To: Scott Smith[ssmith@waterdefense.org]; Durno, Mark[durno.mark@epa.gov]; Feighner, Bryce (DEQ)[FEIGHNERB@michigan.gov]; Mark Johnson[mdjohnson@cdc.gov]; Motria Caudill[mcaudill@cdc.gov]
From: Wells, Eden (DHHS)
Sent: Sat 3/19/2016 2:06:41 PM
Subject: RE: Follow Up - MI-DEQ / EPA / Water Defense Meeting

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,,,,,,,,
Hi Scott,

I stand by my previous email---and my statement that if there are any findings of any chemicals, including those of concern for dermal absorption or harm, that are in exceedance of other community water systems, please advise. While drinking water standards are used by DEQ et al, what I am stating is, if you find TTHMs and are concerned they are causing rashes in Flint, are these levels similar to or in exceedance of TTHM levels in other non-Flint communities across Genesee County or the state or the US? This would be helpful to know. I have been advised that current testing shows that they are not; this is independent of what level is used for regulatory purposes by agencies.

I base my positions on the testing and science provided by toxicologists who review the testing results for potential human health hazards, from any exposure pathway.

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From: Scott Smith [mailto:ssmith@waterdefense.org]
Sent: Saturday, March 19, 2016 9:54 AM
To: Wells, Eden (DHHS) ; Mark Durno ; Feighner, Bryce (DEQ) ; Mark Johnson ; Motria Caudill
Subject: Re: Follow Up - MI-DEQ / EPA / Water Defense Meeting

Dr. Wells,

Thanks for the response but I am still confused.

Also, I have another meeting tomorrow with a public affairs person from the EPA at 10 am. So maybe we could meet tomorrow?

<u>Can you answer these specific questions?:</u>

1. Are you basing your position that bath and shower water is safe to bath in on drinking water standards? Yes or no?
2. Dr. Mona and Dr. Edwards have done great work on lead; however there are more chemicals in the water than just lead. Also, has Dr. Edwards or Dr. Mona addressed issues with particulate lead? Is either a toxicologist? Have they done work with trihalomethanes and the other chemicals of concern related to water heaters / shower / bath water in Flint or anywhere else? Has anyone discussed dermal absorption of chloroform and other volatiles with Dr. Mona or Dr. Edwards? Yes or No?
3. When you reference exceedance below are you referring to drinking water standards? Yes or no?
4. Do you agree that there are 3 human exposure pathways – 1. Drinking water 2. Bathing / showering dermal absorption 3. Breathing? Yes or no?
5. I hear what you are saying (I think) and believe it may be more accurate to state, “The recommendations that the Water in Flint is safe to bathe in is based on drinking water standards. There are 3 human exposure pathways for water – drinking, dermal (skin) absorption via bathing /

showering, and breathing (volatile chemicals from hot / warm water in showers / baths). There is not necessarily a correlation between drinking water standards and the other 2 human exposure pathways. There are no standards nor extensive human health studies for bathing / showering and more research into this is ongoing. At this point in time, we have to admit what we don't know. We don't know the complete risks of bathing / showering in this water and are evaluating the cases of rashes and other health issues and the potential correlation to the Flint water."

Best Regards,

Scott Smith

Chief Technology Officer & Investigator

Water Defense

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(508) 345-6520

From: Eden Wells Dr <wellse3@michigan.gov>
Date: Saturday, March 19, 2016 at 9:05 AM
To: Scott Smith <ssmith@waterdefense.org>, Mark Durno <durno.mark@epa.gov>, Bryce Feighner <feighnerb@michigan.gov>, Mark Johnson <mdjohnson@cdc.gov>, Motria Caudill <mcaudill@cdc.gov>
Subject: RE: Follow Up - MI-DEQ / EPA / Water Defense Meeting

Good morning, all,

I am sorry, but am stuck at the Toyota dealership for longer than anticipated and will not make it up there in time- and I also have a community testing fair today and a talk to give at the Michigan Infectious Disease Society in Detroit early afternoon. So, I will likely miss meeting you, again; I am so sorry, Scott. It has been incredible busy.

On the bathing issue- both Dr. Mona and the MDHHS state that, based on what is currently known about the water system (including all of the water tests, etc.), it is safe to bathe and shower. CDC and CDC ATSDR are in concurrence. Dr. Marc Edwards (see his website, from VT and a national water expert renowned for his role in bringing this current crisis to light, is also in concurrence. While I am aware of the concern of TTHMs in the water due to Flint's experience with this last year, I am not aware that these levels are currently in exceedance of what water systems throughout the US are currently exhibiting (Mark and Bryce, please advise if I am wrong in this). If findings of TTHMs exceed those of the surrounding county, state or nation, please advise. Also, our toxicologists work closely with the CDC ATSDR toxicologists in review of water testing data from EPA and DEQ to determine an possible human health effects; so when I speak about use of bathing or showering currently, I make sure to state something similar to: "…we have no data at this time to change our guidance regarding the safety of bating or showering." The toxicologists are heavily involved in the Rash Investigation.

There will ultimately be 200-250 clients evaluated within the CDC/MDHHS/EPA/DEQ rash investigation (your numbers are rather high- while many call, the entry into the program is based on a specific case definition as you may have seen on my slides). Current water sample panels that have been completed do not yet identify a source, but many tests are outstanding and many

clients still need their homes tested. I met with the Rash Team (CDC/EPA/MDHHS physician/medical epidemiologist and toxicologists) and the dermatologists involved on Monday evening; the rashes for the main part are dry, scaly and itchy; but again, they are early in their clinical evaluations phase.

I appreciate the importance of the discussions you will be having, and continue to keep meinthe loop,

Warm regards,

Eden

Eden V. Wells, MD, MPH, FACPM

Chief Medical Executive

Michigan Department of Health and Human Services

201 Townsend St., 5th Floor CVB

Lansing, MI 48913

From: Scott Smith [mailto:ssmith@waterdefense.org]
Sent: Saturday, March 19, 2016 8:32 AM
To: Mark Durno <durno.mark@epa.gov>; Feighner, Bryce (DEQ) <FEIGHNERB@michigan.gov>; Mark Johnson <mdjohnson@cdc.gov>; Motria Caudill <mcaudill@cdc.gov>
Cc: Wells, Eden (DHHS) <WellsE3@michigan.gov>
Subject: Follow Up - MI-DEQ / EPA / Water Defense Meeting

All,

Thanks for taking the time to meet with me yesterday. The purpose of this e-mail is to summarize our meeting and outline follow up items. Please let me know if I missed anything, got something wrong, and/or if you have any additions.

I will be meeting this morning at 10 AM with Bryce again with Harold Harrington and Ben Ranger for the UA Plumbers and Pipefitters Union. Hopefully, Dr. Wells will be able to join us this morning.

Below is a summary of the meeting, follow up actions, and questions:

1. Flint has an inefficient water distribution system as it is sized 3 times larger than it should be. Old water in the system is an issue. There have been chlorine valve malfunctions. Chlorine pellets have been added manually. What does all of this mean? Do we have detailed data on this? Is this potentially part of the issues with rashes and people complaining of getting sick from showering / bathing? Do comprised galvanized pipes have something to do with the rash and health issues?
2. EPA has initiated testing of 100 homes. I understand there are about 40,000 homes in Flint. Given all the variables, statistically, can we draw definitive conclusions with this sample size?
3. One thing the government agencies are struggling with is basing health and human safety for bathing / showering on drinking water standards. There seems to be

agreement with me / Water Defense on concerns of declaring water safe to shower / bathe in based on drinking water standards as no one really drinks hot / warm bath water that utilizes a water heater – and chemicals like cholorform are not only absorbed through the skin and are lipophilic, but also volatize in the air and are breathed directly into the lungs . 3 human exposure pathways – drinking, bathing / showering – dermal absorption, and breathing (volatiles / chloroform – trihalomethanes). Water concentrations of lead and other chemicals do not correlate to dermal (skin) absorption. Both Scott Smith and Mark Durno raised the questions of there not being any studies on dermal absorption and/or bathing / showering standards for health and human safety. Given this, what is the basis for the Bulk Text that was sent out to the community last week declaring the water safe to bath and shower in? This is the direct quote from the Bulk Text "Flint Pediatrician Dr. Mona says based on current scientific testing, bathing is safe and warm showers are best. More: https://www.cityofflint.com ." This is a strong statement. Where is the backup data for this statement? What current scientific testing is Dr. Mona referring to? Was this statement based on drinking water standards? Was there a toxicology review? Were any bathtub /shower water tests done prior to this statement and if so, where are these detailed test reports? I keep asking are there bathing / showering standards and/or studies we have not seen? – and I have been told these standards / studies do not exist.

4. The rash investigations include 300-400 cases.
5. How water heaters and follow up testing is important. Water Defense has found lead in water heaters. Given that ph variation can cause lead to go into solution, what data do we have available to monitor this and how are we gong to monitor this?
6. Particulate lead appears to be a longer term problem. There has not been much of a discussion about particulate lead with the community. It may be that the lead pipes can heal themselves with the orthophosphate; however, it appears that the galvanized pipes and copper pipes could continue to pose risks longer term. Once the galvanized pipes were compromised with the corrosive Flint river water, how effective is the orthophosphate? For example, why are we continuing to see 350 ppb of lead entering Ex. 6 - Personal Privacy house? Ex. 6 - Personal Privacy still has concerning lead levels in his water heater as does Ex. 6 - Personal Privacy What sampling size is necessary in Flint to draw conclusions about what is in the water heaters and what are the associated longer term risks?
7. Scott Smith will send a separate e-mail with all the detailed ALS Environmental Lab reports. EPA / MI-DEQ will also send to Water Defense all detailed lab reports. We can then cross reference all the data. Scott Smith will introduce Mark Johnson to the entire Water Defense scientific and toxicology support team, set up a conference call, and discuss in detail the open-cell matrix Waterbug testing for cumulative / exposure over time. Water Defense has taken grab samples too and tested for the full spectrum of chemicals VOC's, SVOC's, and Metals. Furthermore, in the homes Water Defense tested with grab samples we tested the state of the water as it enters the home is testing, water heaters, and bathtubs and showers.

Thanks again for taking the time to meet with me. On behalf of Water Defense, we look forward to working with all of you to support the community and great people of Flint.

Best Regards,

Scott Smith

Chief Technology Officer & Investigator

Water Defense

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