
From: Lyon, Nick (DHHS)
Sent: Wednesday, October 07, 2015 11:19 PM
To: Wells, Eden (DHHS)
Subject: Re: Follow-up for 3:30 call---regulatory versus approved EPA/DEQ levels

Ok. Thanks.

On Oct 7, 2015, at 7:21 PM, Wells, Eden (DHHS) <WellsE3@michigan.gov> wrote:

Just read last paragraph from Linda- instead of MDEQs water limit of 4 PPB, MDHHS proposes to identify all need for investigations at a BLOOD level of 5 microgram/ dl

Sent from my iPhone

Begin forwarded message:

From: "Dykema, Linda D. (DHHS)" <DykemaL@michigan.gov>
Date: October 7, 2015 at 10:17:47 AM EDT
To: "Miller, Corinne (DHHS)" <MillerC39@michigan.gov>, "Wells, Eden (DHHS)" <WellsE3@michigan.gov>
Cc: "Moran, Susan (DHHS)" <MoranS@michigan.gov>, "Groetsch, Kory J. (DHHS)" <GroetschK@michigan.gov>, "Gray, Jennifer (DHHS)" <GrayJ@michigan.gov>
Subject: RE: Follow-up for 3:30 call---regulatory versus approved EPA/DEQ levels

The MDEQ uses the EPA Integrated Exposure Uptake Biokinetic (IEUBK) model to develop cleanup criteria for contamination sites. The IEUBK model is a pharmacokinetic model that predicts population based blood lead levels in children using a variety of inputs including material baseline blood lead levels, exposure assumptions for environmental media (groundwater and soil), and specific exposures from lead-based paint and dust.

To develop their cleanup criteria for lead, MDEQ assumed that there were no exposures to lead paint or dust. I'm not sure when they last ran the model, but they would have used the most current baseline maternal blood level as recommended by CDC/EPA. They would have also used the most current exposure variables from the EPA Exposures Factors Handbook for things like how much water children drink per day and how much soil they take in through incidental ingestion (we all unknowingly eat a little bit of dirt every day, children more so because of frequent hand to mouth behavior). They would have used 10 ug/dL blood lead level as the target blood action level. Using this approach DEQ toxicologist identified "generic" residential cleanup criteria of 4 ppb for groundwater and 400 ppm for soil. They also offer a sliding scale such that if lead levels in one media are higher, the other must meet more stringent, protective levels.

This generic Michigan-wide approach may not be representative of the conditions in the city of Flint. We are gathering more specific exposure variables and will use the target blood level of 5 ug/dL to identify water levels protective of the Flint population. We should have some results later today or early tomorrow.

Linda

From: Miller, Corinne (DHHS)
Sent: Tuesday, October 06, 2015 7:45 PM
To: Wells, Eden (DHHS)
Cc: Moran, Susan (DHHS); Dykema, Linda D. (DHHS)
Subject: Re: Follow-up for 3:30 call---regulatory versus approved EPA/DEQ levels

Linda needs to weigh in, of course, but my recollection of what she indicated is that the 4 ppb is a criterion for lead in drinking water related to cleanup of a site. Exposure to lead, of course, may occur through several other pathways including soil or lead paint. The ppb target needs to be set at something that is maximally protective while being at a level that is achievable. It may be that 4 is the best level. We'll see.

Sent from my iPhone

On Oct 6, 2015, at 6:13 PM, Wells, Eden (DHHS) <WellsE3@michigan.gov> wrote:

Defer to Linda--- she is in conversations with DEQ about this level from what I understand

Sent from my iPhone

On Oct 6, 2015, at 6:10 PM, Moran, Susan (DHHS) <MoranS@michigan.gov> wrote:

Lynda/Eden - please clarify this statement :

- MDHHS Tox has NOT endorsed this 4 ppb level, and has been working with DEQ regarding this issue. This has implications for the exposure assessment protocol that they will be working on over the next two days with DEQ.

Sent from my iPhone

On Oct 6, 2015, at 4:42 PM, Wells, Eden (DHHS) <WellsE3@michigan.gov> wrote:

Linda Dykema and I just talked regarding anticipated further PH recs for schools:

- Be sure no other water exposures/usage by staff/students (cooking classes, etc) as Eliz is checking with MDE.
- Schools should ensure no OTHER sources of potential lead exposure is present)(per our usual recommendations), such as lead paints, soldering, etc.
- Recommendations should also cover all Head Start and Daycare facilities. (Linda mentioned some high schools have daycare facilities as well).
- Also note these recommendation are particularly important for schools/daycares taking care of pregnant women or young children.
- We cannot open back water lines to schools testing below 14 or nondetect (see below)

Because the 15ppb is a regulatory level, not a health level, exposure assessments must occur. **Public Health Actions that will be coordinated with DEQ, so this is prelim:**

- Water: Schools that even tested non-detectable or from 1-14 will need to still have comprehensive testing done (across all faucets), because DEQ screening only looked at a couple of samples from each school---a particularly high level source could have been missed. THIS WILL BE A VERY COMPREHENSIVE TESTING RESPONSE
- Water: Schools tested will include daycares, headstarts ,etc
- Human: An EBL investigation will need to be conducted **for every child** who tested over 5 microgram/dl---there are about 100 that tested in this range after the River switch---this investigation involves a visit and survey of home and family, and home assessment for sources such as lead paint, H2O etc. (she is working up costs, but this could be \$1000-\$1500/ household)

This information is subject to be updated

Eden

From: Wells, Eden (DHHS)

Sent: Tuesday, October 6, 2015 4:16 PM

To: Lyon, Nick (DHHS); Lasher, Geralyn (DHHS); Moran, Susan (DHHS); Hertel, Elizabeth (DHHS); Becker, Timothy (DHHS)

Cc: Grijalva, Nancy (DHHS)

Subject: Follow-up for 3:30 call---regulatory versus approved EPA/DEQ levels

Just got off phone with Jen Gray, our toxicologist who works with Linda.

- She concurs with me that DEQ does NOT KNOW WHICH ZIPCODE these tests came from!
- 15 ppb is the EPA actionable level
- 4 PPB is the residential limit DEQ uses to state that drinking water is safe AFTER an abatement or clean-up.
- MDHHS Tox has NOT endorsed this 4 ppb level, and has been working with DEQ regarding this issue. This has implications for the exposure assessment protocol that they will be working on over the next two days with DEQ.
- Right now, we cannot determine any other PH action other than turning of the water to all schools, however ,I will have a confirmation of this by Linda this evening---
- ?? and it is unknown on the MDHHS side if we can turn water back on if the school screens as nondetectable, because Linda needs to review the sampling method by DEQ.

