

Olszewski, Rosemarie (DEQ)

From: Thelen, Mary Beth (DEQ)
Sent: Thursday, September 17, 2015 3:39 PM
To: Olszewski, Rosemarie (DEQ)
Subject: FW: Flint Water Elected leader meeting ODWMA Final Draft documents
Attachments: Flint-QuadrantDiagram-Draft.xlsx; City of Flint Background-Draft.docx; FAQ-Flint Customer Tap water lead levels-draft.docx

Please print 2.

From: Busch, Stephen (DEQ)
Sent: Thursday, September 17, 2015 3:08 PM
To: Wurfel, Brad (DEQ); Pallone, Maggie (DEQ)
Cc: Thelen, Mary Beth (DEQ); Feuerstein, Heather (DEQ); Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Sygo, Jim (DEQ)
Subject: Flint Water Elected leader meeting ODWMA Final Draft documents

Brad and Maggie,

Attached are my final edits to the documents you requested. Let me know if you have questions or need anything else.

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DRAFT

DRINKING WATER - LEAD - DISTRIBUTION OF RESPONSIBILITIES

Environmental Protection Agency Promulgation of Federal Safe Drinking Water Act Rules 1974 Safe Drinking Water Act 1991 Lead and Copper Rule 2000 Lead and Copper Rule Minor Revisions 2007 Lead and Copper Rule Short Term Revisions ???? Lead and Copper Rule Long Term Revisions Granting Primacy of Federal Regulations to States Auditing of State Public Water Supply Programs Provide Funding to States	Michigan Department of Environmental Quality Primacy - Michigan Safe Drinking Water Act and Administrative Rules Oversight of public water systems Inspections Construction Permitting Provide loans to water systems for public infrastructure improvements State Laboratory Services Laboratory Certification Establish monitoring requirements, quantity and frequency Verification of monitoring results and compliance determination Notify water systems of Action Level Exceedance Establish Water Quality Parameter Ranges, as necessary State Reporting to EPA Operator Training and Certification
City of Flint Water System Certified Operation of public water system Establish Water Rates Obtain construction permits Reporting to MDEQ Coordination of lead and copper sampling Establishing a Tiered Sampling Pool Providing Sampling Kits and Instructions to customers Obtain signed statements from participating customers Obtain sample analysis Provide individual lead sample result to participants Comply with Action Levels for lead and copper Provide lead monitoring and notice Certification to MDEQ Provide Annual Report (CCR) to all customers Conduct Water Quality Parameter Monitoring Recommend and Install Optimized Corrosion Control Treatment Provide Public Notification, as necessary	Water Customers Participate in lead sampling as requested Request lead testing if concerned Follow lead sampling Instructions Provide signed information on how sample was collected Review individual result material Follow instructions for reducing lead exposure Replace private leaded service line and plumbing materials with lead-free products Obtain plumbing permits and comply with code requirements Pay Water Bills Read Annual Report (CCR) Read and follow Public Notification materials

DRAFT 9/17/2015

City of Flint Water System Background

Water Service Land Area 34 square miles
 550+ miles of public water mains
 250+ miles of water mains 75+ years old
 70% of public water mains are unlined cast iron pipe
 Service population 99,763
 Service connections 32,900
 Flint Water System established in 1883
 Flint Water Treatment Plant #2 completed in 1954
 Connection to Detroit Water and Sewerage Department 1967
 Flint Water Treatment Plant #2 rehabilitated 1999 – 2005

City of Flint Timeline

April 2013 – Flint notifies DWSD of contract discontinuation and joins the Karegnondi Water Authority
 April 2013 – DWSD sets termination of Flint water service contract to April 17, 2014
 June 2013 – Karegnondi Water Authority groundbreaking
 June 2013 – Flint notifies DEQ of intent to use of Flint Water Treatment Plant full time with Flint River
 May 2014 – Flint stops purchasing DWSD water. Starts using the City of Flint WTP and Flint River
 August 2014 – Flint E.Coli Bacteria violation, Partial System Boil Water Advisory
 August 2014 – Disinfection Byproducts, DEQ requests preemptive Operational Evaluation
 September 2014 – Flint Total Coliform Bacteria violation, Partial System Boil Water Advisory
 November 2014 – Disinfection Byproducts violation begins
 January 2015 – 1st 6 month lead and copper sampling completed 100 samples, 90th% = 6 ppb
 July 2015 – 2nd 6 month lead and copper sampling completed 69 samples, 90th% = 11 ppb
 August 2015 – Disinfection Byproducts return to compliance
 August 2015 – Flint required by DEQ to recommend and install Optimized Corrosion Control Treatment

 January 2016 – Flint plans to have Optimized Corrosion Control Treatment operational
 July 2016 – Planned connection to Karegnondi Water Authority (Lake Huron water to Flint WTP)

Frequently Asked Questions about Customer Tap water lead levels in the City of Flint – DRAFT 9/17

How was the Lead and Copper Rule Established?

Under the Safe Drinking Water Act, EPA sets public health goals and enforceable standards for drinking water quality. The Lead and Copper Rule was established as a treatment technique rule because lead contamination of drinking water often results from corrosion of the plumbing materials belonging to water system customers, and there is no safe level of lead exposure. Therefore, instead of meeting a maximum contaminant level (MCL) for lead or copper, the rule requires public water supplies to take certain actions to minimize lead and copper in drinking water, to reduce water corrosivity and prevent the leaching of these metals from the premise plumbing. When that isn't sufficient, replacement of lead service lines under their control could be required. The current rule sets a monitoring action level (AL) which is not the same as an MCL. An MCL is based on health effects and feasibility; whereas an AL is a screening tool for determining when certain treatment technique actions are necessary.

What is the source of lead in customer tap water?

Lead enters or leaches into water from lead service lines, lead solder, and leaded plumbing materials including fixtures, faucets, and fittings. Sampling at the Flint Water Treatment Plant has shown no lead in its treated water.

How is lead compliance determined?

Compliance with the Action Level (AL) is based on a 90th percentile level calculation. For example, if 100 compliance samples were collected, the 90th percentile would be based on the result of the 11th highest lead sample for that monitoring period. Therefore, if more than ten percent of these compliance samples report lead above the AL of 15 parts per billion, a water supply has an AL exceedance. An exceedance is not a violation. It triggers other requirements which could include public notification, additional water quality sampling, and possibly further treatment.

What is the frequency of lead and copper sampling?

Sampling periods can be as frequent as every six months to as little as once every three years. Reduction in sampling frequency is based on continued compliance with the Action Level and normally follows a progression of two six month periods, followed by annual sampling for three additional years, then one period every three years. Compliance samples can be collected at any time during six month sampling periods. When sampling is conducted annually or once every three years, all compliance samples are required to be collected between June 1 and September 30. This is done to capture warmest water conditions likely to produce the most leaching.

Why are customers asked to collect lead and copper samples?

Compliance sampling for lead requires the water to, "have stood motionless in the plumbing system of each sampling site for not less than six hours." In order to achieve this requirement, residents are provided with detailed instructions and requested in general to collect the sample as the first thing they do when they wake up in the morning. It would be difficult for City water staff to otherwise collect such samples within the limits of the monitoring period.

How long has the City of Flint conducted lead monitoring?

The City of Flint first began compliance monitoring for lead levels in customer taps as part of the Detroit Water and Sewerage Department (DWSD) consecutive system in January 1992 following the enactment of the Lead and Copper Rule. Two six month periods were collected in 1992. Sampling resumed with two six month periods in 1997 following the installation of Optimized Corrosion Control Treatment by

DWSD. A six month period was collected in 1998 and again in 1999. Annual sampling was completed in 2000, 2001, and 2002. Then triennial sampling was completed in 2005, 2008, and 2011 before the City of Flint changed sources and treatment in May 2014.

Has the City's compliance monitoring ever exceeded the lead action level?

No. While some individual samples do exceed the 15 part per billion (ppb) lead Action Level (AL), the AL is not a standard. Compliance is determined based on the 90th percentile value of all valid compliance sample results obtain during the established monitoring period. The City of Flint 90th percentile level has ranged between 0 ppb (2008 and 2011) and 15 ppb (1992), but never exceeded the AL. This includes the two most recent six month periods in 2014 and 2015 of 6 ppb and 11 ppb, respectively.

Why are some samples not included in the compliance determination?

Lead and Copper compliance sample sites must meet specific criteria that target customers with the highest potential for lead leaching. The sample must also be collected from a commonly used kitchen or bathroom tap, and in accordance with the provided sampling instructions. Customers that employ certain types of additional treatment are not allowed as such samples are not representative of water quality supplied by the water system. Samples must also be collected within the established monitoring period.

What is the timeline for installation of corrosion control treatment?

Under the Lead and Copper Rule treatment technique requirements, steps to complete the installation of optimal corrosion control treatment and follow-up monitoring are allowed to take up to five years. The City of Flint has committed to completing installation of optimal corrosion control treatment in less than six months.

What will happen when Flint obtains water from the Karegnondi Water Authority?

The City has committed to having Optimized Corrosion Control Treatment in place prior to its connection with the Karegnondi Water Authority (KWA). The water provided by KWA will come from a new source, Lake Huron. This change in source will require the City to return to two six month periods of lead and copper sampling and continued compliance with the Action Levels. The City of Flint water treatment plant will continue to operate with uninterrupted Optimized Corrosion Control Treatment.

When is customer and public notification regarding lead required?

Under the Lead and Copper Rule, public water supplies are required to provide individual lead results to those customers whose homes are sampled for compliance with the action level. Each of these customers is also provided information on actions they can take to limit lead exposure in their tap water. Furthermore, results from the most recent lead compliance monitoring determination are included each year in the annual consumer confidence report (CCR), also known as the annual water quality report that each water system must provide to all customers. As required by EPA, this report also includes general consumer awareness information regarding lead.

How can I reduce lead in drinking water in homes with materials containing lead?

Flush your pipes before drinking, and only use cold water for consumption. The more time water has been sitting in your home's pipes, the more lead it may contain. When water in a particular faucet has not been used for six hours or longer, "flush" your cold-water pipes by running the water until it becomes as cold as it will get. This could take as little as five to thirty seconds if there has been recent water use such as showering or toilet flushing. Otherwise, it could take two minutes or longer. Use only water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water

is likely to contain higher levels of lead. The two actions recommended above are very important to the health of your family. They should be effective in reducing lead levels because most of the lead in household water usually comes from the plumbing in your house, not from the local water supply.

How long would it take to replace lead service lines across Flint?

The City has approximately 32,900 service connections in total. Over 15,000 of these connections are considered lead service lines. Even if many crews were contracted it could take up to 15 years to complete this work.

What will it cost to have lead service lines replaced?

Average costs have ranged from \$2,000 - \$8,000. Cost will vary depending on the length and size of service line that is needed, as well as the ground cover and soil conditions encountered.

With over 15,000 lead service lines at an estimated cost of \$4,000 for each replacement, a total cost could be \$60 million or more.

Who is responsible for replacement of lead materials?

Replacement of service pipes on private property and any leaded plumbing materials within the building structure is the homeowner/property owner's responsibility. The City of Flint owns the service pipe from the water main to the curb stop valve. This valve is normally located two feet in from the street curb.

Why doesn't the City at least replace their portion of lead service lines?

Partial lead service line replacement has been shown to exacerbate lead exposure, increasing the potential for harm, rather than reducing lead exposure. Only full lead service line replacement has been demonstrated effective in achieving long-term reductions in drinking water lead levels.

How does blood lead level monitoring relate to customer tap water monitoring?

Monitoring of blood lead levels takes into account all sources of lead exposure, not just exposure through drinking water. Water customers who have elevated levels of lead in their tap water, or who have a lead service line or plumbing materials containing lead are encouraged to be screened for blood lead level monitoring through their local county health department.

Blood lead level monitoring is overseen statewide by the Michigan Department of Health and Human Services. Their review of blood lead level testing results for the 12 month period just after the City of Flint changed its water source (May 2014 – April 2015) showed no significant change in the pattern of blood lead levels in comparison with levels reported for the previous three years. This data suggests the recent changes in source and treatment by the City of Flint water system have not increased lead exposure.