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GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



DAN WYANT
DIRECTOR

February 13, 2015

TO: Dan Wyant, Director
Jim Sygo, Deputy Director

FROM: Divinia N. Ries, Chair
Toxics Steering Group

DATE: February 13, 2015

SUBJECT: Toxics Steering Group (TSG) – 2014 Annual Report

Please find attached the TSG 2014 Annual Report. This fulfills the requirement of the Department of Environmental Quality (DEQ), Policy and Procedure Number 09-006, for the TSG to prepare an annual report of accomplishments and recommendations to ensure adequate protection of children's health.

The TSG 2014 Annual Report will be made available on the TSG web site.

Attachment

cc: Gordon Wenk, Deputy Director, Department of Agriculture & Rural Development
Tim Becker, Acting Chief Deputy Director, Department of Community Health
DEQ Division Chiefs
TSG Membership



Michigan Department of Environmental Quality Toxics Steering Group 2014 Annual Report

I. INTRODUCTION

The Toxics Steering Group (TSG) is the Department of Environmental Quality's (DEQs) forum for discussion of human health and risk assessment issues related to exposure to chemical contaminants in environmental media. Members of the TSG are risk assessors and toxicologists within the DEQ (Air Quality Division (AQD), Remediation and Redevelopment Division (RRD), Office of Waste Management and Radiological Protection (OWMRP), and Water Resources Division (WRD), toxicologists from other state agencies (the Department of Community Health (DCH) and Department of Agriculture and Rural Development (DARD)) specifically, and other related state experts. The TSG meets approximately twice per year, or more if needed, with the goal of using the best- available science to address human health and risk assessment issues identified by the TSG or DEQ management. The TSG monitors and evaluates the latest scientific literature and general risk assessment issues, and makes recommendations relative to the DEQ's environmental program. Specifically, the TSG provides a forum for consideration of factors used to develop criteria and screening levels; for monitoring, reviewing, and discussion of new and innovative approaches to complex risk assessment concepts; and for addressing scientific and technical issues related to hazard, exposure, and risk assessments.

II. 2014 TSG MEMBERSHIP

DEQ

Amy Babcock, MPH (WRD)
Shannon Briggs, Ph.D. (WRD)
Dennis Bush, MS (WRD)
Mike Depa, MPH (AQD)
Christine Flaga, MS (RRD)
Kristen Kellock, Ph.D. (OWMRP)
Doreen Lehner, MS (AQD)

Deb MacKenzie-Taylor, Ph.D. (OWMRP)
Divinia N. Ries, Ph.D. (RRD), Chairperson
Robert Sills, MPH (AQD)
Joy Taylor-Morgan, MS (AQD)
Eric Wildfang, Ph.D. (RRD)
Keisha Williams, Ph.D. (AQD)
Emily Weingartz, Librarian, BS (RRD)

DCH

Christina Bush, MS
Linda Dykema, Ph.D.
Jennifer Gray, Ph.D.
Kory Groetsch, MS
Lisa Quiggle, MS

DARD

Kay Fritz, Ph.D.

III. SUMMARY OF THE TSG SUBCOMMITTEES AND WORKGROUP ACTIVITIES IN 2014

Children's Environmental Health Subcommittee (CEHS):

CEHS Members: Amy Babcock
Christina Bush
Deb MacKenzie-Taylor, Chair
Divinia N. Ries
Bob Sills

The CEHS is charged with tracking developments in the area of children's environmental health and making recommendations to the TSG for incorporation into human health risk assessment procedures, as appropriate. The RRD has requested the CEHS to assist the division in addressing the Collaborative Stakeholders Advisory Group's (CSA) recommendation that the DEQ develop a process for calculating cleanup criteria for environmental contaminants that demonstrate developmental/reproductive adverse effects. The subcommittee is tasked with generating its recommendations before RRD's update of criteria-related Rules.

Perfluorinated Compounds Workgroup (PFCW):

PFCW Members: Amy Babcock, Co-Chair
Christina Bush
Robert Delaney (RRD)
Deb MacKenzie-Taylor
Joy Taylor Morgan (AQD), Co-Chair
Eric Wildfang

The PFCW was charged by DEQ management to provide recommendations for establishing an environmental monitoring plan for perfluorinated compounds (PFCs) in the state. The PFCW submitted a white paper titled "Perfluorinated Compounds in Michigan: Current State of Knowledge and Recommendations for Future Actions" on September 1, 2011. The PFCW continued to meet and evaluate data collected and new research, policies and regulations pertaining to PFCs.

The WRD has developed final water quality values for perfluorooctanesulfonic acid (PFOS). The WRD informed the U.S. Environmental Protection Agency (U.S. EPA) that WRD does not agree with their use of the rat study as basis for developing the oral toxicity value (2014 Health Effects Document). The physiologically-based pharmacokinetic (PBPK) analysis of the monkey data was used by WRD as the basis for the DEQ reference dose (RfD). The AQD is monitoring IRIS for a reference concentration (RfC) for PFOS. PFCs are included in the Toxic Air Contaminant (TAC) List. The RRD will be developing Part 201 criteria for PFOS and perfluorooctanoic acid (PFOA).

Jennifer Gray (DCH) completed a guidance document for PFOS in fish: *Technical Support Document for Assessment of Perfluorinated Chemicals and Selection of a Perfluorooctane Sulfonate (PFOS) Reference Dose as the basis for Michigan Fish Consumption Screening Values (FCSVs)*. The DCH toxicologists have been processing PFC data generated from the Great Lakes Restoration Initiative (GLRI) project.

1,4-Dioxane Subcommittee:

1,4-DS Members: Christine Flaga, Chair
Jennifer Gray
Deb MacKenzie-Taylor
Divinia N. Ries

Per a request from the RRD, the TSG Subcommittee evaluated the information presented by Dr. Michael Dourson of Toxicology Excellence for Risk Assessment (TERA) on October 18, 2013, relating to 1,4-dioxane's mode of action for liver tumors in rodents. The Subcommittee presented a deliberative draft report to the TSG on July 11, 2014. The draft report addressed Dr. Dourson's proposal/presentation (October 8, 2013), and his response to comments (December 9, 2013), raised by TSG members. All TSG members present at the October TSG meeting concurred with the draft report's recommendations. Based on comments received, the draft report's executive summary format will be revised and the report content will only include recommendations relating to TERA's proposal for the mechanism of action by which 1,4-dioxane causes cancer. The Subcommittee plans to submit the report for management review by February, 2015.

Along with the Minnesota, Missouri, Texas, and Kentucky Departments of Health/Environment, the TSG signed a letter drafted by TERA to the Japan Ministry of the Environment requesting copies of the original 1,4-dioxane drinking water and inhalation studies conducted by the Japan Bioassay Research Center. Review of these studies would allow TERA to evaluate the significance of this additional data pertinent to its proposed mode of action for 1,4-dioxane carcinogenesis.

IV. COLLABORATIVE ACTIVITIES

- The TSG supported the DCH Division of Environmental Health's grant application for funding from the Centers for Disease Control and Prevention to establish and maintain a Michigan portal to the National Environmental Public Health Tracking Network. The Division received the grant. For the first year of the grant, activities include establishing the IT structure and signing a data sharing agreement with AQD and WMD. This grant also includes monitoring of health measures such as cancer, birth defects, carbon monoxide poisonings, and asthma hospitalization data.
- TSG contributed to the Michigan Triennial Report's Emerging Contaminant section. Identified emerging contaminants include: pharmaceuticals and personal care products, perfluorinated compounds, polychlorinated naphthalenes, nanomaterials, n-propyl bromide, endocrine disruptors, bisphenol A, triclosan, and microplastics.
- TSG members actively participated in the RRD's Part 201 Stakeholders' Technical Advisory Groups (TAGs). The TAGs were tasked with addressing technical issues identified by the CSA Group relating to physical-chemical and toxicity information sources, exposure assumption sources and values, and vapor intrusion.
- TSG members participated in addressing the issue of harmful algal blooms (HABs). An interdepartmental group is being formed which will include DEQ, DARD, and DCH toxicologists. The current DEQ microcystin criterion is 1.0 µg/L. Japan uses a 0.5 µg/L level. The WRD has evaluated available information and anticipates the release of U.S. EPA's HABs assessment report in early 2015, to support the development of a new microcystin criterion. A concern for HABs is its presence in bigger bodies of water.

V. OUTREACH AND EDUCATION

- The TSG was represented by a member's participation in the U.S. EPA-AQD-University of Michigan (UM)-Wayne State University public workshop on Detroit air quality issues.
- The TSG assisted with the DCH and DEQ displays for the 2014 Quality of Life Earth Day celebration.

VI. TRAINING

- A mini training on PBPK modeling was conducted for TSG members by Amy Babcock and Keisha Williams on October 9 and December 12, 2014. Both trainers attended the 3-day PBPK training offered by Michigan State University (MSU).
- Webinars provide the TSG the opportunities to keep abreast with the newest and most relevant issues in toxicology and risk assessment. Webinars sponsored by agencies and organizations attended by TSG members, included:
 - U.S. EPA/National Institute of Environmental Health Sciences (NIEHS) Children's Centers' children's health webinar series
 - U.S. EPA and NIEHS risk assessment webinars
 - Agency for Toxic Substances and Disease Registry (ATSDR) webinars
 - State Risk Assessors (SRA) quarterly teleconferences and SRA sponsored webinars
 - Society of Toxicology Risk Assessment Specialty Section monthly webinars
 - Society of Risk Analysis sponsored webinars.
 - Interstate Technology and Regulatory Council training/webinars.
- In 2014, the TSG was represented by a member's attendance at the International Society of Exposure Science Annual Meeting, Cincinnati, Ohio.
- The TSG Brown Bag provides an informal, open forum for TSG members (and others) to review and discuss new and innovative issues and advances in the science of toxicology, risk assessment, and other relevant environmental themes. This year's brown bag topics included an overview of MSU's PBPK training course by Amy Babcock and an evaluation of the consumption of chicken eggs from dioxin contaminated soils by Deb MacKenzie-Taylor.

VII. FUTURE NEEDS AND RECOMMENDATIONS OF THE TSG

In response to advancements in the field of risk assessment, the TSG continues to recommend that members pursue training to gain knowledge and skills in the following areas:

- Cumulative, multi-pathway, and probabilistic risk assessment (PRA)
- Dose-response modeling using the U.S. EPA's benchmark dose software
- PBPK modeling
- Interpretation of health statistics and health disparities relative to environmental contaminant exposures

To achieve adequate protection of children's health, the TSG will need to be equipped, through professional development, with risk communication skills and enhanced ability to apply the best available science and practices in toxicology, human health risk assessment, and risk communication.