



FSTRAC Newsletter

FEDERAL-STATE TOXICOLOGY RISK ANALYSIS COMMITTEE

What Is FSTRAC?

In 1985, Drs. Joseph Cotruvo, Edward Ohanian, and Penny Fenner-Crisp of the U.S. Environmental Protection Agency's (EPA's) Office of Science and Technology, Health and Ecological Criteria Division, started FSTRAC to build a better relationship with states and tribes to exchange research priorities and results, policy concerns regarding water-related human health risk assessment, and technical information. FSTRAC is made up of representatives from state and tribal health and environmental agencies and EPA Headquarters and Regional personnel. As described on the EPA FSTRAC Web page (<http://www2.epa.gov/water-research/basic-information-fstrac>), FSTRAC is an integral part of EPA's communication strategy with states and tribes. FSTRAC fosters cooperation, consistency, and an understanding of EPA's and different states' and tribe's goals and problems in human health risk assessment. It allows states, tribes and the federal government to work together on issues related to the development and implementation of regulations and criteria under the Safe Drinking Water Act and Clean Water Act.

Recent Webinars

FSTRAC holds several webinars each year to share information through presentations and discussions regarding human health risk analysis and the water medium of exposure.

September 2015 FSTRAC Webinar

EPA held a FSTRAC Webinar in September 2015 during which the following topics were discussed:

Update on Human Health Criteria and Drinking Water Support (presented by Ms. Elizabeth [Betsy] Behl, OW/EPA): Ms. Behl provided an overview of EPA Office of Science and Technology, Health and Ecological Criteria Division's recent accomplishments and a preview of the 2016 work plan. Accomplishments included publication of drinking water health advisories for the cyanotoxins microcystins and cylindrospermopsin, finalizing updated human health ambient water quality criteria, publishing a literature

review on coliphage as a viral indicator, and publishing technical support materials to support 2012 recreational water quality criteria. The 2016 work plan was comprised of numerous projects, including developing human health benchmarks for pesticides (HHBPs), publication of health advisories for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), and development of recreational water quality criteria for cyanotoxins.

PFOA-PFOS OST Draft Health Effects Documents and Peer Review (presented by Dr. Joyce Donohue, OW/EPA):

Dr. Donohue provided background information on development of drinking water health advisories for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). Information on the draft health effects support documents released for peer review in 2014 was presented. Topics included characteristics, uses, and biochemical properties; information on

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).

toxicokinetics; available epidemiology and animal studies; draft reference dose (RfD) values; and cancer findings. Dr. Donohue also presented the major peer review comments.

Pharmaceutical Water Screening Values (presented by Ms. Ashley Suchomel, Minnesota Department of Health):

Ms. Suchomel presented information on a rapid assessment method required by the Minnesota Department of Health that could be performed efficiently and with limited information sources to assess and prioritize a large number of pharmaceuticals, including commonly prescribed pharmaceuticals not currently included in water monitoring programs. She provided information on the pharmaceuticals assessed, the methods for assessing pharmaceuticals, results of the assessments, and how to use the derived water screening values.

EPA Drinking Water Health Advisories for Cyanotoxins (presented by Dr. Lesley D'Anglada, OW/EPA): Dr. D'Anglada provided a detailed summary of EPA Health Advisories for microcystins and cylindrospermopsin. These health advisories were published in June, 2015. Along with the health advisories, EPA also published a cyanotoxin management document as a companion to the HAs. The document is designed to provide information and a framework that Public Water Systems and others can consider to inform their decisions on managing the risks from cyanotoxins to drinking water. Additional information is provided on EPA's CyanoHABs website (<http://www.epa.gov/nutrient-policy-data/cyanohabs>).

A Cross-Sectional Study on Low-Level Exposure to Manganese from Drinking Water and Children's Neurobehavioral Function (presented by Dr. Maryse Bouchard, Université de Montréal): Dr. Bouchard provided background information on manganese exposure and neurotoxicity in occupational settings, mechanisms of toxicity, and manganese in water and food, as well as information on the vulnerability of children to manganese and the neurotoxic effects of manganese in children. She presented detailed information on the New Brunswick, Canada, study on low-level exposure to manganese in drinking water in New Brunswick and children's neurobehavioral function, including preliminary results.

December 2015 FSTRAC Webinar

EPA held a FSTRAC Webinar in December 2015 during which the following topics were discussed:

U.S. Environmental Protection Agency Updated Human Health Ambient Water Quality Criteria (presented by Dr. Jamie Strong, OW/EPA): Dr. Strong presented an overview of EPA's updated human health ambient water quality criteria. In June 2015, EPA updated its national recommended water quality criteria for human health for 94 chemical pollutants to reflect the latest scientific information and EPA policies, including updated fish consumption rate, body weight, drinking water intake, health toxicity values, bioaccumulation factors, and relative source contributions. EPA water quality criteria provide recommendations to states and tribes authorized to establish water quality standards under the Clean Water Act.

EPA Update on HAB Recreational AWQC (presented by Mr. John Ravenscroft, OW/EPA): Mr. Ravenscroft described the development of recreational ambient water quality criteria for microcystins and cylindrospermopsin using the same peer-reviewed science that informed the drinking water health advisories. EPA is currently reviewing the state of the science describing the human health effects from exposures to cyanobacteria and the two toxins. The recreational criteria will focus on a recreational scenario where immersion and incidental ingestion of ambient water are likely. EPA is currently planning to solicit public comment on the draft recreational criteria by fall 2016.

Radionuclide Pilot Study Results: Polonium-210 Occurrence in Minnesota (presented by Dr. James Jacobus, Minnesota Department of Health): Dr. Jacobus presented information on the polonium-210 (Po-210) pilot study design, summary of results, major findings, future steps, and health risk assessment. He noted that the pilot study focuses on Po-210 because it is a potent alpha emitter and known human carcinogen, and that concentrations of radium-226 (the "parent" of Po-210) is elevated in Minnesota. One of the major study findings was that Po-210 was found at low levels in many aquifers sampled.

Environmental Surveillance and Monitoring – The Next Frontier for Pathway-Based High Throughput Technology (presented by Dr. Daniel L. Villeneuve): Dr. Villeneuve noted that sources of pathway-based bioeffects data are growing rapidly and that Adverse Outcome Pathways (AOPs) offer a formal framework for linking pathway-based bioeffects to hazards of concern for ecological and/or human health risk assessment. He noted that AOPs, along with complementary exposure tools being developed by EPA's Chemical Safety for Sustainability (CSS) research program, offer potential new data streams to support water quality guideline and criteria development.

Incorporation of DU-MIS (“ISM”) Investigation Methods in Environmental Risk Assessments (presented by Dr. Roger Brewer, Hawai'i Department of Health): Dr. Brewer presented information on the limitations in the use of discrete soil sample data, including determining the extent of contamination, making comparisons to screening levels, and estimating exposure area mean. He also provided information on the basics of “Decision Unit (DU)” and “Multi Increment Sample (MIS)” (also known as “Incremental Sampling Methodology or “ISM”).

Information from States Developing Guidance for Specific Chemicals

Criteria Values

Minnesota Department of Health

The Minnesota Department of Health (MDH) is currently developing human health-based values for several chemicals of potential interest to the group

(anatoxin-a; clothianidin; 2,4-D; 17-alpha ethinyl-estradiol; tetrahydrofuran; and thiamethoxam). MDH anticipates that these reviews will be completed in the next 2 (17-alpha ethinylestradiol & clothianidin) to 4 months (anatoxin-a; 2,4-D; tetrahydrofuran; and thiamethoxam).

Risk Assessment Issues

Drinking Water

Maine Center for Disease Control & Prevention

More than half of Maine residents rely on a private well for their drinking water, and about 10% of those wells have too much arsenic. Therefore it is important to understand what residents can do to reduce their exposure to arsenic. Maine CDC receives about 1,000 phone calls each year from residents with questions about their well water. What many callers want to know is what they can do to keep their families safe, and specifically, if it is safe to take a bath in water high in arsenic. With this context, the Maine CDC joined with colleagues from the U.S. CDC to assess remaining arsenic exposure sources among families that have arsenic in their well water and that have switched to bottled water or installed an arsenic treatment system at the kitchen sink. The results of this study “Assessing arsenic exposure in households using bottled water or point-of-use treatment systems to mitigate well water contamination” were published

in *Science of the Total Environment* this February (<http://www.sciencedirect.com/science/article/pii/S0048969715311190>).

Clean Water

A Practitioner's Guide to the Biological Condition Gradient: A Framework to Describe Incremental Change in Aquatic Ecosystems

In February, HECD released the technical support document, *A Practitioner's Guide to the Biological Condition Gradient: A Framework to Describe Incremental Change in Aquatic Ecosystems*. This document outlines a scientific framework, the biological condition gradient (BCG), which states, territories, and tribes can use to interpret biological responses to increasing effects of stressors on aquatic ecosystems. The BCG framework can be populated with state or regional data to develop a quantitative model using expert judgment that describes ecosystem changes from an undisturbed condition to a severely altered

condition. This document provides a common language that may be helpful to interpret the condition of aquatic resources across state and regional boundaries, even when biological assessment approaches may differ.

In conjunction with other biological assessment indicators and methods, this tool can be used to assist states, territories and tribes to describe baseline conditions, help identify high quality waters and evaluate potential for improvement in degraded waters, track changes in condition and support development of biological criteria.

Please contact Dana Thomas (thomas.dana@epa.gov), or technical staff, Susan Jackson (jackson.susank@epa.gov), with any questions.

For more information look here: <http://www.epa.gov/wqc/biological-assessment-technical-assistance-documents-states-tribes-and-territories>

Drinking Water Contaminant Occurrence Information

Unregulated Contaminant Monitoring Rule

EPA uses the Unregulated Contaminant Monitoring Rule (UCMR) program to collect data for contaminants suspected to be present in drinking water, but that do not have health-based standards set under the Safe Drinking Water Act (SDWA). Every five years EPA

develops a new list of UCMR contaminants, largely based on the Contaminant Candidate List (CCL).

The third Unregulated Contaminant Monitoring Rule (UCMR 3) was published in the Federal Register on May 2, 2012. UCMR 3 requires monitoring for 30 contaminants: 28 chemicals and 2 viruses. The latest UCMR 3 data summary, reflecting results reported through December 2015, was posted to <http://www.epa.gov/dwucmr>. Updates occur approximately quarterly and EPA anticipates that additional reference material will be made available to assist with the assessment of the UCMR 3 data. Please keep in mind that this dataset is not complete. UCMR 3 monitoring occurred through December 2015, and data are expected to be reported to EPA through the summer of 2016. These results are subject to change following further review by the analytical laboratory, the public water system, the State and EPA.

The fourth Unregulated Contaminant Monitoring Rule (UCMR 4) was proposed on December 11, 2015. The proposal outlines monitoring for 30 chemical contaminants between 2018 and 2020 using analytical methods developed by EPA and consensus organizations. This monitoring provides a basis for future regulatory determinations and, as warranted, actions to protect public health. The list of proposed analytical methods and contaminants is posted at <http://www.epa.gov/dwucmr/fourth-unregulated-contaminant-monitoring-rule>.

Publications Pertinent to Drinking Water Issues

A.E. Smith, et al. 2016. Assessing arsenic exposure in households using bottled water or point-of-use treatment systems to mitigate well water

contamination. *Science of the Total Environment*. Volume 544, 15 February 2016, Pages 701–710. doi:10.1016/j.scitotenv.2015.11.136

Upcoming Events and Conferences

Spring 2016 FSTRAC Webinar

The Spring 2016 FSTRAC Webinar is scheduled for Wednesday, April 13, 2016, from 1:00 to 3:30 p.m. (Eastern Time).

Below is the draft agenda for the webinar.

- 2016 Priorities for EPA's Health and Ecological Criteria Division – Colleen Flaherty, EPA OW
- Unregulated Contaminant Monitoring Rule (UCMR 3) Update – Melissa Simic, EPA OW

- Arsenic Exposure in Maine Homes with POU Treatment or Bottled Water Use – Andy Smith and Tom Simones, Maine Center for Disease Control & Prevention
- The Impact of High Early Life Water Intake Rates and Short-Term Effects for Deriving Health-Protective Drinking Water Criteria – Helen Goeden, Minnesota Department of Health
- State Hot Topics

If you are interested in joining the mailing list for FSTRAC to receive information about the FSTRAC Webinars and other relevant information, please contact the contractor for EPA's FSTRAC meetings (susan.lanberg@tetratech.com).

Peer Review of Draft National Toxicology Program (NTP) Monograph on Immunotoxicity Associated with Exposure to PFOA or PFOS – July 19, 2016

The Draft NTP Monograph on Immunotoxicity Associated with Exposure to PFOA or PFOS will be available by June 7, 2016. The meeting will be webcast (registration required, <http://ntp.niehs.nih.gov/about/org/monopeer/vw/meetings/index.html>).

SETAC North America Annual Meeting

SETAC will be holding its 37th annual North America meeting on November 6–10, 2016, in Orlando, Florida. Additional information is provided on the SETAC Website: <http://orlando.setac.org/>

SOT Annual Meeting

SOT will be holding its 56th annual meeting on March 12–16, 2017, in Baltimore, Maryland. Information about the March 2017 meeting and other upcoming events is provided on the SOT website: <https://www.toxicology.org/events/am/amToxexpo.asp>

EPA IRIS Upcoming Events

EPA IRIS holds public workshops on issues in risk assessment. Additional information is provided on the EPA IRIS workshop website: <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=307738>