
From: Sygo, Jim (DEQ)
Sent: Friday, October 16, 2015 12:02 PM
To: Dykema, Linda D. (DHHS)
Subject: FW: DRAFT DELIBERATIVE; NOT SUBJECT TO FOIA - final draft
Attachments: draft deliberative Justification of the school daycare drinking water lead level.docx;
TSG IEUBK outputs draft for discussion purposes.pdf

So looking at the model runs it seems to me that you're better off using your money to reduce the exposure of lead in homes and yards first if you have children with elevated levels of lead. Is that correct?

From: Gray, Jennifer (DHHS)
Sent: Friday, October 16, 2015 10:57 AM
To: Groetsch, Kory J. (DHHS); Flaga, Christine (DEQ); Wildfang, Eric (DEQ); Sills, Robert (DEQ); MacKenzie-Taylor, Deb (DEQ)
Cc: Dykema, Linda D. (DHHS); Sygo, Jim (DEQ)
Subject: DRAFT DELIBERATIVE; NOT SUBJECT TO FOIA - final draft

All;

Here is the final draft for your review. Please let me know as soon as possible if you have comments or edits. I would greatly appreciate those by 2 pm, so I'm able to finalize the draft today.

I'm not sure of the MDEQ 1997 park reference. Deb, is there a formal report?

I will add headers to the modeling output sheets and figures.

Thank you,
Jennifer

DRAFT – deliberative not subject to FOIA

Justification of the drinking water no “corrective action” lead level for use in the Flint school and daycare drinking water sample decision tree

The Michigan Department of Health and Human Services (MDHHS) requested that the Toxic Steering Group (TSG) provide endorsement of a health-based drinking water lead levels that would require no “corrective action” to put back into service drinking water faucets and fountains to be used by Flint school and daycare children. Selection of the “corrective actions” was not included in the charge question and is not discussed in this document. A TSG subcommittee was convened to examine this issue. Subcommittee members are Deb Mackenzie-Taylor (Michigan Department of Environmental Quality [MDEQ]), Robert Sills (MDEQ), Eric Wildfang (MDEQ), Jennifer Gray (MDHHS), and Kory Groetsch (MDHHS).

Neither the Centers for Disease Control and Prevention’s Agency for Toxic Substances and Disease Registry (ATSDR) nor the U.S. Environmental Protection Agency (EPA) have derived potency values (e.g. reference dose, minimal risk level) for lead to be used in risk assessment methods. Both agencies have stated that no blood lead level has been found to be safe and precautionary actions to reduce exposure to lead, such as running tapwater briefly before use, should always be followed. Due to the lack of potency values, the EPA developed a biokinetic model for evaluating lead exposure from multiple media. Lead levels in air, soil, house dust, diet, drinking water, and maternal blood are used to estimate geometric mean blood lead levels for a population of children and the probability that a child would be above a specified blood lead level¹. The model results are compared to an EPA population health protection goal for young children exposed to lead at residential properties of 5% or lower risk of a child having a blood level greater than the CDC reference value of 5 µg/dL². The model, however, does not include inputs to account for direct paint chip ingestion².

Use of the EPA’s Integrated Exposure Uptake Biokinetic (IEUBK) Model

The EPA’s Integrated Exposure Uptake Biokinetic (IEUBK) Model for Lead in Children version 1.1 Build 11 was used to evaluate exposure to children one year old or younger and children seven years old or younger. Default values were retained unless otherwise noted below. See Table 2-1 in the “User’s Guide for the Integrated Exposure Uptake Biokinetic Model for Lead in Children (IEUBK) Windows[®]” for the listing of all the default values³. Values selected that are more appropriate for a Michigan urban area, Flint, are described briefly below.

Air data

MDEQ performs monitoring for lead in ambient air (as measured in Total Suspended Particulates; lead [TSP]) at a number of fixed stations in Michigan. Some of these monitoring stations (e.g., in Belding, Port Huron, and Vassar) were established to intentionally capture the influence of specific nearby industrial

¹ The modeling output includes the percent of children in a population that are above a specified blood lead level, but that value can also be viewed as the probability (risk) that a certain child would be above the specified blood lead level.

² As stated on the EPA’s Lead at Superfund Sites: Frequent Questions from Risk Assessors on the Integrated Exposure Uptake Biokinetic (IEUBK) Model webpage, found at <http://www2.epa.gov/superfund/lead-superfund-sites-frequent-questions-risk-assessors-integrated-exposure-uptake#mean>.

³ The model itself and documentation, including the user’s guide for the model can be found at <http://www2.epa.gov/superfund/lead-superfund-sites-software-and-users-manuals>.