protection Agency Lifetime Health Advisory level.

Through effective prioritization of supplies based on several sensitivity and risk factors, and the use of multiple sampling teams working in tandem, EGLE was able to promptly identify those supplies with PFAS contamination. Based on the 2018 statewide survey findings, an expanded PFAS testing program for drinking water supplies in Michigan is ongoing for 2019.

Minnesota Department of Health

The MDH is partnering with the USGS on a project to test for unregulated contaminants in drinking water sources across the state. MDH and USGS are conducting this study to better understand where unregulated contaminants occur and at what levels. The results will guide future efforts in monitoring, source water protection, and development of health-based guidance values.

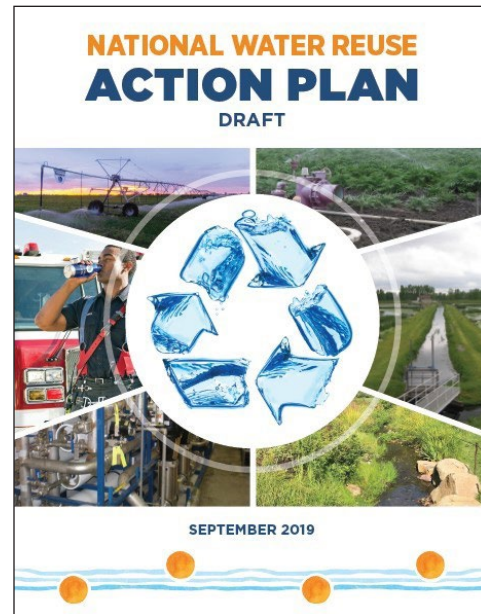
Project sampling began in summer 2019 and the final report will be completed in 2021. Funding for this project is provided by the Environment and Natural Resources Trust Fund (ENRTF) as recommended by the Legislative-Citizen Commission on Minnesota Resources (LCCMR). Additional information is available on the project website: <https://www.health.state.mn.us/communities/environment/water/unregcontam.html>

Publications

EPA Draft National Water Reuse Action Plan

At the 34th Annual WaterReuse Symposium in San Diego, California, the U.S. Environmental Protection Agency (EPA) announced the release of a draft [National Water Reuse Action Plan](#) that identifies priority actions and the leadership and collaboration that is needed between governmental and nongovernmental organizations to implement these actions. Water reuse represents a major opportunity to support our nation's communities and economy by bolstering safe and reliable water supplies for human consumption, agriculture, business, industry, recreation and healthy ecosystems.

The draft National Water Reuse Action Plan is the first initiative of this magnitude that is coordinated across the water sector. It was built upon extensive outreach, research and prior engagement with the water sector. The inclusive approach used to develop the draft plan recognizes that meaningful advancement of water reuse is best accomplished by working cooperatively with all water sector stakeholders. The draft plan incorporates federal, state, tribal and local water perspectives and highlights key actions that support



consideration and implementation of water reuse. EPA's goal is to issue a final plan that will include clear commitments and milestones for actions that will further water reuse to bolster the sustainability, security and resilience of the nation's water resources.

Goeden, H. M., et al. (2019). A Transgenerational Toxicokinetic Model and Its Use in Derivation of Minnesota PFOA Water Guidance. *Journal of Exposure Science & Environmental Epidemiology* 29(2)183; doi:10.3390/ijerph15030512.

Suchomel, A.; et al. (2018). A Method for Developing Rapid Screening Values for Active Pharmaceutical Ingredients (APIs) in Water and Results of Initial Application for 119 APIs. *Int. J. Environ. Res. Public Health*, 15(7)1308; doi:10.3390/ijerph15071308.

Upcoming Events and Conferences

Upcoming FSTRAC Webinar

The next FSTRAC Webinar is tentatively scheduled for December 2019. Additional details, including the date of the next FSTRAC Webinar, will be provided to FSTRAC members in the coming weeks.

SETAC North America Annual Meeting

SETAC will be holding its 40th annual North America meeting on November 3–7, 2019, in the Metro Toronto

Convention Centre, in Toronto, Ontario. Additional information is provided on the SETAC website: <https://toronto.setac.org/>

SRA 2019 Annual Meeting – Society for Risk Analysis

SRA will be holding its annual meeting on December 8–12, 2019, in Arlington, Virginia.

Drinking Water Relevant Symposia

Symposium: Derivation of Human Health Based Water Guidance for Noncarcinogens: Is it time to Change the Standard Default Approach?

The current standard approach for deriving human health-based drinking water guidance for noncarcinogens has not changed in over three decades and were influenced by data availability and policy decisions at the time of their inception. The values for these factors should be scientifically based and should change as scientific understanding and more data become available. More data is now available on age specific intake rates and multiple routes and sources of exposure to contaminants. The symposium will highlight these important issues, advocating the need to derive scientifically based drinking water guidance. Individual abstracts can be viewed at:

<http://scienceserv.com/sra/2019AM/program/singleession.php?sessid=T3-I>

Symposium: Derivation of Human Health Based Water Guidance: Challenges of Assessing Emerging Contaminants and Mixtures

Drinking water guidelines are essential for public health protection. With the advancement of analytical methods more chemicals are being detected in drinking water sources and at lower concentrations than ever before. Few of these contaminants have health-based guidance, which leads to concerns regarding potential health risks. This session will highlight examples that demonstrate efforts to provide risk

context for emerging contaminants as well as chemicals with little or no toxicological data and mixtures.

Individual abstracts can be viewed at:

<http://scienceserv.com/sra/2019AM/program/singleession.php?sessid=T4-I>

Additional information about the SRA Annual Meeting is available on the SRA website:

<https://www.sra.org/events/2019-sra-annual-meeting>

SOT Annual Meeting

SOT will be holding its 59th annual meeting on March 15–19, 2020, in Anaheim, California.

Additional information about the March 2020 meeting is provided on the SOT website:

<https://www.toxicology.org/events/am/AM2020/index.asp>

ASM Microbe 2020 – American Society for Microbiology

ASM will be holding its annual meeting on June 18–22, 2020, at McCormick Place in Chicago, Illinois. Additional information is available on the ASM website: <https://www.asm.org/Events>

EPA IRIS Upcoming Events

EPA IRIS holds public meetings and workshops on issues in risk assessment. Additional information is provided on the EPA IRIS public meetings and workshop website:

<https://cfpub.epa.gov/ncea/iris2/events.cfm>